

**An analysis of patients presenting to
primary and secondary care with
dermatological conditions in south-
east Scotland with reference to the
dermatological training of general
practitioners**

Olga A Kerr

MSc Med Ed, B.T.E.C. Lasers, FRCP

Submitted for the Degree of Doctor of Medicine
University of Edinburgh 2012

TABLE OF CONTENTS

Declaration	6
Acknowledgments	7
Publications	8
Presentations	9
Abbreviations	10
Abstract	12
Chapter 1: General Introduction	15
Chapter 2: The profile of dermatological patients in primary care	
2:1 Introduction	19
2:2 Aims	24
2:3 Methods	25
2:4 Results	28
2:5 Discussion	46
Chapter 3: Secondary care study: Patients referred to dermatology out-patients in Nov 2005	
3:1 Introduction	57
3:2 Aims	59
3:3 Methods	61
3:4 Results	62
3:5 Discussion	71
Chapter 4: Dermatological training of general practitioners	
4:1 Introduction	79
4:2 Aims	84
4:3 Methods	85
4:4 Results	89
4:5 Discussion	100
Chapter 5: Conclusions and Recommendations	104
References	114
Appendices	130

LIST OF TABLES

Table 1	Dermatological workload of all participating 13 practices
Table 2	Diagnostic breakdown of all dermatological consultations in all 13 practices
Table 3	Diagnostic breakdown of all dermatological consultations in practice E7
Table 4	Diagnostic breakdown of all dermatological consultations in practice E2
Table 5	Diagnostic breakdown of all dermatological consultations in practice EL1
Table 6	Diagnostic breakdown of all dermatological consultations in the remaining 10 participating practices
Table 7	Female to male diagnostic breakdown of all 13 practices dermatological patients
Table 8	Consultant diagnosis of recurrent attendees
Table 9	Diagnostic spectrum of N:R patients in NHS and private practice in Nov 2005
Table 10	Surgical treatments performed in secondary care in Nov 2005
Table 11	Other outpatient investigations and treatments administered to patients in the dermatology department in Nov 2005
Table 12	Disposal of patients in Nov 2005
Table 13	Accuracy of general practitioners in the diagnosis of rashes
Table 14	Accuracy of general practitioners in the diagnosis of lesions
Table 15	Distribution of the NHS dermatology workload between dermatologists

LIST OF FIGURES

- Fig 1 Dermatological workload of all participating 13 practices
- Fig 2 Age range of patients presenting with eczema
- Fig 3 Age range of patients presenting with acne vulgaris
- Fig 4 Percentage of dermatological conditions in each of the 13 practices
- Fig 5 Percentage of frequent attendees in primary care
- Fig 6 Percentage of referrals per practice in the two-week collection period
- Fig 7 Diagnostic breakdown of nurse consultations
- Fig 8 Initial therapy by step (Step 1, emollient; Step 2, class I or II corticosteroid or tar; Step 3, class III corticosteroid) and age (years) for children with eczema
- Fig 9 Total numbers of New and Review patients seen during Nov 1980-2005
- Fig 10 Dermatological diagnosis of ward referrals
- Fig 11 Diagnosis of N and R patients in secondary care in Nov 2005
- Fig 12 Diagnostic profile of new patients presenting with various dermatological conditions between the years 1980-2005
- Fig 13 Numbers of patients presenting with pre-malignant lesions and skin cancers between the years 1980-2005
- Fig 14 Profile of dermatological conditions recorded in secondary care compared to primary care
- Fig 15 Type of GP answering the questionnaire
- Fig 16 No of years that GP has been in practice
- Fig 17 University attended as an undergraduate
- Fig 18 Length of undergraduate dermatology attachment in weeks
- Fig 19 Year of undergraduate dermatology attachment
- Fig 20 Form of undergraduate dermatology attachment
- Fig 21 Importance of dermatology training at undergraduate level
- Fig 22 Numbers of general practitioners having formal postgraduate training in dermatology
- Fig 23 Number of study days or courses pursued by general practitioners in dermatology
- Fig 24 The importance of dermatology teaching at postgraduate level

Fig 25 When would general practitioners value dermatological training

UNIVERSITY OF EDINBURGH

DECLARATION

I declare that

(a) the composition of the thesis is my own work

(b) the work for the thesis is my own work and that, where material submitted by me for another degree or work undertaken by me as part of a research group has been incorporated into the thesis, the extent of the work thus incorporated has been clearly indicated.

(c) the work has not been submitted for any other degree or professional qualification except as specified.

Signed:

Date: 27/7/12

ACKNOWLEDGEMENTS

My thanks to all the general practices that gave access to their dermatology patients' medical notes and their surgeries. Thanks also to all departmental members of the Department of Dermatology in Edinburgh who provided data of the secondary care dermatological consultations during November 2005. I would also like to thank all the general practitioners who completed the postal questionnaire on their experiences of teaching and training in dermatology. Thanks to both my MD supervisors Dr Michael J Tidman and Dr Elizabeth C Benton for their help and guidance in completing this manuscript and the statistician Jeremy Walker for his help with the statistics. Thanks also to Professor Julian Verbov for diligently proof reading the document. Lastly, but most importantly my sincere thanks to my husband Donald for his unfaltering support through both this my MD and my Masters in Medical Education and to my beautiful daughter Eva, who is only 3 and fails to understand why mum is not playing games instead of working on the computer.

PUBLICATIONS

- 1) The profile of dermatological problems in primary care.
Kerr OA, Tidman MJ, Walker JJ, Aldridge RD, Benton EC.
Published Online: Oct 2009 Clin Exp Dermatol.
DOI:10.1111/j.1365-2230.2009.03586.x

- 2) The changing face of dermatological practice: 25 years' experience.
Benton EC, Kerr OA, Fraser SJ, Fisher A, McCormack SK, Tidman MJ.
Br J Dermatol. 2008 Aug;159(2):413-8

- 3) Dermatological workload: primary versus secondary care.
Kerr OA, Benton EC, Walker JJ, Tidman MJ.
Br J Dermatol. 2007;157 (Suppl 1): 1-2 Abstract

- 4) General practitioners; opinions regarding the need for training in dermatology at undergraduate and postgraduate levels.
Kerr OA, Walker JJ, Boohan M.
Clin Exp Dermatol. 2006 Jan;31(1):132-3

- 5) Importance of training general practitioners in dermatology at both undergraduate and postgraduate level.
Kerr OA, Walker JJ, Boohan M.
Br J Dermatol. 2005 Jul 153 (Suppl):1-2

PRESENTATIONS

- (1) 2005 April Irish Association of Dermatologists Annual meeting (Poster)
What training have general practitioners had in dermatology?
- (2) 2005 June General Practitioners Annual meeting (Scientific paper) General practitioners experience of dermatology training both at undergraduate and postgraduate levels.
- (3) 2005 July British Association of Dermatologists Annual meeting (Scientific paper) The importance of training in general practitioners in dermatology at both undergraduate and postgraduate levels.
- (4) 2007 April Irish Association of Dermatologists Annual meeting (Scientific paper) Dermatology in primary care does it differ from secondary care?
- (5) 2007 June Scottish Dermatological Society Annual meeting (Scientific paper) The burden of dermatology in primary care.
- (6) 2007 July British Association of Dermatologists Annual meeting (Scientific paper) Dermatology workload primary versus secondary care.
- (7) 2009 June Scottish Dermatological Society Annual meeting (Scientific paper) A study of general practitioners skin surgery in Ayrshire over the last 10 years.

ABBREVIATIONS

AK	Actinic keratosis
ANP	Advanced nurse practitioner
APPGA	All Party Parliamentary Group on Skin
BAD	British Association of Dermatologists
BAUTOD	British Association of University Teachers of Dermatology
BCC	Basal cell carcinoma
BGH	Borders General Hospital
BMJ	British Medical Journal
CCI	Centre for change and innovation
C.M.R	Continuous morbidity recording
CD	Compact disc
COPE	Committee on Publication Ethics
CSAGS	Confidentiality and Security Advisor Group of Scotland
ENT	Ear nose and throat
F	Female
FY1	Foundation Year 1
GP	General practitioners
G.P.S.I	General practitioner with a special interest
GMC	General Medical Council
GPASS	General Practice administration system for Scotland
HIV	Human immunodeficiency virus
ISD	Information and statistics division
IEC	Intra-epidermal carcinoma
LP	Lichen planus
M	Male
MMC	Modernising medical careers
NCCG	Non-consultant career grade
NHS	National Health Service
NI	Northern Ireland
NICE	National Institute of Clinical Excellence

Nov	November
OPD	Outpatient department
PBL	Problem based learning
PIAG	Patient information advisory group
QMH	Queen Margaret Hospital, Dunfermline
Reg	Registrar
RHSC	Royal Hospital for Sick Children
RIE	Royal Infirmary of Edinburgh
SCC	Squamous cell carcinoma
SCC	Skin Care Campaign
SHO	Senior house officer
SI	Southern Ireland
SK	Seborrhoeic keratosis
SSC	Student-selected component
ST3	Specialist training year 3
UK	United Kingdom
USA	United States of America
VHK	Victoria Hospital, Kirkcaldy
WGH	Western General Hospital

ABSTRACT

Cutaneous disease is thought to account for 10-15% of patient consultations with general practitioners, but relatively little is known about the demography of dermatological conditions in primary care. The primary care study aims were to assess the proportion and diagnostic profile of dermatological conditions seen in primary care in the southeast of Scotland, and to draw comparisons with secondary dermatological care. General practitioners in 13 general practices serving a population of approximately 104,621 were asked to note all skin-related consultations during a two-week period. The case notes of these patients were reviewed, and diagnosis and treatment was recorded. Patients who had consulted for the same skin disorder on ≥ 3 occasions during the previous year were invited for assessment by a consultant dermatologist. Where possible, the case notes from 10% of all consultations during the two-week study period were examined to assess accuracy of recording. The percentage of consultations relating to cutaneous disorders varied between practices, ranging from 3% to 18.8%, with a mean of 8.4%. Eczema accounted for 22.5%, infections 20.3%, and benign tumours for 11.4% of consultations with a dermatological basis. In contrast, in secondary care, benign tumours accounted for 23.8%, malignant tumours 16.4% and eczema 16.3% of dermatological consultations. Dermatological disorders make up a significant proportion of general practitioners workload. The diagnostic profile of primary-care dermatology differs markedly from that of hospital practice. General practitioners may benefit from training specifically tailored to the common primary-care dermatological conditions.

In order to plan appropriate delivery of dermatology services we need to periodically assess the type of work we undertake in secondary care and to examine changing trends in the numbers and type of referrals and the workload these referrals generate. The secondary care study aims were to quantify outpatient workload in hospital-based and private practice; to assess reasons for referral to secondary care and to examine the changes over 25 years in the diagnostic spectrum of conditions referred. During November 2005, all outpatient dermatological consultations in the south-east

of Scotland were recorded. Demographic data, source of and reason for referral, diagnoses, investigations performed, treatment administered and disposal were recorded, and comparisons made with four previous studies. During the 1-month study, attendances were recorded for 2118 new and 2796 review patients (new/review 1:1.3, female / male 1.3:1, age range 0-106 years). Eighty-nine per cent of new referrals came from primary care and 11% from secondary care. Fifty-seven per cent of referrals were for diagnosis and 38% for management advice. Benign tumours accounted for 33.4%, malignant tumours 11.6%, eczema 16% and psoriasis 7.4% of new cases. For return patients, 20% had skin cancer, 16.5% eczema, 13.4% psoriasis and 9% acne. The referral rate has risen over 25 years from 12.6 per 1000 population in 1980 to 21 per 1000 in 2005, with secondary care referrals increasing from 61 in Nov 1980 to 230 in November 2005. Attendances for benign and malignant skin tumours have increased six-fold since 1980. Patients with eczema and psoriasis account for one third of clinic visits. New referrals have risen by 67%, with those from other specialities almost quadrupling since 1980 to 11% of the total in 2005.

The following chapter examined the dermatological training received by local general practitioners. There is an absence of compulsory vocational training in dermatology for general practitioners and the core medical curriculum in some UK universities is lacking in adequate dermatology training. An anonymous postal questionnaire was circulated to 583 Lothian GPs, with a response rate of 67%. A qualitative approach was used to detail GPs' experience of dermatology training in the locality both at undergraduate and postgraduate levels, and a quantitative approach to determine: (i) how important doctors consider postgraduate training in dermatology relative to training in other specialities, some of which are compulsory during their vocational training; (ii) what factors prevent doctors from pursuing postgraduate training in dermatology; (iii) how do GPs perceptions of the importance of dermatology training relate to their basic characteristics (type of GP, length of experience as a GP and gender); and (iv) how do GPs experience of their own competence in managing dermatology conditions relate to the length and type of training they have received. From all of these questions, an attempt was made to

make some recommendations regarding the future of dermatology training for general practitioners.

In total, 71% concluded that dermatology was not only an essential part of the medical core curriculum but should also be taught at postgraduate level. Most GPs concluded that dermatology training at postgraduate level was very important (40.3%) or important (56.6%), and 79.5% suggested that clinical training during ST years followed by regular (e.g. 5-yearly) updates would be optimum. GPs rate dermatology on a par with other specialities that are compulsory attachments for their vocational training. No statistical reason for failure to pursue postgraduate training was isolated. GPs' perception of the importance of dermatology was not significantly predicted by their individual characteristics. Receiving postgraduate training in dermatology was positively associated with doctors' perceptions of their own competence at managing skin conditions. Men felt more competent than women.

Dermatology should remain an essential part of the undergraduate medical curriculum it should be encouraged as a useful clinical attachment during GP vocational training. Good clinical teaching ran perhaps jointly by a dermatologist and general practitioner should be our aspiration.

Chapter 1: General Introduction

CHAPTER 1: GENERAL INTRODUCTION

During the past twenty years, pressures on dermatology services have increased across the UK with consequential increases in waiting times.

In the South East of Scotland, dermatology referrals continue to rise and we recorded a steady rise of 3% per annum between 1980 and 2000 in referrals to our department and an increase in routine out-patient waiting times between 5 and 8 fold ⁽¹⁻³⁾. This increase in demand for dermatology services may be attributed to a number of factors. The ageing population has contributed to a doubling over twenty years in cases of non-melanoma skin cancer ⁽⁴⁾. There has been a 100% increase in cases of malignant melanoma in Scotland since 1980 ⁽⁵⁾. An ageing population also leads to greater numbers of age-related dermatoses, such as pemphigoid, and varicose eczema ⁽⁶⁾. Increased media publicity has heightened public awareness and contributed to a doubling of referrals in order to exclude possible skin cancer ⁽⁷⁾. The availability of hospital-only treatments such as phototherapy and systemic retinoids for psoriasis and acne and more recently biological therapies have also contributed to an increase in referral rates. We have also witnessed a doubling of referrals from hospital colleagues ⁽⁸⁾. Demands on primary care physicians have also increased with fewer hospital beds, early transfer of patients back from secondary care and increasing bureaucratic demands ⁽⁹⁻¹¹⁾. Modernising medical careers has resulted in training for GPs where the emphasis has been on more competency-based training than time-based training which in practice may mean that GPs have had less exposure to dermatology ⁽¹²⁻¹⁴⁾. In the past, it was possible to advertise stand-alone posts for 6 months in dermatology. Most of these doctors were GP trainees who then used their skills when they entered general practice. With the new run-through system, these posts no longer exist. A change to the undergraduate medical curriculum in 1993 has impacted on the amount of dermatology to which medical students are exposed ⁽¹⁵⁾. All these changes at undergraduate and postgraduate levels have the potential to further reduce exposure to dermatology teaching and training opportunities. Changes in the GP contract reward GPs financially for the treatment of other chronic diseases. Treatment of dermatology patients in Primary Care at present does not attract a tariff

so there is little incentive to manage these patients ⁽¹⁶⁾. There has also been an increase in patient pressure for removal of benign cosmetic lesions. The formulation of the CCI guidelines ⁽¹⁷⁾ was an attempt to limit referral to secondary care of patients seeking treatment for cosmetic lesions. It is not clear whether these guidelines have reduced referral rates. One issue may be that the surgical skills necessary for managing these patients in primary care are not present and so the general practitioner is left in a difficult position. Is there a strategy for addressing this increasing demand?

Expansion in consultant numbers has occurred but that has not yet solved the problem especially in the UK where 10% of consultant posts remain unfilled ⁽¹⁸⁾. Specialist registrars are seeing smaller numbers of patients nowadays than in the past, as there is greater emphasis on formal training rotations ^(1, 19). Extra funding has been ring fenced to reduce waiting lists and many departments are facing evening and weekend clinics to try to manage waiting lists.

Models of dermatological care in USA and Europe use an office-based as well as hospital-based dermatology care service where primary dermatology care is in fact provided by fully-trained dermatologists who refer more complex cases to their hospital-based colleagues.

How to best deliver dermatological care is a politically sensitive issue at present. However, we currently lack the fundamental data from which to base such decisions. There is an urgent need to assess what range of dermatological conditions GPs are actually seeing in their surgeries, how, where and by whom these conditions are dealt with, and what and why are they referring on to their colleagues in hospital-based dermatology departments. This study aims to examine patients presenting to general practices during a two-week period with a dermatological complaint. The referrals made to secondary care in the month of November 2005 are then recorded and the reasons for and outcome of these referrals. We have also documented general practitioner training and exposure to dermatology.

Chapter 2: The profile of dermatology in primary care

CHAPTER 2: THE PROFILE OF DERMATOLOGY IN PRIMARY CARE

2:1 INTRODUCTION

Burden of Dermatology in the Community

Cutaneous disease is commonly encountered in primary care with quoted figures of 10-15% of total caseload⁽²⁰⁾. Seventy five percent of these skin problems are managed exclusively in primary care⁽²¹⁾. The impact of skin diseases on the quality of life of patients seen in primary care is comparable with that of patients seen in secondary care⁽²²⁾. However there is very little information published about the spectrum of dermatological diagnoses seen in the community compared to that observed in hospital practice. The Lambeth study from 1976⁽²³⁾ is the only general adult population study, that has been carried out in the UK to assess dermatological disease in the community. 22-25% was the overall prevalence in the community of skin disease thought to justify medical care, and yet only one fifth of this group had sought medical advice. Similar results were observed in a population survey in the USA in 1979⁽²⁴⁾. Awadalla et al⁽²⁵⁾ analysed the National Ambulatory Medical Care Survey data from 2002 to 2005 for dermatological diagnoses and most common prescriptions. Skin conditions in this study accounted for 8% of all visits to the family physicians in 2002-2005. The five most common skin disorders diagnosed were dermatitis, pyoderma, tinea, benign neoplasms, and candida. The top 20% of diagnoses accounted for 70% of the visits. The three most commonly prescribed medication classes for skin problems from 2002-2005 were antihistamines, topical anti-infectives, and corticosteroids. Fien et al⁽²⁶⁾ over 12 days in May 2004 to June 2004 noted that 21% of patients seen had at least one skin problem, which was the chief complaint 72.2% of the time.

Two studies from the UK have documented the range of dermatological conditions presenting to the primary care physician and the referral rates to secondary care. In 1984, Steele⁽²⁷⁾ recorded the spectrum of dermatological cases seen in his general practice over a period of eight weeks. He found that 8.2% of patients seen during the study period had problems of a dermatological nature. The diagnostic breakdown

was unusual in that skin tumours, both benign and malignant were not reported, this may have been due to coding issues and also this study predated the publicity campaigns on early detection of skin cancers. He referred 6.5% of the patients he saw to a dermatology consultant. However he comments that this would have increased to 22% had he not had access to facilities for cryotherapy and other minor skin surgery. Another general practitioner from a semi-rural practice, who worked also as a hospital practitioner in dermatology, charted all the dermatology cases she encountered over a 5- year period ⁽²⁸⁾. The proportion of her caseload comprising dermatological problems rose from 16% in 1989 to 37% in 1994. However, the rising workload might suggest selection bias with possible practice referrals based on her interest in dermatology. Her referral rate of dermatological patients to secondary care was 1% of her total case load.

Other studies have looked at the secondary care dermatological workload. In a UK study ⁽²⁹⁾ of new referrals from GPs to a dermatology department over a 6-month period, it was noted that 21% of patients attended hospital on only one occasion and their management required no specialized diagnostic or therapeutic procedures. Eleven per cent of referrals were for minor surgical procedures such as curettage, shave biopsy, or cryotherapy. It was suggested that referral of such cases would become unnecessary if appropriate facilities were available in the community. The conclusions thus were that there is potential for managing up to one third of current dermatological referrals by improving education of GPs and providing appropriate facilities within the community. However, over two-thirds of patients require hospital facilities, a finding of considerable relevance to the future location of dermatological services.

An example of how successful primary care education can be is illustrated by the experience in Lothian. There was a concerted campaign from 1980 onwards to train both general practitioners and practice nurses in cryotherapy. This resulted in a dramatic reduction in the numbers of referrals of patients with viral warts to our department with a reduction from 16% to 2% of new cases seen ⁽³⁰⁾.

A USA study⁽³¹⁾ looked at presentation rates for various age groups and conditions to office-based dermatologists. Male patients made up half or more of all visits in only two diagnostic categories skin infections and malignancies (50% and 53%, respectively). Male patients made up no more than 40% of visits for all other dermatological diagnoses. The relative frequency of inflammatory skin conditions and diagnoses such as corns, callosities, ichthyoses, seborrhoeic keratoses, and diseases of the nails and hair increased with age. Almost one third (31%) of all visits by patients 65 years of age and older were for these conditions, compared with only 8% of patients less than 45 years old and 25% of those 45 to 64 years of age.

The New GP Contract

The new GP contract came into effect on 1 April 2004 and was designed to bring about a range of improvements in primary care in providing demonstrable benefits to general practitioners, to other healthcare professionals, to the health service in general and most importantly to patients. Although there are subtle differences in the contract between England, Scotland Wales and N.I. these minor differences would not have any significant impact on the delivery of care to dermatology patients. There is anticipated to be improved access to services by local people through Health and Social Services Boards commissioning and enhanced services to encourage the development of a wider range of services closer to home. It is hoped that there will be better management of chronic diseases through a new framework which will provide significant rewards to practices to recognise improvements in clinical standards A significant proportion of the new money tied to the contract is available to reward practices for providing higher quality services. The clinical areas targeted are stroke or transient ischaemic attacks, hypertension, diabetes, chronic obstructive pulmonary disease, epilepsy, hypothyroidism, cancer, mental health and asthma. Dermatological conditions are not yet recognised as an area that should be targeted and thus may lead to less importance being attached to dermatological conditions in the community. Practices are expected to provide additional services, covering cervical screening, contraceptive services, vaccination and immunisation, child health surveillance, maternity services (including intra-partum care) and some minor surgery procedures although there is no necessity for them to do so. Health and

Social Services Boards must also commission a range of Directed Enhanced Services to provide among other recommendations minor surgery. All enhanced services may be commissioned from GP practices or from elsewhere and a practice will not have to provide any of the enhanced services unless it wishes to do so. The cost effectiveness of many of the services, which GPs are now required to provide, is unproven. It is possible that GPs are being induced to practice inefficiently. There is no financial incentive for GPs to better manage their dermatological patients and as minor surgery is now an enhanced service, there is no necessity for a general practice to offer a minor surgery service unless it particularly wants to do so. There is also a paucity of local minor surgical training courses for general practitioners which results in general practitioners not having the opportunity to keep their skills up to date. The contract also introduced a Quality and Outcomes framework (QuOF) with activity targets for a range of chronic conditions such as asthma, diabetes, hypertension (Department of Health 2003a)⁽³²⁾. The framework does not include any targets that relate to skin disease although the SCC and APPGS are lobbying for their inclusion.

There are differences between England and the rest of the UK in the delivery of secondary care services which has undoubtedly impacted on the experience of our patients. Since 1997 the redesign of dermatology services in England has, to a large extent, been influenced by central government policy. Such direction is not necessarily based on evidence of effectiveness. Policy decisions are often implemented without formal evaluation. These issues are less relevant in other parts of the UK, where the model of contestability and the market place has not been established and the health care systems are slightly different⁽³³⁾. Services in England need to be designed to meet the nationally published access times for time from referral to first definitive treatment, and for the diagnosis and management of skin cancer. These targets are not all applicable to Scotland at present. Waiting times for specialist dermatology services have fallen dramatically over the last ten years and centrally imposed Department of Health targets in England for access to care appear to be met; however evidence suggests that as waiting times for specialist care reduce, referral rates increase. Despite national stakeholder consensus views about

good models of care, which are based on the available evidence, it is not clear in England whether it will be possible to design and implement financially stable and viable services for people with skin disease. Most of the uncertainty relates to whether the widely published national guidance, which stresses the importance of integrated services across health communities, can be implemented within the new NHS market place. Whilst it is hoped that the development of Payment by results (PBR), Foundation hospitals, patient choice and competition between providers (contestability) will provide opportunities for clinicians to provide different, new or additional services, there are documented concerns about whether such ideals will be possible (Department of Health 2007b) ⁽³⁴⁾.

Other parts of the UK have rejected, to date the models of contestability and choice to drive health service improvement that have been implemented in England ⁽³³⁾. In Scotland, in particular there is very limited involvement of the private sector, and patients have free social care. However waiting times remain long. The emphasis is increasingly on abolishing the purchaser/provider divide, with integration of the health care system. There is a reliance on professionals to deliver policy changes and, it is said, the “politics value professionalism, as well as the professionals” ⁽³³⁾.

In Wales, where prescription charges have been abolished, there has been more innovation around public health because of good links between NHS and local government. There has been much less emphasis on reducing waiting times and these remain a problem.

Progress in Northern Ireland has been slow because of the political difficulties in the establishment of the Northern Ireland Assembly. There is now, however a move towards reconfiguration of hospital Trusts and a move to develop commissioning models, but the future direction of change is not yet clear.

Treatment modalities employed by general practitioners

There is some evidence to suggest that non-dermatologists are more likely to use a more expensive, less effective treatment regimens than dermatologists, suggesting

that dermatologists are more cost-effective than non-dermatologists in the treatment of common skin disorders ⁽³⁵⁻³⁶⁾. We may expect that one outcome of reduced diagnostic accuracy in the assessment of skin disease would be the increased use of combination anti-infective/anti-inflammatory products. Such combination therapy is available to treat cutaneous fungal disease. These products are less effective as anti-fungal agents but do provide anti-inflammatory activity for treating inflammatory dermatoses. Non-dermatologists prescribe more combination corticosteroid /anti-infective products for all skin diseases than dermatologists do ⁽³⁷⁾. These observed differences could of course be explained by differences in the conditions that are seen and treated by physicians of different specialties. Other possible explanations are that non-dermatologists are treating conditions without making a specific diagnosis or may be less familiar with studies detailing cutaneous therapeutic efficacies

2:2 AIMS

The aims of the primary care study were

- (1) To assess the burden of dermatological disease in primary care in Edinburgh and the Lothian Region by calculating the proportion of GP consultations involving a dermatological problem during a two-week period.
- (2) To record the diagnostic profile of dermatological conditions in primary care.
- (3) To record details of patients who presented with the same skin complaint on 3 or more occasions during the previous year for verification of diagnosis by a consultant dermatologist and assessment of whether additional primary care treatment was possible or if referral to secondary care was appropriate.

2:3 METHODS

A pilot study in a single practice was undertaken and on this basis the following methodology was employed. Following ethical approval, thirteen general practices were randomly selected and invited to participate. Only 6 practices agreed, and so an additional 7 practices were recruited by a direct (non-random) approach. The 7 practices that declined had similar deprivation indices to the 6 agreed practices and were scattered across the whole geographical patch and therefore there did not seem to be a marked difference between the practices that agreed to partake and those that didn't. On the advice of the statistician it was agreed that a further randomisation process would have been unlikely to include the 7 additional chosen practices, and would have been unlikely to include the 6 random practices who did agree initially and would have necessitated withdrawal from the randomization process, of the practices who refused to participate and so repeating the selection to obtain a desirable list invalidates the process of random selection in any case. Their geographical location reflected the population distribution across urban, rural and semi-rural regions (Appendix 1 p131).

Region	Approx population	Total numbers of patients sampled	Number of practices chosen
Edinburgh	(493,000)	57,742	7
West Lothian	(164,000)	18,929	2
East Lothian	(94,000)	14,939	2
Mid-Lothian	(84,000)	13,011	2

Each of the 13 participating practices chose a two week time frame during 2004 and 2005 for data collection, during which general practitioners noted all consultations pertaining to cutaneous disease. This two week period was scattered throughout the year to negate seasonal influences in presentation of dermatological conditions. To ensure a negligible influence on the usual working practice of the participating general practitioners, most of the arrangements were made through the respective practice managers, and only at the end of the 2-week recording period were case notes of patients reviewed. The dermatological diagnosis was coded using the same

rough diagnostic groups that had been employed in previous hospital based studies that have been undertaken in Edinburgh (Appendix 2 p136). The same diagnostic groups were used in an attempt to enable us to directly compare dermatological diagnosis in primary care with that of previously collected data and more recent data in secondary care. All data were entered into a secure Access database (Appendix 3 p137). The coding in general practice was all done by myself. The case notes of 10% of all patients attending during the two week study period were examined where possible, to assess the accuracy of documentation of dermatological problems. The total number of consultations during the study period was also recorded and thus the proportion of those pertaining to the skin was calculated. Patients were identified by their gender and date of birth: data recorded included the GP diagnosis, number of consultations for skin problems over the previous one year, the treatment instigated and whether referral had been made to secondary care. Patients who had consulted their general practitioner with the same skin complaint on 3 or more occasions during the previous year (referred to as frequent attendees) were invited for assessment by a consultant dermatologist who reviewed the diagnosis and treatment recommended by the general practitioner and assessed whether additional primary care treatment was possible or if hospital referral was indicated (Appendix 4 p138). Three or more visits was chosen as a previous study suggested that most people consult their GP less than three times per year with a dermatological condition ⁽³⁸⁾.

The required sample size was determined by the statistician with reference to the formula $p \pm 1.96 \times SE(p)$, where p represents the proportion of skin-related consultations seen and $SE(p)$ the standard error of p . The latter is given by the formula $\sqrt{p(1-p)/n}$, where n is the total number of recorded consultations ⁽³⁹⁾. Based on an initial estimate that consultations related to skin disease represent around 10% of total caseload [derived from Continuous Morbidity Recording (CMR) data for 2002] and in the expectation that the unknown true proportion was likely to fall within the range 5–15%, it was calculated that a total of 4600 GP consultations would permit an estimation of the proportion of GP consultations that involved dermatological problems to within $\pm 1\%$ of the true value, with 95% confidence intervals.

CMR was first piloted in 1994 in a small number of practices in Scotland. By 1998, 48 practices were participating and CMR became recognized as a 'national' dataset. CMR allows the collection of primary care morbidity data following a face-to-face contact between a general medical practitioner and a patient. Data are recorded into GPASS (the computer system used by over 80% of Scottish general medical practices) and a monthly extract from each practice is sent to the Information and Statistics Division (ISD) for analysis. Currently there are 70 practices participating in CMR, covering around 8% of the Scottish population. A subset of these practices form the 'national sample' and as a group their patients are broadly representative of the Scottish population in terms of age, sex, deprivation and urban/rural mix. The CMR data have been used to estimate general practitioner activity (consultations), incidence (new episodes) and prevalence (patients) for specific conditions/diseases. CMR data was not utilised for this study as they code under the ICD 9 and 10 chapters entitled Disorders of the Skin and Subcutaneous tissues. The ICD 9 and 10 codes do not include the following skin tumours, benign and malignant and many common skin infections, including viral warts. It was felt therefore that a more representative burden of dermatological cases would be ascertained by our described methodology.

2:4 RESULTS

Table 1 and Fig 1 below details the percentage of consultations in the two-week collection period that were of a dermatological nature in all participating 13 practices. Table 1 also details the total number of general practice consultations in the two-week collection period for each individual practice. Frequent attendees, those patients who presented on 3 or more occasions with the same dermatological diagnosis are also included as a percentage of the total dermatological workload.

Table 1: Dermatological workload of all participating 13 practices

Practice	Practice population	Total number of consultations in 2 week period	Consultation rate per capita population %	Dermatology Consultations (% of total consults.)	Frequent dermatological attendees (% all dermatology. consultations)
E1	3395	331	9.7	7.3	29.2
E2	9550	802	8.4	11.0	29.6
E3	6659	723	10.8	10.4	25.3
E4	7003	750	10.7	4.4	45.5
E5	6067	625	10.3	13.0	21.0
E6	8632	720	8.3	4.6	27.3
E7	9550	1036	10.8	16.0	19.9
WL1	7761	365	4.7	3.0	45.5
WL2	11,168	1062	9.5	3.7	28.2
ML1	2908	64	2.2	18.8	33.3
ML2	6698	554	8.3	6.7	4.3
EL1*	8618	498	5.8	8.2	19.5
EL2	5334	241	4.5	5.8	14.3
Total	93,343	7771	8.3	8.4	25.0

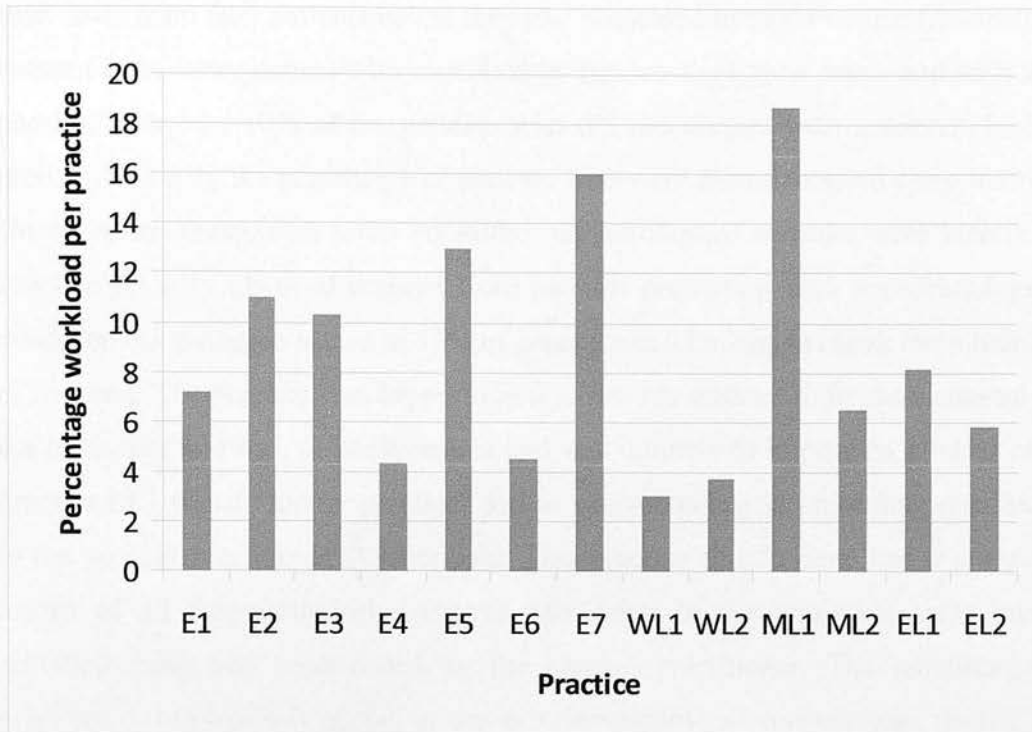
Consultation rates, total and dermatological, including frequent attendees

E = Edinburgh (urban), WL = West Lothian (urban /semi-rural),

ML = Mid Lothian (urban /semi-rural), EL =East Lothian (semi-rural /rural)

*Practice submitting data via CMR

Fig 1: Dermatological workload of all participating 13 practices



Seven hundred and twenty-one dermatology-related consultations were recorded in the database. For the purposes of establishing proportions of dermatological consultations and diagnostic breakdowns, consultations given by district nurses and by practice nurses were excluded. Not all practices included data on practice nurse or district nurse consultations (Individual practice data are recorded in Appendix 9, p146).

After exclusion of the 67 consultations seen by either district or practice nurses a total of 654 skin-related consultations remain available for analysis. These 654 consultations with a dermatological component were recorded in a total consultation load of 7,771 (Table 1). The overall proportion of skin-related consultations is therefore $654/7,771 = 8.42\%$.

It was only possible for us to validate the data from 3 of the 13 practices due to consent issues with individual practices. Some practices felt that it was necessary to obtain consent from every individual patient consulting in the two-week collection

period in order for me to access their case notes and therefore I was unable to access case notes from their patients unless they had consented to this. Practice E7 obtained consent from every patient who consulted in the two-week time frame and so it was possible to access 10% of the patients who did not consult with a dermatological problem to verify the percentage of patients who were dermatological consultations. On accessing these, case notes no further dermatological consults were identified. Practice E2 only obtained consent from patients presenting with a dermatological condition but did agree access to 10% of general consultations to check the reliability of the data. The practice was happy to access records without individual consent on the basis that this was an audit project and was unlikely to impact on clinical care. Practice EL1 was a “spotter practice” and so was recording all presenting conditions to the general practitioner (CMR) data. This practice should have had a complete record of all dermatological diagnosis presenting in the two-week time frame, provided these had been coded by the general practitioner. The remaining 10 practices did not permit access to the non-dermatological consultations during the two-week collection period making it difficult to validate the figures collected for these practices.

The diagnostic breakdown of the total 654 consultations is shown below (Table 2). The proportion of skin-related consultations and the diagnostic breakdown are presented for Practice E7, E2 and EL1 below (Tables 3-5). Practice E7 recorded 166 skin-related consultations from a total of 1036 giving a prevalence of 16% (95% confidence interval:13.8% to 18.3%): no further skin consultations were found on checking a 10% random sample of case notes from the two-week collection period. Practice E2 recorded 88 skin-related consultations from a total of 802 (10.97% dermatology consultations 95% confidence interval: 9.5% to 13.9%): after sampling 10% of case records, a further 8 cases were found representing an under-recording of 10%. Practice EL1 recorded 41 skin-related consultations from a total of 498 (8.2%, 95% confidence interval 5.8% to 10.6%): on further sampling of records 4 additional dermatological cases were identified representing an under-recording of 8%. For the remaining 10 practices the proportion of dermatological consultations is 359/ 5435 6.6% (95% confidence interval). The remaining 10 practices data have been

presented together (Table 6) as it was not possible to validate their individual practice data. It is however interesting to note that the top diagnosis in the 10 un-validated practices is very similar to the data from the 3 fully validated practices.

Table 2: Diagnostic breakdown of all dermatological consultations in all 13 participating practices

DIAGNOSIS	Numbers of patients	Percentage
Eczema	156	23.9%
Infection	132	20.2%
No diagnosis offered	53	8.1%
Miscellaneous	45	6.9%
Other benign tumours	40	6.1%
Acne vulgaris	33	5.0%
Viral warts	33	5.0%
Psoriasis	29	4.4%
Seborrhoeic keratosis	26	4.0%
Benign naevi	17	2.6%
Urticaria	16	2.4%
Actinic keratosis	14	2.1%
Infestation	12	1.8%
Reactive skin conditions	10	1.5%
Acne rosacea	7	1.1%
Hair disorders	6	0.9%
Basal cell carcinoma	4	0.6%
Squamous cell carcinoma	4	0.6%
Melanoma	4	0.6%
Lichen planus	3	0.5%
Nail disorders	3	0.5%
Intra-epidermal carcinoma	2	0.3%
Venous ulcers	2	0.3%
Other malignant tumours	2	0.3%
Immunobullous disorders	1	0.2%

Table 3: Diagnostic breakdown of dermatological patients in Practice E7

PRACTICE E7

DIAGNOSIS	Number of patients	Percentage
Eczema	41	24.7%
Infection	35	21.2%
Miscellaneous	15	9.1%
Viral warts	14	8.4%
No diagnosis offered	12	7.3%
Acne vulgaris	10	6.0%
Other benign tumours	9	5.4%
Acne rosacea	5	3.0%
Actinic keratosis	5	3.0%
Psoriasis	4	2.4%
Urticaria	4	2.4%
Benign naevi	3	1.8%
Seborrhoeic keratosis	3	1.8%
Melanoma	2	1.2%
Squamous cell carcinoma	2	1.2%
Infestation	1	0.6%
Nail disorders	1	0.6%

Table 4: Diagnostic breakdown of dermatological patients in Practice E2

PRACTICE E2

DIAGNOSIS	Number of patients	Percentage
Infection	22	25%
Eczema	15	17.1%
No diagnosis offered	9	10.2%
Miscellaneous	8	9.1%
Psoriasis	6	6.8%
Acne vulgaris	5	5.7%
Other benign tumours	4	4.5%
Viral warts	4	4.5%
Seborrhoeic keratosis	3	3.4%
Actinic keratosis	2	2.3%
Malignant melanoma	2	2.3%
Urticaria	2	2.3%
Hair disorders	1	1.1%
Infestation	1	1.1%
Intra-epidermal carcinoma	1	1.1%
Lichen planus	1	1.1%
Nail problems	1	1.1%
Drug eruption	1	1.1%

Table 5: Diagnostic breakdown of dermatological patients in Practice EL1

PRACTICE EL1

DIAGNOSIS	Number of patients	Percentage
Eczema	18	43.9%
Infection	5	12.2%
Miscellaneous	3	7.3%
Psoriasis	3	7.3%
Benign pigmented naevi	2	4.9%
Other benign tumours	2	4.9%
Urticaria	2	4.9%
Acne rosacea	1	2.4%
Acne vulgaris	1	2.4%
Other malignant tumours	1	2.4%
Seborrhoeic keratosis	1	2.4%
Reactive Drug eruption	1	2.4%
No diagnosis offered	1	2.4%

Table 6: Dermatological diagnosis of patients in the 10 remaining participating practices

DERMATOLOGICAL DIAGNOSIS FOR REMAINING 10 PRACTICES

DIAGNOSIS	Number of patients	Percentage
Eczema	82	22.8%
Infection	70	19.5%
No diagnosis offered	31	8.6%
Other benign tumours	25	7.0%
Miscellaneous	19	5.3%
Seborrhoeic keratosis	19	5.3%
Acne vulgaris	17	4.7%
Psoriasis	16	4.5%
Viral warts	15	4.2%
Benign naevi	12	3.3%
Infestation	10	2.8%
Urticaria	8	2.2%
Reactive skin rash	8	2.2%
Actinic keratosis	7	1.9%
Hair disorders	5	1.4%
Basal cell carcinoma	4	1.1%
Squamous cell carcinoma	2	0.6%
Lichen planus	2	0.6%
Venous ulcers	2	0.6%
Nail disorders	1	0.3%
Acne rosacea	1	0.3%
Intra-epidermal carcinoma	1	0.3%
Other malignant tumours	1	0.3%
Immunobullous disorders	1	0.3%

The female to male ratio of the total 654 consultations was 365 F: 289 M 1.3:1. The diagnostic breakdown of these patients is recorded below (Table 7). There was no notable difference between the diagnoses of males and females. The most common diagnoses in the males and females were similar.

Table 7: Female to male diagnostic breakdown of all 13 participating practices

DIAGNOSTIC BREAKDOWN OF PATIENTS

DIAGNOSIS	Female	Percentage	Male	Percentage
Eczema	84	23.0%	70	24.2%
Infection	54	14.8%	65	22.5%
Miscellaneous	46	12.6%	23	8.0%
No diagnosis offered	36	9.9%	13	4.5%
Other benign tumours	21	5.8%	17	5.9%
Psoriasis	20	5.5%	12	4.1%
Viral warts	17	4.7%	16	5.5%
Acne vulgaris	15	4.1%	18	6.2%
Seborrhoeic keratosis	12	3.3%	12	4.1%
Benign pigmented naevi	9	2.5%	7	2.4%
Infestation	8	2.2%	2	0.7%
Urticaria	8	2.2%	8	2.8%
Actinic keratosis	6	1.6%	7	2.4%
Hair disorders	5	1.4%	3	1.0%
Venous disease	5	1.4%	1	0.3%
Nail disorders	4	1.1%	4	1.4%
Acne rosacea	3	0.8%	5	1.7%
Lichen planus	3	0.8%	0	
Melanoma	3	0.8%	0	
Intra-epidermal carcinoma	2	0.5%	0	
Squamous cell carcinoma	2	0.5%	2	0.7%
Basal cell carcinoma	1	0.3%	0	
Immunobullous disorders	1	0.3%	0	
Other malignant tumours	0		2	0.7%

There was an even spread of age groups represented in all disease categories. There was a preponderance of children in the eczema sub group under the age of 5 years

old Fig 2. This is worthy of mention as different resources may need to be factored into the practices to cater for this group. There was also a preponderance of teenagers in the acne vulgaris subgroup Fig 3, again this is to be anticipated.

Fig 2: Age range of patients presenting with eczema

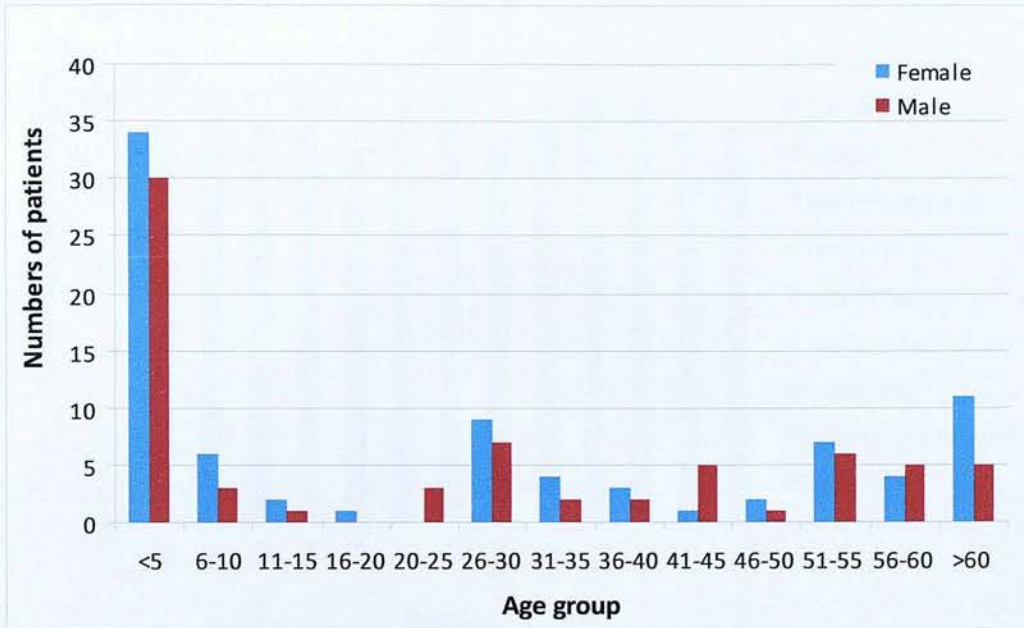


Fig 3: Age range of patients presenting with acne vulgaris

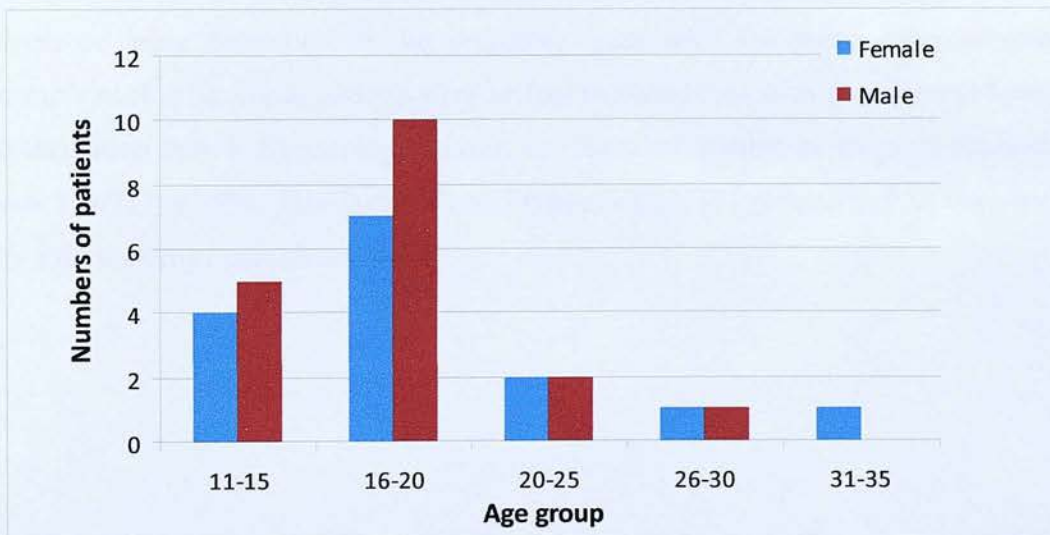
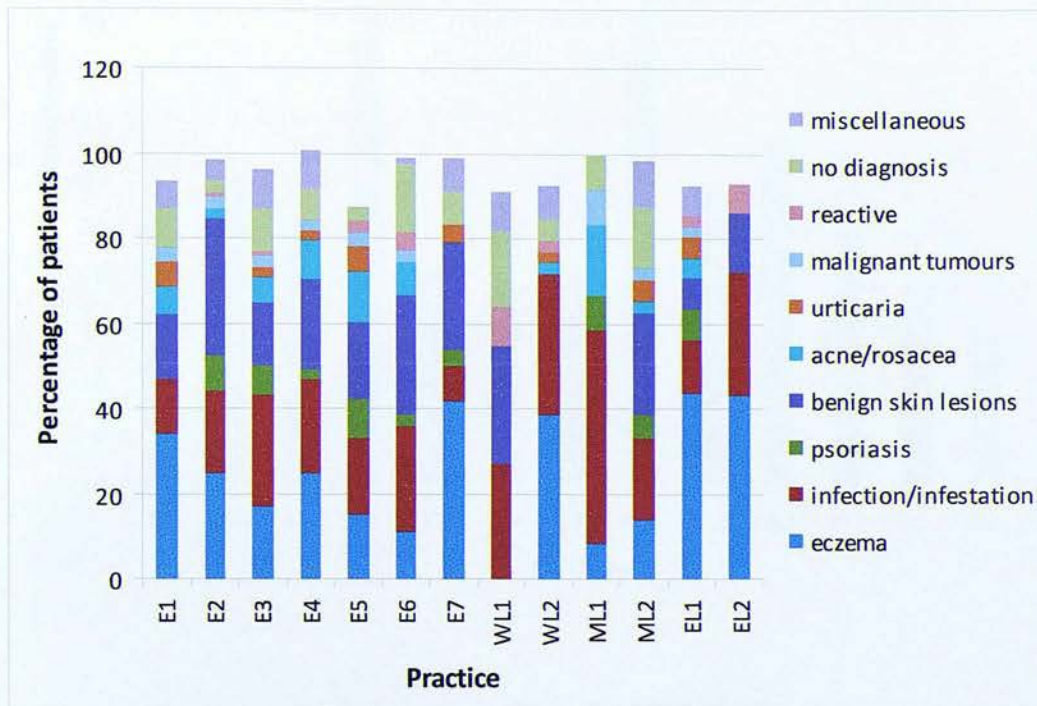


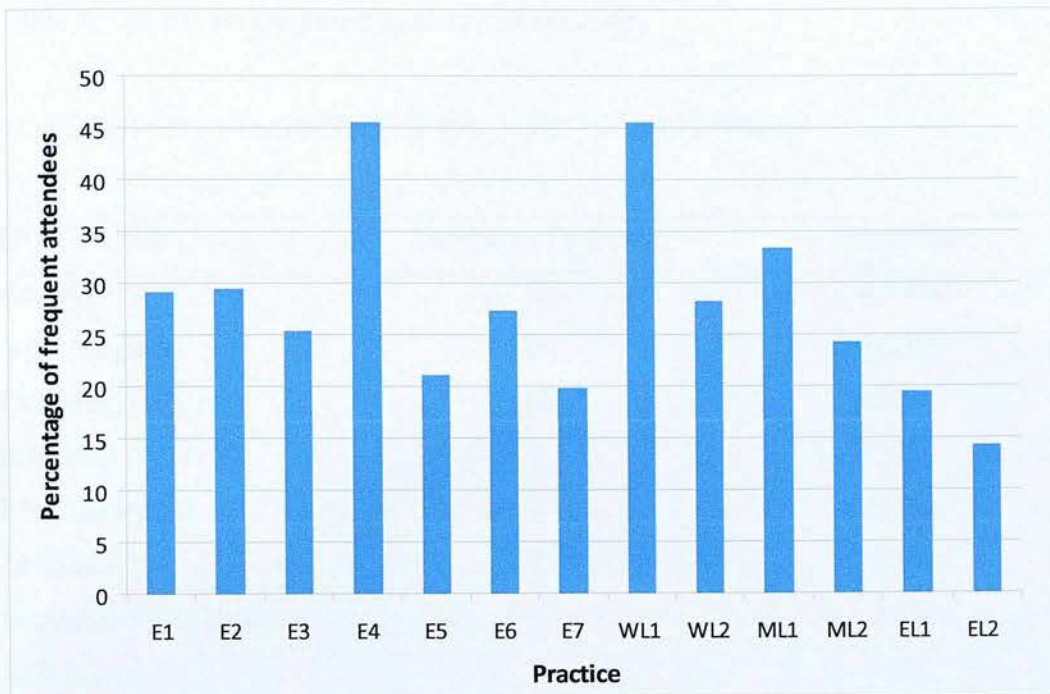
Figure 4 below shows graphically the percentage of different dermatological conditions in all 13 participating practices

Fig 4: Percentage of skin conditions in each general practice



Frequent attendees were patients who had consulted their general practitioner on three or more occasions in the preceding year with the same dermatological complaint (Fig 5). These patients were invited to attend their own practice and have a consultation with a dermatology consultant. The total number of frequent attendees was $165/721=22.9\%$. One hundred and fourteen of the 165 patients (69%) were seen by a dermatology consultant.

Fig 5 Percentage of frequent attendees per practice



The consultant diagnosis of the recurrent attendees is detailed below (Table 8).

Table 8: Consultant diagnosis of recurrent attendees

CONSULTANT DIAGNOSIS OF RECURRENT ATTENDEES

DIAGNOSIS	Numbers of patients	Percentage
Eczema	50	43.9%
Acne vulgaris	14	12.3%
Psoriasis	10	8.8%
Infection	9	7.9%
Miscellaneous	7	6.1%
Urticaria	7	6.1%
Immunobullous disorders	3	2.6%
Nail disorders	2	1.8%
Other benign tumours	2	1.8%
Squamous cell carcinoma	2	1.8%
Connective tissue disease	1	0.9%
Reactive skin rash	1	0.9%
Actinic keratosis	1	0.9%
Basal cell carcinoma	1	0.9%
Venous disease	1	0.9%
Hair disorders	1	0.9%
Infestation	1	0.9%
Intra-epidermal carcinoma	1	0.9%

If we compare the recurrent attendees' diagnosis with the most common dermatological conditions presenting in primary care it is evident that eczema accounts for a significant workload. Eczema accounts for 22.5% of all dermatology patients, 44% of frequent attendees and 26% of all hospital referrals in primary care. Chronic skin conditions like acne vulgaris and psoriasis are also a significant burden on the general practitioner's time as these patients seem to be attending more

frequently. We have detailed the management of the frequent attendees below for the most common dermatological diagnoses.

Eczema

Fifty patients had been attending their general practitioner on three or more occasions in the preceding year with eczema constituting 43.9% of the recurrent attendees. Nineteen of these patients failed to attend the appointment with the consultant and so it was not possible to comment further on their management in primary care. 16/50 (32%) of patients had received appropriate management in primary care as assessed by the consultant dermatologist. Fifteen patients (30%) had sub-optimal treatment in primary care as assessed by the same consultant dermatologist reviewing the patient and the case notes at the time of the consultation with her. Usually the patients needed an increase in the potency of their topical steroid. Seven of these patients (14%) with eczema were referred to secondary care, two referrals were deemed inappropriate by the consultant at the time the GP made the referral and based on the clinical presentation of the patient on seeing the consultant. For both of these patients, further treatment could have been instituted in primary care. A further 13 patients, 26%, could have been referred, 3 may have benefited from patch-testing; two of these patients had hand eczema and a further patient had stasis eczema. The remaining 10 needed secondary care treatment for management of their eczema. Two patients had been incorrectly diagnosed with eczema by the general practitioner, one patient having tinea corporis and the second patient dermatomyositis.

Acne vulgaris

12.3% of the recurrent attendees were diagnosed with acne vulgaris. 8/14 (57.1%) of patients had their acne managed appropriately in primary care. 5/14 (35.7%) of acne patients had sub-optimal treatment in primary care. These patients either did not have adequate courses of antibiotics or did not have combination treatments when this may have been beneficial. One patient failed to attend their appointment with the consultant. Four patients (28.6%) had been referred to secondary care and all of these referrals were deemed appropriate, as these patients may have benefited from

hospital treatment. Furthermore a further patient would also have benefited from referral. In total 5/14 (35.7%) of acne patients would have benefited from hospital referral.

Psoriasis

20 % of the frequent attendees were diagnosed with psoriasis. 3/10 (30%) of psoriatic patients had appropriate treatment in primary care. 4/10 (40%) of psoriasis patients had sub-optimal treatment in primary care. These patients could have had topical anti-psoriatic treatments in primary care or topical steroids, which may have benefited their disease. Three of the ten patients (30%) with psoriasis failed to attend their appointment with the consultant. Five patients were referred to secondary care (50%), two of these were deemed inappropriate their psoriasis was not severe enough to merit hospital treatment. A further patient with severe psoriasis would have benefited from referral.

Infective skin conditions

Patients with infective skin conditions e.g. tinea, constituted 7.9% of the frequent attendees. 4/9 (44.4%) of patients diagnosed with infective skin conditions had been treated appropriately in primary care. 3/9 (33.3%) of patients with infection failed to attend their appointment with the consultant. Two patients had been incorrectly diagnosed with infective skin conditions and were thought to be suffering instead from eczema. One patient (11.1%) was referred to secondary care and this referral was deemed appropriate. A further 2 patients (22.2%) would also have benefited from referral to secondary care.

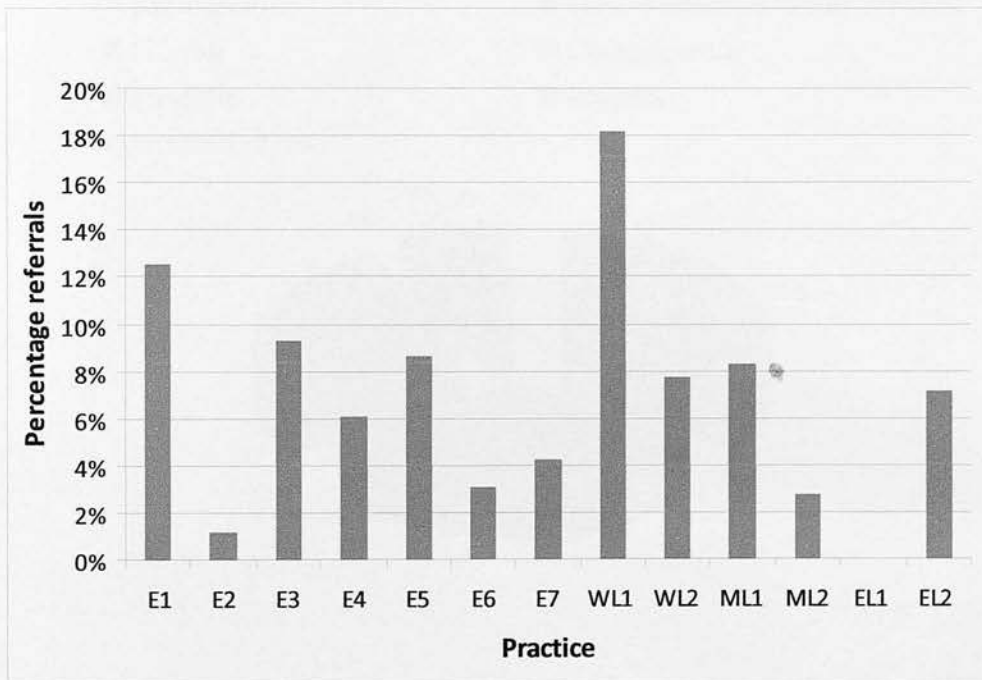
Urticaria

Patients diagnosed with urticaria constituted 6.1% of the recurrent attendees. 4/7 (57.1%) of these patients had appropriate treatment in primary care. Two patients (28.6%) had been incorrectly diagnosed with urticaria and were suffering from eczema One patient 14.3% had sub-optimal treatment for urticaria. This patient did not have appropriate combination therapy which may have helped the urticaria. Two patients (28.6%) were referred to secondary care; one referral was deemed

inappropriate as the patient had not had adequate primary care treatment. A further patient (14.3%) would have benefited from secondary care referral.

The referral rate in the two-week collection period also varied between practices from 0 to 18.18% (Fig 6). The total referral rate was 14%; the most common conditions referred were eczema (26%), suspected skin malignancy (13%), psoriasis (12%), uncertain diagnosis (11%), benign tumours (8.7%), acne (7.6%) and infections (5.4%). The outcome of these referrals were not documented, it was felt that a better snapshot of the reasons for referral and the outcome of these were best studied in the secondary care arm of the study. There were however, additional patients identified who would have benefited from a referral to secondary care.

Fig 6: Percentage referrals from each practice



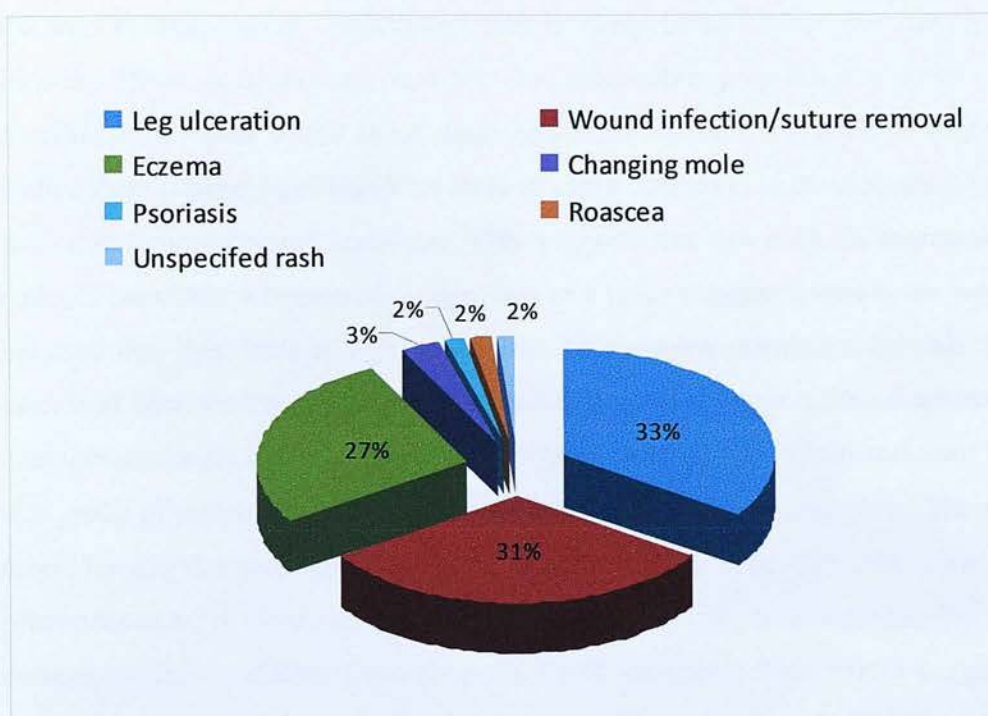
Nurse Consultations

Not all practices recorded nurse consultations and so it was felt that to do any formal analysis on this small group of patients may not be entirely representative.

The percentages of nurse consultations relating to dermatological conditions are detailed in Appendix 9 p146. Of a total of 2342 recorded nurse consultations 67 of

these were felt to represent patients who consulted with regards to a dermatological condition (2.9%). These patients may have mentioned their dermatological condition incidentally when they visited the practice nurse regarding a separate issue. A lot of these patients however would have been attending the practice nurse on a frequent basis e.g. with leg ulceration. Comparing the number of patients the doctors had seen with leg ulceration 6/653 (0.9%), leg ulceration thus represents a far greater proportion of the practice nurses time than that of the doctors. The diagnostic breakdown of these patients is detailed below (Fig 7).

Fig 7: Diagnostic breakdown of nurse dermatological consultations (percentages)



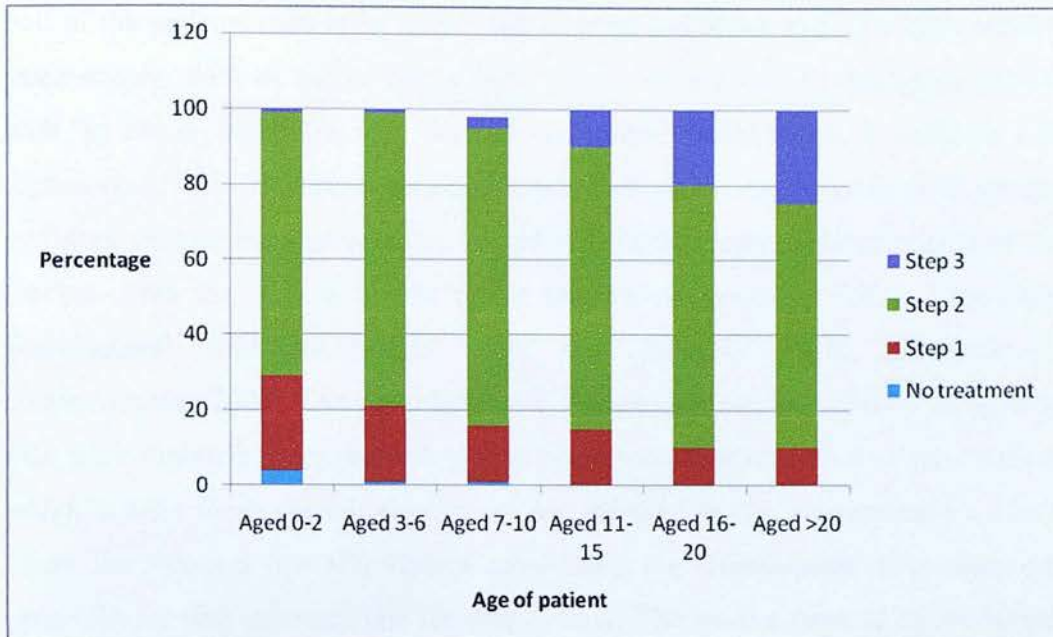
2:5 DISCUSSION

There was considerable variation in dermatological workload between the practices, from 3% to 18% of total consultations, with a mean of 8.4%. The dermatological workload for E7 which was fully validated was 16.0% and for the other two practices where we were able to partially validate the results was 11.0% and 8.2%. It would seem reasonable to assume that the true dermatological workload probably lies somewhere between 8.4% and 16.0%. This is lower than those from a similar study in England ⁽⁴⁰⁾ as I was reliant on GPs recording patients that presented with a dermatological condition as opposed to collecting ICD data which I had hoped would lead to a more accurate recording of dermatological patients in primary care and so the true dermatological consultation rate is likely to be higher than my reported figures. These patients also constitute a reasonable proportion of the general practitioner's repeat visits as of these 654 consultations 165 patients (25%) had visited their general practitioner on three or more occasions in the preceding year for the same dermatological condition. This suggests that not only do dermatological patients constitute a reasonable proportion of a general practitioners acute workload but also that they have a high return rate. The reasons postulated for this will be discussed later. Perhaps if the general practitioner had the appropriate diagnostic and management skills in particular for the frequent attendees the return rate may fall for this group of patients thus saving the general practitioner valuable time. There were more female dermatological patients consulted than male 365:289. This F: M preponderance is evident in all general practitioner consultations ⁽⁴¹⁾. Most dermatological conditions have an equal F: M incidence. This would suggest that there is a cohort of patients in the general population with dermatological conditions that have not yet presented to their general practitioner. It may seem reasonable to postulate that female patients may be more concerned with lesions that they might deem as a cosmetic nuisance which may be reflected in the consultation rates of female dermatological patients. However, the diagnostic profiles of both the male and female patients were roughly similar.

It would seem reasonable to tailor GP education programmes to the dermatological diagnoses that they encounter most frequently in primary care. As many dermatological diagnoses are more common in primary care than in secondary care a joint teaching session between dermatologists and general practitioners may be advisable. If we teach general practitioners the diagnosis and management of eczema this may influence the management of a large cohort of their patients. Good education programmes on the identification of benign and malignant lesions with perhaps some structured minor surgical training may enable general practitioners to better manage lesions in primary care.

The percentage of frequent attendees between different practices ranged from 14.3% to 45.4% an average of 25% of the total dermatological workload for the general practitioner. There were a few recurring themes that were identified in this cohort of patients. Almost half of these patients had eczema, the management of which in some cases was sub-optimal. This highlights again the importance of ensuring that general practitioners have the appropriate skills to manage eczema in primary care. Few studies have documented the treatment of atopic eczema in primary care. Verboom et al ⁽⁴²⁾ detailed the treatment received by children with atopic eczema from their general practitioner. Young children were treated more commonly with emollients. A similar reluctance to prescribe more potent topical steroids was noted. Fig 8 shows the level of treatment by age.

Fig 8: Initial therapy by step (Step 1, emollient; Step 2, class I or II corticosteroid or tar; Step 3, class III corticosteroid) and age (years)



It is of importance to train general practitioners to select the most appropriate potency of topical steroid. It may be advisable to have additional dermatological nursing facilities in primary care to better manage these patients. Whether this might be the practice nurse who receives some training in the management of these patients or whether we should be encouraging our trained dermatological nurses to spend more time in the community is a matter of debate. The training of more primary care nurses to manage eczema has obvious resource implications for both primary and secondary care. The numbers of trained dermatological nurses in secondary care are limited and to relocate these trained individuals will undoubtedly impact on the service we can deliver in secondary care. We must be assured that nurse-led services impact on measures like DLQI, quality of life and referral rates before advocating the wider introduction of nurse specialists ⁽⁴³⁾. A study by Smoker (1999) ⁽⁴⁴⁾ identified that 58% of primary care nurses saw between one and five people per week with skin problems, while 21% saw six or more. These findings were confirmed by Cox and Bowman (2000) ⁽⁴⁵⁾. They received response form 69 nurses (30 practice nurses and 39 community nurses), and the mean number of patients with skin disease seen by

these respondents was 5.4 per week. Our study only recorded practice nurse consultations and these were not universally recorded in every practice. In this study the spectrum of conditions seen was largely similar in the two groups of nurse. Over half of the patients seen were adults with eczema and about half had psoriasis. Interestingly, 86% of the nurses in both groups were regularly managing patients with leg ulcers which fits with our recorded nurse consultations. A study in 2006 Ogden et al ⁽⁴⁶⁾ of 20 nurse practitioners, who saw on average a total of 96 patients per week each, found that between 10 and 20% of their consultations related to skin disease. This fits with a further report that in one practice, 25% of the nurse practitioners' workload relates to a skin problem (Platts, personal oral communication 2003). Our recorded nurse consultation rate was considerably lower than these reported series probably due to under recording of dermatological patients which is why these consultations were not included in the primary care analysis. There have been a few UK studies considering the effectiveness of primary care generalist nursing interventions for skin disease. The studies have to be interpreted with caution as many are questionnaire studies using convenience samples and lacking control groups. The experience of the nurses involved in the interventions is not always made clear. Therefore, it is not always possible to generalise the results. There is one study which makes clear the experience of the nurse involved in the intervention. Kernick and colleagues published a study in 2000 that considered the impact of a dermatology-trained practice nurse on the quality of life of primary care patients with eczema and psoriasis ⁽⁴⁷⁾. The identified practice nurse received 87 hours of training in dermatology, including teaching in outpatient and inpatient settings, direct supervised tuition and background reading. The outcome of the nursing intervention (consultation in a general practitioner surgery) for a group of 109 patients with psoriasis and eczema was then compared with a control group that had no intervention. There was some limited improvement in outcome measures in the intervention group compared with the control group but this did not reach statistical significance.

A study by Chinn et al ⁽⁴⁸⁾ considered the benefit of a single 30 minute consultation by a "dermatology trained nurse in primary care" on the quality of life of 235

children with atopic eczema. There was marginal improvement in the quality of life of the children and benefit to the family at four weeks. The study authors drew attention to some limitations such as lack of power and the fact that the quality of life tools might not have been appropriate for the milder cases of eczema seen in primary care settings. Another small study in 1997 considered the development of a practice nurse-led clinic for children with eczema ⁽⁴⁹⁾. The author decided to review the experience of service users to evaluate the service. Thirty patients were sent questionnaires of whom ten responded, so the sample size was small. Responses were positive overall, with most parents believing that their understanding of their child's condition and also their child's eczema had improved.

With the other common conditions, e.g. acne and psoriasis, again there were recurring issues. Similar to patients with eczema, patients with psoriasis may benefit from a specialised nurse in primary care to better educate them about the management of their disease. A UK study concluded that dissemination of guidelines on the management of psoriasis in primary care can significantly enhance the appropriateness of referral of patients to secondary care ⁽⁵⁰⁾. A further UK study examined 789,300 primary care patient records with psoriasis and suggested that most patients with psoriasis were managed in primary care on topical agents even though there were signs from the clinical records that their psoriasis was not optimally managed ⁽⁵¹⁾. This highlights the importance of educating general practitioners in the management of psoriasis. Acne patients also represent a significant burden for general practitioners and a significant proportion of these patients consult frequently ⁽⁵²⁾. On occasions it is also evident that the opinion on the suitability of an acne patient for referral may differ between the dermatologist and the general practitioner ⁽⁵³⁾. The finding that many frequent attendees management is sub-optimal also highlights the fact that we need to concentrate our education programmes on the diagnosis and management of common dermatological conditions.

Most surgeries had access to liquid nitrogen and were holding a fortnightly list for treatment of lesions. Some surgeries were also operating a weekly minor operation

list where benign lesions were being removed, for example epidermoid cysts and benign naevi. It is difficult to ascertain whether or not all of these procedures were clinically necessary, as one cannot ascertain from the notes the degree of functional or psychological impairment to the patient. One could argue that these benign lesions, if the diagnosis is not in question, should not be removed in primary care, which may also free up more time for the general practitioner. It is difficult to make assumptions from the small number of lesions that were removed during the primary care study but it would appear that general practitioners often find difficulty in accurately diagnosing lesions prior to excision as the pathology report often did not correlate with the GP diagnosis.

There is also the question as to whether or not secondary care could accommodate further referrals from primary care. With already overstretched departments and long waiting lists it may be necessary to find novel ways of working to increase throughput e.g. the establishment of rapid skin cancer screening clinics which enables us to see more patients in a certain time frame

Limitations of the study

The total number of consultations sampled in this study (7771) was well in excess of the minimum size of 4600 considered necessary to permit an estimation of the proportion of dermatological consultations to within +/-1% of the true value with 95% confidence. A limitation of this study was the reliance on the GPs' diagnosis in determining the diagnostic spectrum of skin disorders. Furthermore, we were unable to validate the accuracy of recording in all the general practices. Although ethical consent had been granted for this aspect of the study, the majority of practices did not allow access to the case notes of non-dermatological patients seen during the study period. In those practices where validation was possible (E2, E7 and EL1); under-recording of up to 10% was noted in two, highlighting the difficulty in obtaining precise data. Of interest, practice EL1, which under-recorded by 8%, is one of 70 spotter practices in Scotland responsible for providing data for Continuous Morbidity Recording. In recent years, public health research has been undoubtedly influenced by concern about the ethics and legality of using identifiable data from

patient records. Patient privacy may conflict with the advancement of knowledge through data sharing. The data contained in primary care records are uniquely comprehensive. Stone et al ⁽⁵⁴⁾ looked at five general practices in Leicestershire. Twenty patients and 15 health care professionals and managers were interviewed. Patients had limited knowledge of the type of information held in their general practice records and the ways in which these data are shared, but appeared ready to form preliminary views on issues such as data sharing for audit and disease registration. There was no suggestion that concern about data sharing for research adversely affects patient trust or leads patients to withhold relevant information from health care professionals in primary care. Interviews carried out with staff suggested a lack of clear practice policies regarding data sharing. General practices may need to develop policies on data sharing, bring these to the attention of their patient population and improve patient awareness about the nature of the data contained in their records. Researchers should ensure that patients are adequately informed about the nature of data contained in patient records when seeking consent for data extraction. Patient consent to access their medical records should not be taken for granted. Schers et al ⁽⁵⁵⁾ looked at 873 patients from 35 general practices dispersed throughout the Netherlands. 20 % of the patients stated that the on-call GP should not have access to their entire medical record and 44% did not support full access for the practice nurse. Patient consent to the on-call GP being allowed to access a variety of information ranged from 62% for life events to 93% for medication; and to practice nurse from 37% for home details to 82% for medication. Patients distinguished between “medically orientated information” and “lifestyle and psychosocial information”. Problems have resulted from new requirements to obtain consent from individual patients before information about them can be used in matters that previously did not require consent, for instance, the inclusion of patient information in cancer registries, the compilation of information from databases for research projects, and the identification of appropriate patients by researchers for invitation to studies. Public health research requires information about the whole population, and biases arising from incomplete data can make the results unreliable, invalid or misleading. Most of the British public ⁽²⁹⁾ considers the confidential use of personal, identifiable patient information by the National Cancer Registry for the purposes of

public health research and surveillance not to be an invasion of privacy. 72% of all respondents did not consider any of the following to be an invasion of their privacy by the National Cancer Registry: inclusion of postcode, inclusion of name and address, and the receipt of a letter inviting them to a research study on the basis of inclusion in the registry. The proportions not concerned about invasion of privacy varied significantly by country, ethnicity, socio-economic status, and housing tenure, although in all subgroups examined most respondents had no concerns. 81% said that they would support a law making cancer registration statutory. The Department of Health accepts identifiable information collected at practice level, for the direct care of patients i.e. for call and recall, provided that patients are appropriately informed and due attention is paid to confidentiality. Information gathered for the direct care of the patient is deemed to have consent through the normal activities of a patient consultation. Local clinical audit is included in this as it has a direct impact on the quality of care a patient receives. The distinction between audit and research can also sometimes be difficult ⁽⁵⁶⁾. Research and audit have many similarities. They both start with a question, both expect the answer to change or influence clinical practice, both require formal data collection on patients, and both depend on using an appropriate method and design to reach sound conclusions. The standards expected of audit in terms of design, data collection, and analysis should at least be as high as for research. It is also clear that both audit and research differ from normal clinical practice because clinical practice rarely achieves a high standard of data collection and analysis. The major bureaucratic distinction drawn between audit and research is that research investigates what should be done, whereas audit investigates whether it is being done (and if not, why not). Guidance on making the distinction between audit and research is available, but the distinction is difficult to make in actual practice. If it is accepted that all clinical practice, including research, should be undertaken ethically, then the main issue is to decide when formal ethical scrutiny might be necessary. To help decide, the following questions could be asked of any study or change in practice

- How much does this deviate from current normal (accepted, local) clinical practice?
- What is the (additional) burden imposed on patients (or others)?

- What (additional) risks are posed to the patients (or others)?
 - What benefit might accrue to the patients (or others)?
- What are the potential benefits to society (future patients)?

The answers might determine when additional, usually external, ethical scrutiny should occur. Physical risk is not the only determinant. The undisclosed retention of superfluous biopsy tissue or organs from dead people, which holds no risk for the owner, has been shown to be unacceptable to the public. Change in practice is integral to most formal studies. In audit, the change is usually in the domains of data collection and analysis, although some units advise that audit: “Never involves disturbance of patients over and above normal clinical management. There is no extra data collection and no extra interventions or clinical assessments.” Research more commonly involves manipulating interventions. Having no firm guidelines concerning the best method for or even the appropriateness of obtaining informed consent for this study was one of the major issues that affected the whole of the data gathering process.

The legal position regarding the use of all health data within the NHS has changed in England and Wales with the passing of the Health and Social Care Act 2011⁽⁵⁷⁾. The relevant sections of the Act (60 and 61) grant the Secretary of State for Health powers to determine how patient data can be used in the NHS. The Secretary of State must nevertheless comply with the requirements of the Data Protection and Human Rights Acts. Section 60 includes a process that permits application for patient data to be used without consent, under particular circumstances. In Scotland confidentiality issues have been subject to a major review through the Confidentiality and Security Advisory Group Scotland (CSAGS), an independent committee. Its final report, “Protecting Patient Confidentiality” April 2002 www.show.scot.nhs.uk/csags, recommends that patients must be informed about how information about them is used. Wherever possible, data must be anonymised and if that cannot be done to an acceptable degree, the patient has a right to object to their use. CSAGS also rejects the introduction of new legislation similar to Section 60 of the Health & Social Care Act in England & Wales. It does so on the basis that in a patient centred service the implications of any legislation, which restricts rights of individual patients, must be

taken seriously⁽⁵⁸⁾. The Scottish Executive⁽⁵⁹⁾ is now responding to work of CSAGS to develop systems that command public and patient confidence, promote good practice for clinicians and researchers, and preserve important public health and research functions.

Informed consent is an approval process in which the patient receives a full and understandable explanation of purpose, risks, benefits and rights of withdrawal of the approval. Current practice often involves using posters in a surgery about certain policies or initiatives and it is assumed that the patient agrees with them unless they explicitly withdraw their consent. This has been called implied consent. The view of the Patient Information Advisory Group (PIAG)⁽⁶⁰⁾ is that this is not adequate in terms of providing information to patients and therefore consent based on this is unlikely to be valid, legally or in terms of ethical practice.

**Chapter 3: Secondary care study;
Patients referred to dermatology
Out-patients in Nov 2005**

CHAPTER 3: SECONDARY CARE STUDY

3:1 INTRODUCTION

There are many factors, which drive hospital referrals. Donohoe et al ⁽⁶¹⁾ suggested that generalists were influenced by a combination of both medical and non-medical reasons for 76% of the referrals, by only medical reasons in 20%, and by non-medical reasons in 3%. The findings were that patient requests for referral influenced one fifth of referral decisions and this appears to echo the findings of Marton et al ⁽⁶²⁾. Differences in the rates at which general practitioners refer their patients to hospital outpatient departments are well documented ⁽⁶³⁾ Roland and Morris ⁽⁶⁴⁾ concluded that the availability of consultants influences the number of referrals made. If an outpatient service is well served by consultants this may decrease the general practitioners threshold for referral. Likewise with an undersupply of consultants general practitioners may be less likely to refer and attempt to manage the patients in primary care. Interpretations of differences in referral rates need to take into account variations in the supply of specialists as a factor that may influence the referral behaviour of general practitioners. There is also evidence that hospital waiting lists in the UK are resistant to shortening because reductions in length generate increases in referrals ⁽⁶⁵⁾ Chen (USA) ⁽⁶⁶⁾ used a computerized referral tracking system to analyse all dermatology referrals retrospectively from his general practice between Jan-Mar 1999. Referral rates were calculated for individual providers and reasons for referral were examined. Great variation was found in dermatology referral rates among junior general practitioners and partners. Individual provider characteristics are also predictors of referral rate variation. Provider confidences, experience, years in training, and degree of specialization are all possible factors that may explain variability in the referral process. A high referral rate does not imply a high level of inappropriate referral ⁽⁶⁷⁾. It has been suggested that practitioners with particular areas of interest may have higher referral rates in those specialties in which they have skills. A possible explanation for this may be differences in case mix, in those practitioners with particular knowledge may be referred cases by their partners, or patients may learn about a doctor's special interest

and make a conscious decision about whom to consult for a particular problem. There is evidence to suggest that there may be a group of patients who would benefit from specialist advice, even though that advice has not been sought ⁽⁶⁸⁾. Twenty-two patients with skin problems were identified on the basis that the general practitioner was satisfied with their management and had no intention of referring them to hospital. These patients were reviewed by one of two dermatologists who made treatment recommendations in 14 cases, and these suggestions were taken up by 11 patients. Six patients reported definite subjective improvement in their skin condition six weeks later. The general practitioners found the consultation valuable in 17 cases. Although these patients might have improved without the dermatologist intervention it highlights the possible unmet need in the community. Restriction on hospital referrals could therefore be detrimental to patient care. Sullivan et al (UK) ⁽⁶⁹⁾ followed a cohort of 392 patients referred to six outpatient clinics, which included dermatology. There was a predominance of women attendees except at the vascular clinic. A high percentage of new referrals to each specialty had been referred for the same problem on a previous occasion. There was evidence to support a higher discharge rate from consultant staff than junior staff. Only diagnosis and grade of doctor at the second visit were significantly associated with discharge at the second visit. It has also been suggested that approx 26% of referrals to dermatology could be considered as unnecessary as deemed by a senior house officer with three months practical experience in dermatology ⁽⁷⁰⁾.

Several studies have endeavoured to record referrals specifically to dermatology outpatients. Basarab et al ⁽⁷¹⁾ reviewed 3678 referrals from general practitioners to dermatology outpatient clinics and found that 26% of patients were referred for diagnosis or investigation, 12% for advice only, 60% for treatment or management, and 2% for a second opinion or reassurance. Williams responded to this study stating that referrals for hospital treatment were in his opinion appropriate ⁽²¹⁾. Patient pressure can often be a factor in driving referral to secondary care dermatology departments ⁽⁷²⁾. More recently a study of out-patient case-mix in all Welsh trusts recorded all the referrals they received over a period of one week. A total of 2142 patients were seen. Of new patients, 21% had skin cancer. Seventeen per cent of skin

cancers had no diagnosis suggested by the general practitioner. 10% of basal cell carcinomas, 33% of squamous cell carcinomas and 17% of malignant melanomas were wrongly diagnosed. In all 26% of new patients had benign lesions, and this group caused the greatest diagnostic difficulty for GPs. Seventy-one per cent of these patients were diagnosed, reassured and discharged at the first visit without the need for biopsy or surgery. Thirty-seven per cent of new patients required surgery, of which 21% required multi-disciplinary involvement. The new to follow-up ratio varied considerably according to the diagnosis, the mean ratio being 1:0.2 for benign lesions through to 1:5.5 for psoriasis. This highlights the difficulties in interpreting a consultant new to review ratio ⁽⁷³⁾. It would appear that referral of children to dermatology is surprisingly low in comparison with other conditions that children are referred with ⁽⁷⁴⁾. It is therefore not surprising that there may be substantial deficiencies in some important areas of health services research in dermatology. To provide efficient and qualified dermatological health care, more research projects on the needs, demands and quality of health care are needed ⁽⁷⁵⁾. There are many reports on correspondence between family physicians and hospitals. Dupont ⁽⁷⁶⁾ assessed 600 referral letters from family physicians to a dermatology outpatient clinic. He compared the details contained in them with the information later obtained in the clinic under the following headings: details of treatment given for the skin disorder provided by the family doctor; whether the patient was taking medication for disorders other than the skin disease; and whether the family physician sent a personally devised standard letter. Fewer than 50% gave details about treatment attempted. This omission was considered serious as planning of management may hinge on what has already failed.

3:2 AIMS

The Secondary Care Study aims were

- (1) To document the dermatological workload in secondary care both hospital-based and private practice and compare the changes over a 25 year period
- (2) To examine the multiple reasons for referral of patients to hospital for a dermatological opinion

- (3) To record the diagnostic spectrum of dermatological conditions referred to secondary care and to compare the diagnostic profile with that presenting in primary care
- (4) To ascertain the accuracy of the dermatological diagnosis offered by the general practitioners

3:3 METHODS

All consultant dermatologists, dermatology trainees and dermatology nurse practitioners conducting outpatients clinics in National Health Service hospitals and private practice in Edinburgh and Lothian, the Scottish Borders and Fife (total population of 1205100) recorded details of all their consultations during the month of November 2005. This included all ward referrals and other emergency referrals. Attendances for phototherapy and dressings (delivered by nurses), as well as surgical lists, were excluded.

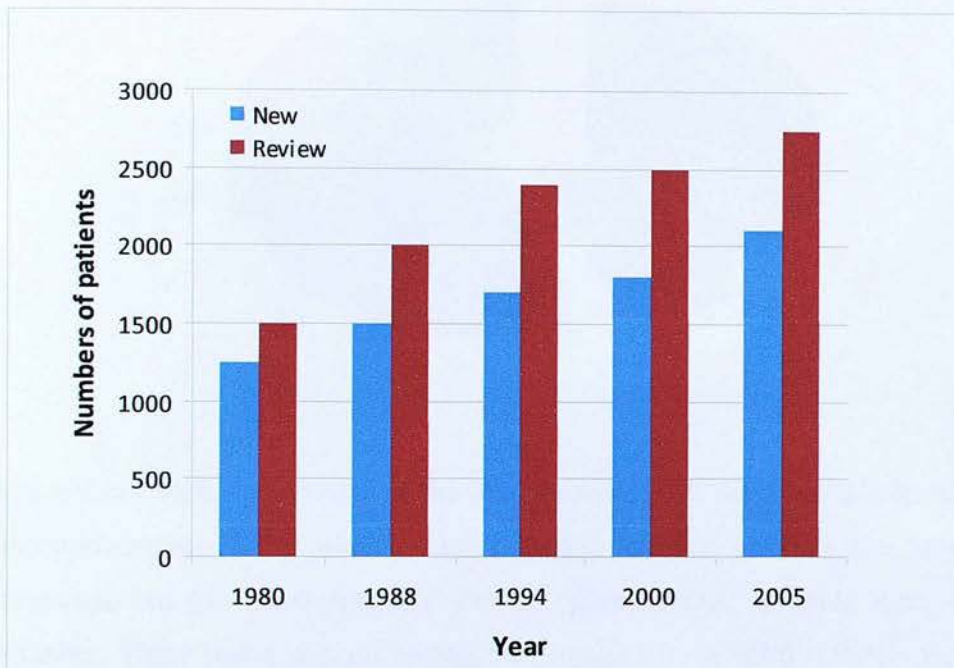
Data on patient demographics, new or review status, and reason for and source of referral (primary or secondary care) were recorded on a standardized form, one for each patient seen (Appendix 10 p148). The diagnosis offered by the referring doctor, the diagnosis made by the dermatologist after pathology, when appropriate, the treatment and investigations instigated and subsequent patient disposal were also recorded. All diagnoses were coded into one of 27 categories by a team of five dermatologists prior to scanning all datasheets into an Access database for analysis (Appendix 11 p149). This coding system was identical to that used in the previous four hospital studies enabling us to compare our data directly.

Comparisons were made with data collected in four similar studies conducted during the month of November in 1980, 1988, 1994 and 2000 in the same region of south-east Scotland, the population of which has increased by 34 000 over 25 years. We were able to draw comparisons between the diagnostic spectrums in secondary care with that recorded in the primary care arm of the study.

3:4 RESULTS

During the 1-month study, attendances were recorded for 2118 new and 2796 review patients. There had been a steady increase in numbers of both new and review patients between 1980 and 2005 equating to a new consultation rate of 21 per 1000 population in 2005 compared with 12.6 per 1000 in 1980, with secondary care referrals (ward referrals) increasing from 61 in Nov 1980 to 230 in Nov 2005 (Fig 9).

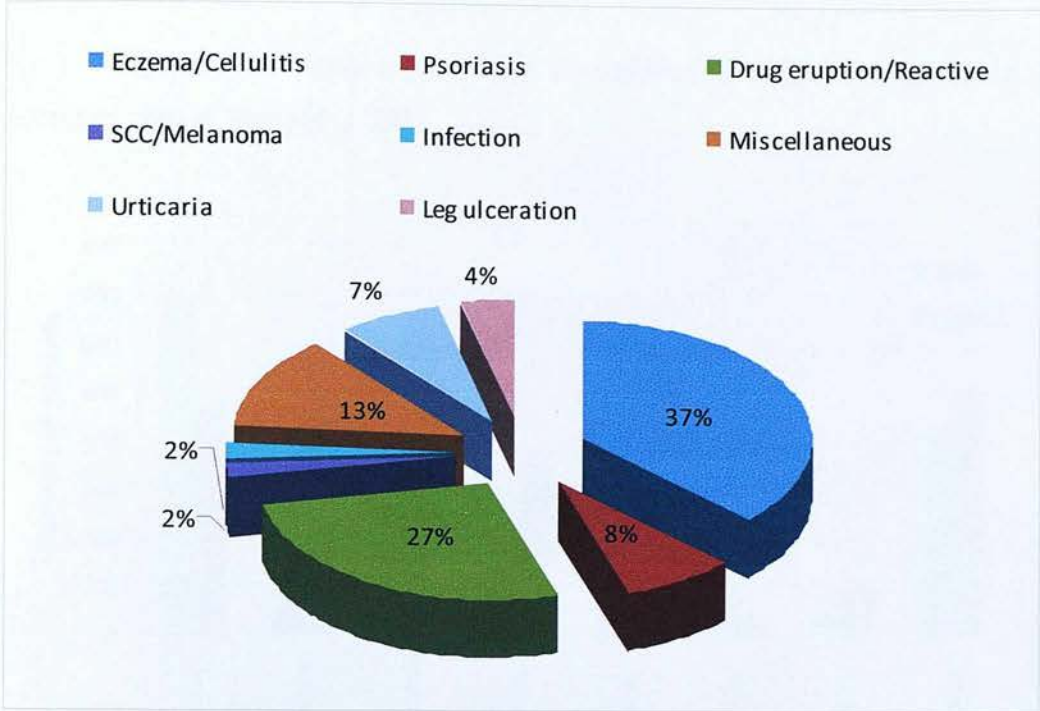
Fig 9: Total numbers of new and review dermatological patients seen during Nov 1980-2005



Clinical data were available on 96% of new patients (n=2040) and 99% of review patients (n=2770). The source of referral was recorded for 90% of new patients: 89% came from primary care and 11% from secondary care. The secondary care referrals were ward referrals requested by other secondary care physicians. This averaged 8 ward referrals per day in the month of November (n=230). Some of these patients would have been offered an appointment in the general clinics but more often than not this required the registrar to visit the main acute hospital to review these patients

on the wards. We have been able to look specifically at the diagnostic spectrum of these ward referrals which is displayed below Fig 10.

Fig 10: Dermatological diagnosis of ward referrals

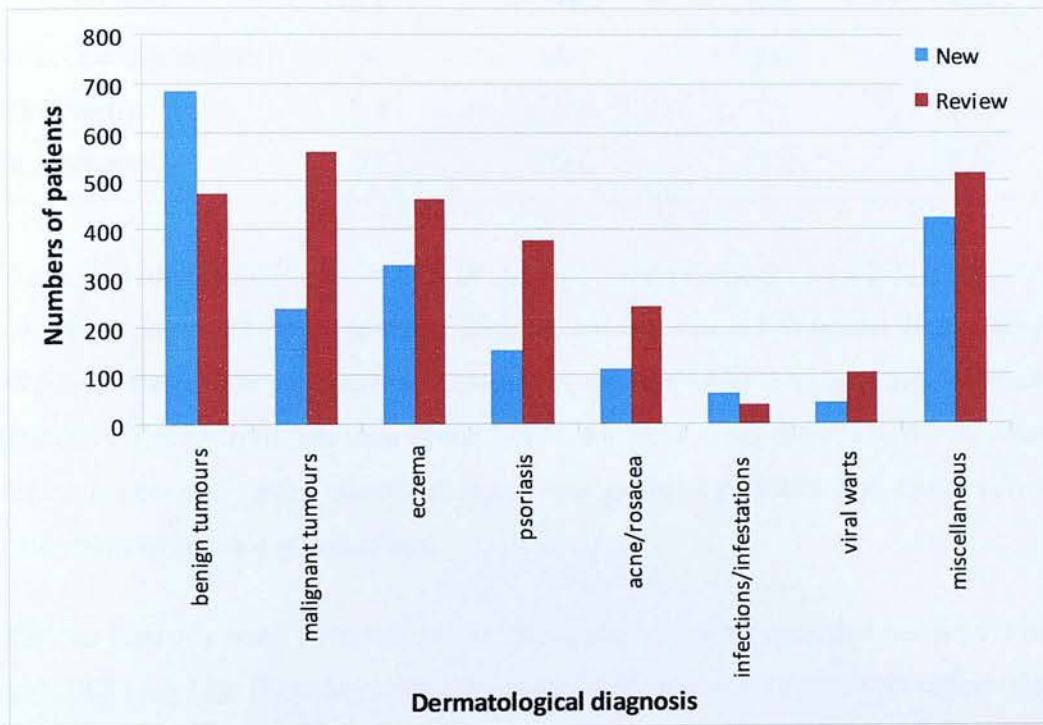


We did not look specifically at the appropriateness of these ward referrals or the appropriateness of the primary care referrals. We did examine the accuracy of diagnosis but the ward referrals and the primary care referrals were analysed together. There was a general feeling that some of these ward referrals were made because the patient was an inpatient and it was convenient to do so and had the patient presented in primary care with the same dermatological condition they may not have been referred. Although not specifically analysed there was also a feeling that the accuracy of diagnosis of these ward referrals was slightly poorer than the accuracy of the GP diagnosis.

The reasons for referral were recorded for 85% of new patients and were: diagnosis required (57%), hospital management requested (38%), patient request (4.4%) and uncertain (0.6%) of new patients. General practitioners seemed to have more difficulty in accurately diagnosing lesions 75% of the diagnosis requests were for

lesions whereas hospital management requests seemed to be more frequent for chronic dermatological conditions (83% of the hospital management requests) e.g. eczema, psoriasis, acne and urticaria. The graph below details the diagnosis of the new and review patients seen in secondary care in Nov 2005 (Fig 11).

Fig 11: Numbers of patients and their dermatological diagnosis presenting to secondary care in November 2005



Most patients 93.1% were seen in NHS clinics and the remainder in private practice (Table 9). Actual numbers of new patients seen in private practice had risen by 134% since 1980.

Table 9: Diagnostic spectrum of N:R patients in NHS and private practice in Nov 2005

	New NHS %	New private %	Review NHS %	Review private %
Benign tumours	33.4	24	17.1	36.9
Malignant tumours	11.6	5.5	20.2	13.6
Eczema	16	16	16.7	4.8
Psoriasis	7.4	4.9	13.5	4.8
Acne/rosacea	5.5	18	8.7	10.7
Infection/Infestation	4	4.1	1.4	1
Viral warts	2.1	4.9	3.7	10.7
Miscellaneous	21	22.2	18.7	17.5

Women predominated both for new (F: M 1.4:1) and review (F: M 1.2:1) cases, with all ages represented. The age range for new patients was 0-106 (mean 48.6, median 48.6) and for review patients 0-102 (mean 53, median 55.1). The case mix in private practice differed from that seen in the NHS with more acne, rosacea and viral warts for both new and return cases but fewer new cases of psoriasis and fewer review cases both of eczema and psoriasis.

Various changes were observed in the diagnostic spectrum recorded between 1980 and 2005 (Fig 12). There has been a dramatic increase in all types of skin cancer over the past 25 years. Basal cell carcinoma has seen the most dramatic rise (Fig 13).

Fig 12: Diagnostic profile of new patients per year presenting with various dermatological conditions between the years 1980-2005

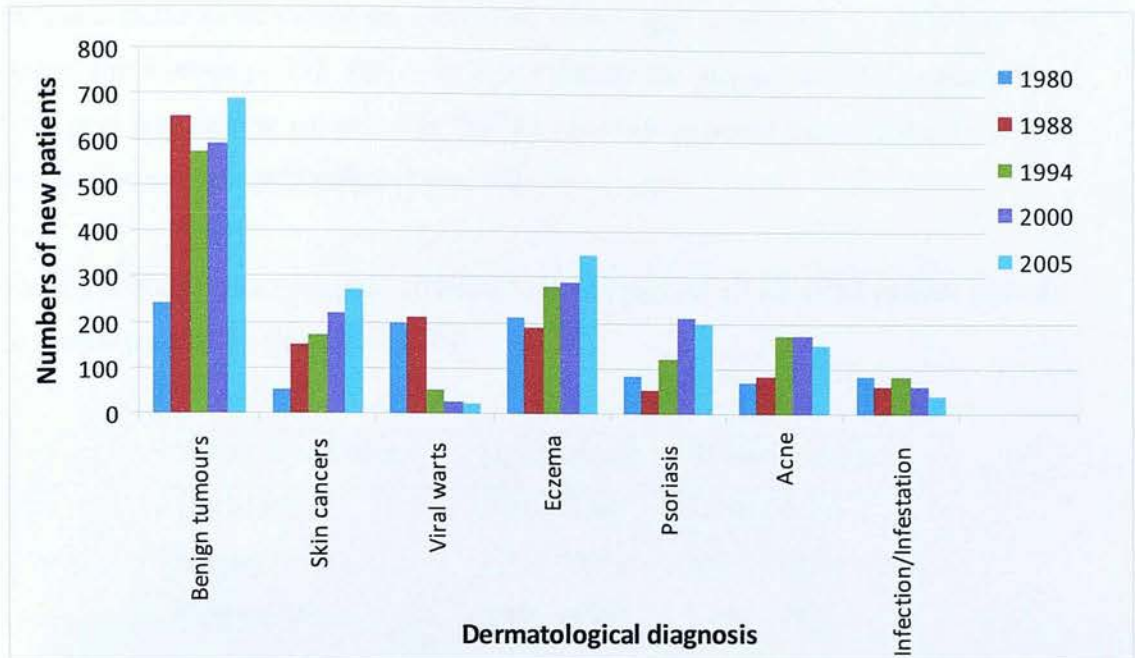
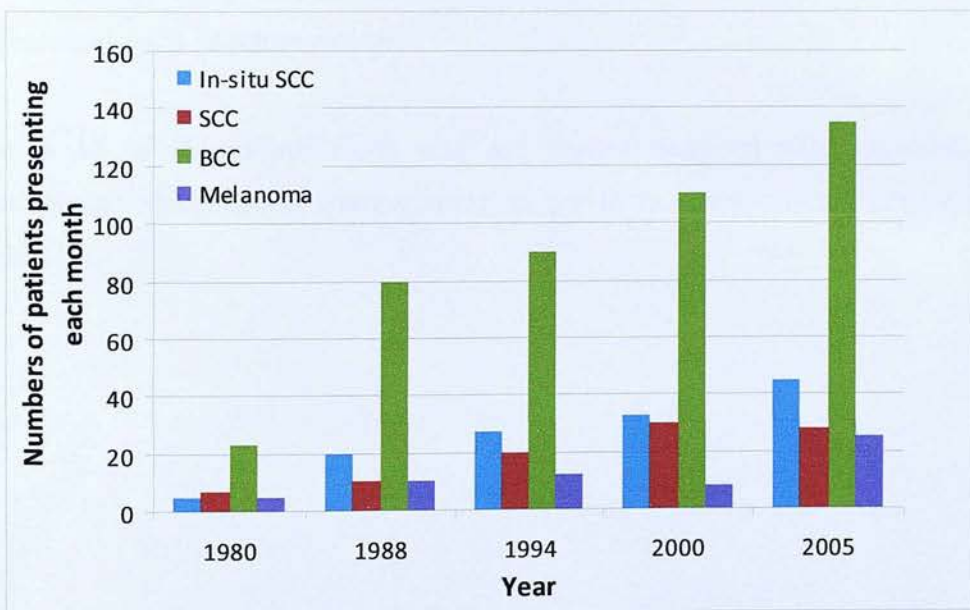


Fig 13: Numbers of patients per month presenting with pre-malignant lesions and skin cancers between the years 1980-2005



As every department organized surgical procedures differently i.e. all on a same day basis, partial booking or full booking systems, we looked only at the work generated by those patients attending the outpatient clinics and emergency or ward referrals during the 4-week period. The table below shows the surgical activity generated by both new and review patients, we did not however examine the complexity of the surgical procedures performed (Table 10).

Table 10: Numbers of surgical procedures performed on all new and review patients in secondary care in November 2005

Surgical procedure	New patients	Review patients
Excision	10% (198)	3.7% (102)
Biopsy	13% (261)	3% (82)
Curette /shave	7.7% (156)	3.4% (93)
Cryotherapy	12% (240)	17.5% (484)

This contrasts with the previous studies in which there was much less surgical activity. In 1983 surgical procedures were only performed in total in 13.4% of new patients and 1.4% of return patients.

One in 10 of all patients (both new and review) required either dressings or phototherapy. Patch testing was requested for one in three new patients with eczema (Table 11).

Table 11: Outpatient treatments and investigations on all patients both new and review in November 2005

	New patients	Review patients
Dressings	7% (148)	7% (196)
Phototherapy	3.5% (71)	4.3% (115)
Blood tests	6.7% (137)	9% (248)
Patch testing	5.7% (117)	3.8% (106)

Fewer than 50% of new patients were brought back for review (Table 12). The reasons for review of new patients were disease monitoring, including malignant disease for 42.5% ongoing treatment or monitoring of drug therapy for 30.5%, diagnostic procedure for 20%, with no reason recorded for 7%.

Table 12: Disposal of patients in November 2005

	New patients (n= 2040)	Review patients (n-2770)
Discharge	45.3%	25.6%
Review:	45.2%	70.3%
Referral elsewhere	4.6%	2.8%
Ward waiting list /admission	0.5%	0.6%
Not recorded	4.4%	0.7%

We had recorded the diagnosis made by the referring doctor and this was compared with the actual diagnosis made in secondary care. Dermatitis other than atopic eczema appeared to pose the greatest difficulty with 30% of patients being diagnosed incorrectly and a further 20% not being assigned a diagnosis (Table 13).

Of benign lesions, seborrhoeic keratoses were diagnosed correctly in only 28% of cases with a further 20% having no diagnosis offered (Table 14). Melanocytic naevi and warts were identified correctly in around 70% of cases, respectively. Of

malignant lesions, malignant melanoma and basal cell carcinoma were diagnosed correctly in around 70% of cases, whereas *in situ* and invasive squamous cell carcinoma posed a greater diagnostic challenge, being correctly diagnosed in only 37% and 52% of cases respectively.

Table 13: Accuracy of GPs in diagnosing rashes

Rashes	Correct diagnosis	%	No diagnosis offered
Acne	85/90	94%	3
Atopic dermatitis	58/60	96.6%	2
Dermatitis	122/172	71%	43
Psoriasis	112/129	87%	11
Venous leg ulcers	19/20	95%	1
Urticaria	42/50	84%	10

Table 14 : Accuracy of GPs in diagnosing lesions

Lesions	Correct diagnosis	%	No diagnosis offered
Warts	27/37	73%	6
Seborrhoeic keratoses	35/124	28%	34
Pigmented naevi	159/192	83%	26
Benign tumours	77/14	55%	22
SCC	11/21	52%	1
BCC	77/106	72%	14
<i>In-situ</i> SCC	12/32	37%	7
Actinic keratoses	35/86	46%	27
Melanoma	16/23	70%	0

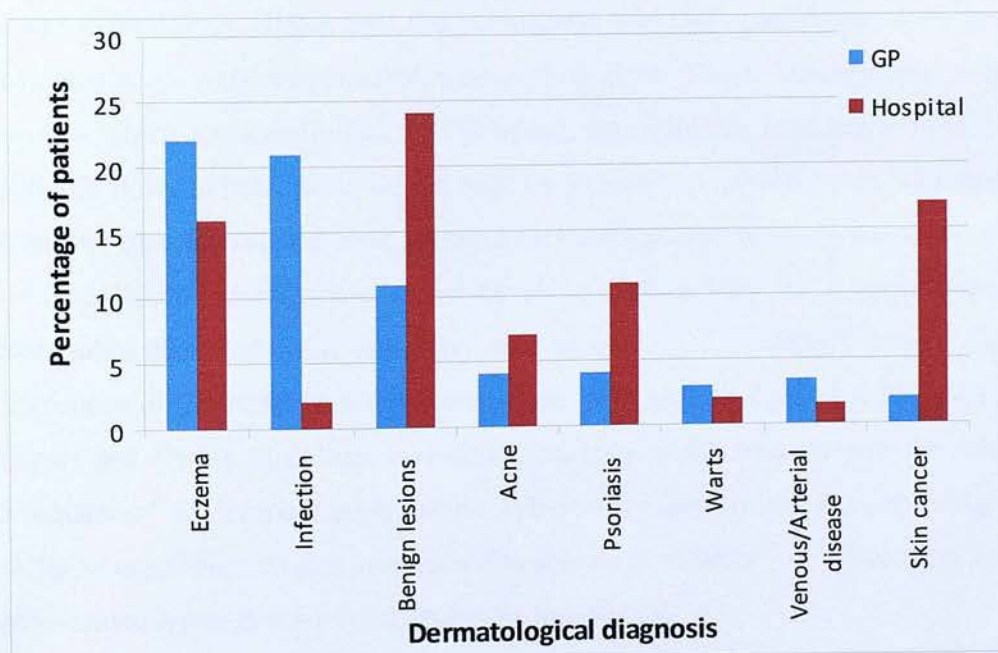
The proportion of new patients seen only by a consultant was 53%, a little lower than in previous studies (Table 15)

Table 15: Distribution of NHS dermatology workload

	New (n=1885)	Review (n= 2520)
Consultants	53.0%	43.5%
NCCG	14.0%	15.7%
Hospital Practitioners	11.1%	9.7%
Specialist registrars	18.6%	19.8%
Nurses	3.3%	11.3%

The profile of dermatological diagnoses recorded in secondary care was compared with the primary care data. In primary care the top three diagnoses were eczema (22.5%), infection and infestation (20.3%) and benign tumours (11.4%). In secondary care the top three diagnoses were benign tumours (23.8%), malignant tumours (16.4%) and eczema (16.3%) (Fig14).

Fig 14: A comparison of the percentage of dermatological conditions recorded in primary care compared to secondary care



3:5 DISCUSSION

Dermatology clinics rank amongst the busiest of the outpatient specialties. With the current political climate of reducing waiting lists, dermatology is one of the specialities that attract much attention from hospital managers and local politicians. In order to make effective plans for provision of dermatology services, an accurate picture is needed of the rate and type of referrals to secondary care and the work that these referrals generate. Important data should include changing trends in referrals, the reasons for requesting a specialist opinion and whether the demand for both primary care and secondary care can be influenced by education. We are aware nationally of an increasing referral rate from primary care ⁽⁷⁷⁾. The reasons for this are not entirely clear. There is less opportunity and time with the new training programmes for general practitioners to experience dermatology ⁽¹²⁻¹⁴⁾. There is increasing public anxiety regarding skin cancer ⁽⁷⁾. We are also experiencing increasing pressure from the general public to treat cosmetic lesions ⁽⁷⁸⁻⁷⁹⁾. The new GP contract offers no incentive to general practitioners to manage dermatological patients ⁽¹⁶⁾. Government targets regarding waiting times have further stretched the service. Delivering these targets does not automatically imply delivering good quality of care. There is an impetus to deliver “care closer to home” ⁽⁸⁰⁾ by moving some dermatology clinics into the community and also recently we have had the emergence of new independent treatment centres. These independent treatment centres which are usually run by GPSIs are attempting to treat more dermatology patients closer to home to avoid the need for referral to secondary care. The intention however that the referral rates to secondary care would decrease have not always been realised and on some occasions these centres may be a more expensive alternative than traditional secondary care models ^(77, 81-85). There has also been an attempt to utilise staff other than consultants, for example, specialist dermatological nurses and GPSIs to deliver dermatological care which may be seen as “cheaper alternatives” to dermatologists. These individuals often do not have the diagnostic skills or experience to best manage dermatological patients ⁽⁸⁶⁻⁸⁹⁾. There are clinical governance issues that we must always be mindful of.

This study shows our referral rates have risen steadily over the last 25 years, now equating to 21 referrals per 1000 population in 2005 compared with 12.6 per 1000 in 1980. Referrals from other hospital specialities have almost quadrupled since 1980 to the current figure of 11% of new referrals. Some of this may be as a consequence of the emergence of new groups of patients such as organ transplant patients, HIV patients and those receiving intensive chemotherapy for haematological or other malignancies who are at risk of both short-term and long-term complications of their immunosuppressed status. The quality of these ward referrals varies significantly and there is often little attempt to initiate basic treatment for simple conditions. Alongside educating general practitioners we should also focus our attempts at increasing the dermatological knowledge of medical staff in secondary care. Further threats to the delivery of dermatological care are likely to surface in the next 5-10 years. Loss of dermatology beds means that very few apart from the most urgent or difficult cases, or those with medical or social co-morbidities, are admitted for inpatient treatment ⁽⁹⁰⁻⁹¹⁾. Many patients who would previously been treated as inpatients, now attend on a regular outpatient basis for phototherapy, courses of cytotoxic drugs or biological agents. Closing of dedicated dermatology beds has obvious implications for not only patients but also the specialised dermatological nurses that were previously managing these patients. An audit of the admissions to dermatology beds in Greater Manchester 2002 demonstrated that 87% patients benefited from admission and the dermatology life quality index improved. This study demonstrated the fact that inpatient treatment is effective and improves patient's quality of life ⁽⁹¹⁾. New treatments, for example, the biologics for psoriasis, have lead to a larger cohort of patients that necessitate regular hospital follow up. There is also often pressure to reduce the number of review cases we are seeing in clinic and see more new patients. The emergence of independent intermediary services may mean that the spectrum of dermatological patients we see in clinic may be a little more complicated and more time-consuming than before.

The diagnostic spectra of patients who have been referred have demonstrated significant changes over 25 years (Fig 12). The public education campaigns of the 1980s resulted in a rapid rise in referral of patients with benign tumours for exclusion

of malignancy. The actual figures for new patients with skin cancers show an increase of nearly threefold, and overall attendances for benign and malignant skin tumours have increased six-fold since 1980. This will undoubtedly have an effect on the volume of surgical procedures undertaken. General practitioners have greatest difficulty in distinguishing benign from malignant lesions, with seborrhoeic keratosis, in situ and invasive squamous cell carcinoma proving the most challenging, which may lead to difficulties in grading and prioritising referral letters (Table 14).

A study by Sowden et al ⁽⁹²⁾ of 292 seborrhoeic keratoses removed by general practitioners, dermatologists and surgeons revealed that the correct preoperative diagnosis was made in 5 of 44 (11%) lesions removed by surgeons, 67 of 162 (41%) removed by general practitioners and 70 of 86 (81%) removed by dermatologists. Curettage was not performed by any surgeon who all favoured excision; one patient required a general anaesthetic. In view of the large numbers of seborrhoeic keratoses it is important that non-dermatologists receive adequate training in the recognition and management of these lesions.

A variety of studies have demonstrated either that non-dermatologists perform poorly, or that their performance is inferior to dermatologists with respect to the evaluation and treatment of skin diseases. Pariser and Pariser ⁽⁹³⁾ prospectively studied errors made by primary care physicians over a 20-month period, and found 319 errors made in 260 patients. Ramsay and Fox ⁽⁹⁴⁾ found that the mean score on examination of 20 colour slides representing the most common dermatoses was 54% for primary care physicians compared with 96% for dermatologists. Solomon et al ⁽⁹⁵⁾ conducted a similar study with family practice residents who obtained a mean score of 48% on a test of 20 colour slides, while dermatology residents obtained a mean score of 93%. Federman et al ⁽⁹⁶⁾ found that medical residents correctly diagnosed common cutaneous disorders only 43% of the time and that attending internal physicians diagnosed only 52% of cases correctly. Cassileth et al ⁽⁹⁷⁾ studied accuracy rates in the diagnosis of malignant melanoma. They found that only 38% of the non-dermatologists could correctly identify four or more of the 6 cases of

melanoma presented and that 58% were unable to diagnose dysplastic naevi. Gerbert et al⁽⁹⁸⁾ examined the ability of primary care physicians to triage lesions suspicious for cancer. As with other studies, they found that dermatologist scores on a picture test were almost double those of the primary care residents. They also reported that the performance of primary care residents was positively associated with previous experience in dermatology. Similar results were obtained in a Spanish study⁽⁹⁹⁾ where the overall diagnostic agreement between primary care physicians and dermatologists was 65.52%. Primary care physicians were found to over diagnose disease caused by papillomavirus and the diagnostic sensitivity was very low for diseases such as basal cell carcinoma and seborrhoeic keratosis.

Morrison et al⁽¹⁰⁰⁾ compared the diagnoses of general practitioners and dermatologists over a selected period in patients with a possible diagnosis of skin cancer. Four hundred and ninety-three patients were seen by one of the two dermatologists over a year at a rapid referral clinic for patients suspected by their family practitioners of having unstable or possibly malignant skin lesions. The diagnoses of the family practitioners agreed with the diagnoses of the dermatologists on patients diagnosed clinically in 54% of cases. Histological proven skin cancers were diagnosed accurately in only 22% of cases by family practitioners, compared to 87% of cases by dermatologists. Specific areas of diagnostic difficulty for family practitioners include benign pigmented actinic keratosis and seborrhoeic keratoses. While GPSIs may be better at diagnosing and managing skin cancers than the average GP they are still not as proficient as dermatologists⁽¹⁰¹⁾. Moreover the performance of general practitioners' and other hospital specialists in removing basal cell carcinomas compares unfavourably with dermatologists. GPs perform significantly less well than dermatologists when diagnosing and excising BCCs, but appear equal in diagnostic skill and better at excision than other hospital specialists. Non-specialized GPs appear to perform as well as GPs with a special interest in adequately excising BCCs⁽¹⁰²⁾. A further study⁽¹⁰³⁾ suggests that GPs were less accurate in their clinical diagnosis with 42.8% of their request forms including the eventual histological diagnosis, compared with 69.5% for dermatologists. Excision biopsies performed by GPs had the highest rate of margin involvement by tumour of

any specialities. Several studies have shown that dermatologists are more accurate in diagnosing pigmented lesions than GPs ^(94, 97, 104-105). Experience suggests that public awareness has increased and general practitioner threshold for referral has fallen but there has been no reduction in the thickness of those melanomas diagnosed. The number of new patients seen each year has increased by over 230%, although the proportion of patients with melanoma detected has declined ⁽¹⁰⁶⁾.

Recent restrictions on the removal of benign lesions may contribute to future change but it is debatable whether these will have a significant impact on our referral rates ⁽¹⁰⁷⁻¹⁰⁸⁾. This may lead to more minor surgery being performed in primary care. O’Cathain et al ⁽³⁶⁾ studied the cost-effectiveness of GPs undertaking minor surgery in their practices in a prospective comparison of patients having minor surgery undertaken in 5 general practices over a 12 week period in 1989, and in the departments of dermatology and general surgery in a hospital setting over a contemporaneous 8 week period. There were no differences between the two groups in the reported rates of wound infection or other complications and only one general practice patient was subsequently transferred to hospital for specialist treatment. General practitioners sent a smaller proportion of specimens to a histopathology laboratory than hospital doctors (61% versus 90%), incorrectly diagnosed a larger proportion of malignant conditions as benign (10% versus 1%) and inadequately excised 5% of lesions. Performing minor surgery in general practice would seem cost-effective compared with a hospital setting. However, the risk of a general practitioner inadequately excising a malignancy and not sending it to a histopathology laboratory must be addressed and the conclusion regarding cost-effectiveness only applies where general practice is a substitute for the hospital setting and not an additional activity.

More recently the MiSTIC trial ⁽¹⁰⁹⁾ concluded that the quality of minor surgery carried out in general practice is not as high as that carried out in hospital, using surgical quality as the primary outcome, although the difference was not large. There were clear deficiencies in GPs ability to recognise malignant lesions, and there may be differences in completeness of excision when compared with hospital doctors. This study suggested that a hospital based service is more cost effective. It was

concluded that further economic modelling work is required to look at the potential costs of training sufficient numbers of GPs and GPs with special interests to meet the demand for minor surgery safely in primary care, and of the alternative of transferring minor surgery large-scale to the hospital sector. There are several studies that consider the effectiveness of specialist nurses, as reviewed by Courtenay and Carey ⁽¹¹⁰⁻¹¹¹⁾. Various studies in patients with psoriasis and eczema describe improvements in quality of life ⁽¹¹²⁻¹¹⁴⁾ more effective use of treatments ⁽¹¹⁵⁾ and a reduction in the number of follow-up patients seen by the dermatologist ⁽¹¹⁶⁾ as a result of interventions by dermatology specialist nurses. There are also reports of specialist nurses providing outreach community dermatology clinics ⁽¹¹⁷⁻¹¹⁹⁾ with positive patient and general practitioner feedback. In the larger study from Nottingham, a total of 1699 patients were seen in 18 months, of whom 28% required referral to the specialist centre ⁽¹¹⁸⁾.

The positive impact of skin surgery by nurses on waiting times for surgery is documented by Godsell ⁽¹²⁰⁾. The introduction of nurse surgery services led to a reduction of eight weeks in the time from presentation to excision of the skin tumour in many patients. Satisfaction and patient outcomes were good in a study in 2004 that compared nurse and doctor surgery ⁽¹²¹⁾. The authors of the latter study concluded that the use of the nurse surgeons did not compromise quality of care or patient satisfaction.

Private practice dermatology appears a little different to NHS dermatology (Table 9). It is evident that the management of the chronic inflammatory disorders, psoriasis and eczema, is predominantly in the NHS. Most dermatologists will only do one or two sessions per week in private practice and with the more severe inflammatory skin conditions it is perhaps easier to deal with these as NHS patients where access when their skin condition is acute is perhaps easier. It is also easier to monitor patients more closely on second line agents in the secondary care setting. Allied to this the costs of treating patients with severe inflammatory skin conditions who may be on chronic expensive immunosuppressive treatments may prove difficult in a private health care setting. A lot of private clinics will not have access to

dermatological trained nursing staff or dedicated inpatient dermatology beds which makes treating these patients in the private sector difficult. It also appears in private practice that many more patients with viral warts or other benign lesions are being reviewed which is at odds with the NHS review cohort. With long NHS waiting lists and the pressure to keep new:review ratios low it may be easier to review lesions in private practice, added with the financial incentive for a review patient. Long NHS waiting times for patients with acne or rosacea may account for the large numbers of such patients seen privately. It is difficult to envisage reducing the ever-increasing referral rate when our results show that 57% of patients were referred due to diagnostic uncertainty and a further 38% for hospital-based treatments.

In conclusion, there is no doubt that the number of new consultations has risen from 12.6 per 1000 in 1980 to 21 per 1000 in 2005. Referrals from secondary care have almost quadrupled since 1980 and now account for 11% of new referrals. Fifty-seven per cent of referrals were for a diagnostic opinion and 38% for management advice or hospital-based treatments. The total number of patients referred with benign and malignant skin tumours has increased six-fold since 1980 and as a consequence, surgical procedures are undertaken in one in three new and one in 10 review patients. This is probably due to a real increase in the numbers of skin cancers over this time frame and increased public awareness regarding skin cancer which may lead to more patients consulting their general practitioner with skin lesions. One may also postulate with reduced training time general practitioners may also feel less confident about diagnosing skin lesions. This seems to be reflected in their ability to confidently diagnose lesions (Table 14) and so more patients may be referred for reassurance than in the past. Patients with eczema and psoriasis also account for one-third of outpatient clinic visits. This emphasizes the increasing demand from both primary and secondary care for provision of specialist dermatological services.

Chapter 4: Dermatological training of General Practitioners

CHAPTER 4: DERMATOLOGICAL TRAINING OF GENERAL PRACTITIONERS

4:1 INTRODUCTION

Quality of care in medicine has become an increasingly important issue. In the United Kingdom we rely on the primary care physician to serve as a “gatekeeper”, thereby limiting access to specialist care. Controversy has arisen regarding the abilities of primary care physicians, particularly in dermatology, to serve as effective gatekeepers ⁽¹²²⁻¹²⁵⁾. Despite the apparent high prevalence of skin disease most general practitioners have received very little formal training in dermatology ⁽¹²⁶⁾.

Undergraduate training in dermatology

Undergraduate teaching in dermatology typically comprises about 2 weeks attached to a dermatology department which is inadequate to develop competence in the subject ⁽¹²⁷⁻¹²⁸⁾. The dermatologists at Kings College Hospital have been proactive in ensuring that the diagnosis and management of skin disease retain a high profile throughout all levels of training. This, they say, begins at the undergraduate level, where enthusiastic, interactive teaching has fostered ambition in a significant number of graduates. At the postgraduate level, regular seminars are held for GP trainees, and most trainees take the opportunity to sit in on clinics during their vocational training ⁽¹²⁹⁾. McCarthy et al ⁽¹³⁰⁾ suggested that the current level of dermatology training at undergraduate level is inadequate to prepare future primary care physicians for their increased role in the management of skin disorders. They concluded that errors in diagnosis occurred frequently and when diagnoses were incorrect there was a tendency to mismanage: These junior doctors had had an average of three weeks total formal dermatology training. Overall, junior doctors diagnosed 60 % of cases correctly and 89% of these were treated appropriately or referred to the dermatologists. In 40 % of the cases however the junior doctor incorrectly diagnosed the cases, failed to refer patients to the dermatologist and the majority of these were treated inappropriately. Dermatologists felt that many more patients seen by the junior doctors may have merited a dermatology appointment.

Considering the referrals that would have been deemed appropriate by dermatologists, the junior doctor made only 62% of these. There were also 33% of referrals made by the junior doctors that were deemed unnecessary by the dermatologist.

In the UK ⁽¹²⁷⁾, a questionnaire was sent to dermatologists responsible for organizing the teaching of undergraduate dermatology in each of the 24 medical schools in the UK. Replies were received from all schools. Nineteen of the 24 schools had already introduced integrated curricula and the others were changing more slowly. Some dermatology was included in the core curriculum in all schools. Nine schools used some problem-based learning in addition to other teaching methods, but problem-based learning predominated in four schools and in two of these schools, most students never met a dermatologist. In general, the conclusion was that dermatology had maintained a reasonably high profile in the new undergraduate curriculum, but dermatology experience was inadequate in four schools. A small study of 43 general practitioners in 2003 ⁽¹³¹⁾ identified that four had no undergraduate training in dermatology, and 21 had two weeks or less. Dermatologists should maximize opportunities for introducing dermatology into the curriculum by familiarizing themselves with the forces that are driving curriculum reform, participating in curriculum development, keeping abreast of changes in medical education and using opportunities for interdisciplinary teaching. Live patient sessions are still the most popular with students ⁽¹³²⁾. Effective clinical teaching requires planning and preparation as well as time for feedback and reflection, but successful clinical teachers will have learned to teach in short “bites”, making the most of teaching opportunities in the clinic and balancing the conflicting demands of patients, students and junior staff ⁽¹³³⁾.

In 1993, the General Medical Council (GMC) recommended that all medical schools revise their curricula for undergraduate medical education and foster a more interdisciplinary collaboration in teaching. In accordance with these recommendations, new curricula have been introduced in U.K. medical schools. The schools have reduced the factual burden in curricula, and hence traditional

dermatology attachments may be curtailed, but new curricula have provided students with opportunities to pursue interests in depth in student-selected components. These changes present both opportunities and challenges for teachers of dermatology ⁽¹³⁴⁾. In June 2006, new recommendations for the undergraduate dermatology curriculum were circulated to all medical schools ⁽¹³⁵⁾. An audit against these recommendations was published in 2007 and showed some encouraging results, but there was still a wide variation in what was included in the curricula ⁽¹³⁶⁾. The authors concluded that there were some areas of good clinical teaching practice but that these needed to be extended to improve further the teaching and learning of dermatology in medical schools. A recent survey of UK final year medical students ⁽¹³⁷⁾ identified that 56% of the 449 respondents regarded the level of education in dermatology was sufficient but despite this, only 65% felt that they had the skills to adequately assess patients with skin disease while only 52% felt they had the skills to adequately manage them. Lynch's principles in 1965 for our goals in undergraduate teaching in dermatology are still very relevant ⁽¹³⁸⁾. Our aims, he states, should be

- (1) To assist in the formation of a true physician
- (2) To encourage the development of scientific attitudes towards clinical medicine
- (3) To help the student learn enough about dermatology so that the undifferentiated graduate will be adequately prepared for later acquisition of whatever further specific dermatological knowledge may be necessary for his particular choice of professional activity
- (4) To teach in a manner which will attract students toward dermatology

Postgraduate training in dermatology

The findings that between 3-18% of patients encountered in primary care has a dermatology problem and seventy five percent of these are cared for by primary care physicians without referral ⁽¹¹⁾ indicate that dermatology training should be an important component of primary care training programmes. It is desirable that such training focuses upon problems, procedures, and therapeutic modalities most likely to be of use. Although the balance between the number of primary care physicians

and number of specialists has been the subject of much attention, there has been little investigation of the quality and cost-effectiveness of various provider groups. Largely, dermatological care is rendered by primary care physicians. Dermatologists employ a more aggressive therapeutic approach to skin disorders than do primary care physicians. This may reflect the fact that dermatologists encounter more severe problems, have potential access to more potent treatments e.g. Roacutane or that primary care physicians require additional training in dermatological topical therapy or more likely a combination of all these factors⁽¹³⁹⁾.

Branch and Wintroub⁽¹⁴⁰⁾ reported skin disorders quite commonly in patients seeking primary health care from a general practitioner. They suggest that general practitioners have an important role in the assessment of skin disorders and that additional training might enhance their efficiency in caring for these disorders. Is teaching of dermatology however too dependent on dermatologists?

A study performed in 1993⁽¹⁴¹⁾ assessed the opinions of general practitioner representatives with regards to the importance and content of undergraduate training in dermatology for doctors entering general practice. 98.2% stated that they thought that dermatology should be part of the core curriculum. 96.9% thought that undergraduate experience in dermatology was essential for general practice. Many commented on the value of GP involvement/instruction in a general practice as part of the undergraduate dermatology course. Many mentioned further dermatological training for GP vocational trainees and course organizers came back to the theme that trainees entering general practice are ill-prepared for the dermatological problems that they face. Despite its low morbidity skin disease occupies a disproportionate amount of their time compared with other conditions including acute emergencies. Provision of post-graduate training courses for GPs and their registrars is inconsistent across the country. Ideally appropriate training for general practitioners should also be targeted at the range and severity of disorders that are actually seen in primary care rather than concentrating on those seen in hospital practice.

The Stiefel Skin forum is a clinical based meeting held 3 times per year sponsored by Stiefel Laboratories (U.K.) Ltd where dermatological patients are brought to the department for examination by the general practitioners. This meeting is extremely well attended with 70-120 GPs attending each session. This type of clinical meeting take place in 23 centres in the UK and appear to be a good way of satisfying general practitioner learning needs at a postgraduate level. The feedback forms, which are completed after these meetings, seem to suggest that

- (1) GPs like to be able to spend sufficient time studying each case
- (2) Whilst GPs are interested in rare conditions overall there is a preference to see and discuss the more common skin disorders which they deal with in practice
- (3) Case history notes are useful as they can then refer back to them

General practitioners are keen to be taught more about common dermatological conditions for example psoriasis, eczema, acne, skin cancers and vulval dermatoses. Kelly & Murray⁽¹⁴²⁾ assessed the career paths of doctors who completed vocational training in the west of Scotland between 1968 and 1987 and their views on the hospital component of their training. Medicine, obstetrics, paediatrics, and dermatology were considered by those now in general practice and who had experience of them, as the most relevant hospital specialties. Dermatology was rated as the third most relevant hospital job. Only 11% (64/600) of the respondents, however, had actually worked in a dermatology department.

Some attempt has been made to improve postgraduate training for general practitioners with the introduction of the new curriculum for general practitioners in training. Skin problems are represented as one of a number of curriculum areas which it is anticipated that general practitioner specialist registrars will complete as part of their specialist training but this area of the curriculum remains optional (Royal College of General Practitioners 2005)⁽¹⁴³⁾. This curriculum reflects the types of dermatological conditions encountered more frequently in primary care as detailed by our study Appendix 12 p150.

A novel web-based medical education programme in dermatology has been trialled in Italy. This was based initially on five simulated clinical cases of acne and a systematic appraisal of the evidence for their clinical management. A total of 500 medical doctors participated including primary care physicians, dermatologists and medical specialities. This Dermofad programme was an efficient means of delivering CME to the Italian medical community at large ⁽¹⁴⁴⁾. With technological advances a web-based teaching facility may have use in the future.

It is hoped that with the changes to the undergraduate curriculum and postgraduate general practitioner training in dermatology, there will be a raised level of knowledge and skills in dermatology in general practitioners over the next 5-10 years.

4:3 AIMS

The aims of this study were (a) to detail local general practitioner experience in Lothian of dermatology teaching at undergraduate level and (b) to document any postgraduate dermatology training that they had pursued. Do general practitioners feel that dermatology is as important a specialty as others that are recommended as attachments for postgraduate vocational training?

This is the first descriptive study to document general practitioners training and teaching in dermatology. It also attempts to document general practitioners opinions on the importance of dermatology training both during their undergraduate period and at postgraduate level.

4:3 METHODS

A questionnaire was constructed exploring the dermatological teaching and training general practitioners had been exposed to (Appendix 13 p153). This was first piloted among individual dermatologists in the department for ease of use and comprehensiveness. The questionnaire was amended and then piloted again with local GPs in the area (Appendix 14 Amended questionnaire P156). A list of practice managers was obtained for the Lothian area. All 131 general practices in Lothian were included in the study which employed 583 individual general practitioners. All GPs in the practice were invited to participate, including registrars and part-time GPs excluding only locum GPs. Each general practice was identified by a number which allowed the response rate from individual practices to be determined. Individual general practitioners from each practice were not identifiable. Most questions were tick box answers. There was a free response box at the end of the questionnaire. The first mail shot was sent in November 2003. A period of 6 weeks was allowed for return of the questionnaires and a further reminder was sent this time only to individual practice managers to encourage completion of the forms.

An item in the postal questionnaire asked respondents to state whether postgraduate training in dermatology is more important than, of equal importance to, or of less importance than, training in other specialities. Three specialities were chosen because these are recommended for general practice training at present namely obstetrics and gynaecology, paediatrics and psychiatry. Three further sub-specialities were chosen which are not essential for vocational training namely rheumatology, ear, nose and throat and ophthalmology. Using these data, the perceived importance of dermatology relative to other disciplines was formally assessed as follows by the statistician:-

- a) Responses relating to each speciality were assigned a numeric score thus:
'more important' = 1; 'equal importance' = 0; 'less important' = -1.
- b) The numeric scores at (a) were summed up for each respondent. This yielded an integer quantity whose value ranged from 6 (dermatology training deemed to be more important than all other specialities) to -6 (dermatology less

important than all other specialities). A value of zero indicated that dermatology was considered of equal importance to the other specialized areas.

The postal questionnaire also asked whether the respondent had received any formal postgraduate training in dermatology. A further question enquired as to whether or not there had been any factors which may have prevented the doctor from pursuing dermatology postgraduate training. Each of these factors was looked at individually to ascertain if they were associated with non-pursuit of postgraduate dermatology via logistic regression by the statistician. A logistic model was constructed in which receipt of postgraduate dermatology training (coded 0= received, 1= not received) was predicted by binary indicators representing

- Difficulty covering clinical commitments
- A lack of suitable courses
- The absence of any interest in the topic
- Other factors

Each of the above was coded 0= not applicable, 1= applicable. The model also incorporated a term representing the doctor's length of service (in years), since doctors who have greater length of experience will by definition have had greater opportunity to pursue postgraduate training. The inclusion of a variable representing age or length of service was adjusted for this effect. The gender of the doctor was also included.

General practitioner perception of the importance of dermatology may differ depending on their length of service, type of general practitioner. The following questions were therefore asked.

- Do GP Principals view dermatology training as more or less important than general practice trainees?
- Do GP trainers hold a different view of the importance of dermatology training from non-trainers?
- Does length of service in general practice influence the degree to which dermatology training is seen as important?

Questions such as these were addressed by constructing a statistical model by the statistician in which responses to the question 'Do you think a programme of teaching in dermatology for GPs is: very important / important / not important?' were predicted in terms of the type of GP; the length of service in general practice; and the gender of the GP. The latter is relevant because there are indications that female patients present with skin-related conditions more frequently in general practice than males. Since women doctors tend to see higher proportions of female patients than male doctors do it is reasonable to hypothesize that a female GP may hold a view of the importance of dermatology training which differs from that of male colleagues. Although the questionnaire presented three response options, only two ("important" and "very important") were used by the respondents. Consequently, the responses reduced to a binary contrast which can be modelled via logistic regression (coded 0= important, 1= very important).

Do GPs' perceptions of their competence in managing specific classes of skin condition relate to the receipt of formal postgraduate training in dermatology? The questionnaire data allow us to investigate whether the extent to which GPs feel competent to manage specific classes of skin condition is related to whether or not they have received formal postgraduate training in dermatology. Perceived competence is captured in questionnaire Item 30 ('do you feel comfortable at managing dermatology conditions?'). The classes of skin condition specified are

- Pigmented lesions
- Other skin lesions
- Psoriasis
- Eczema
- Infections and infestations
- Blistering diseases
- Paediatric dermatology

And, for each, the response options are

- No
- Not usually
- Mostly
- Yes

For analytical purposes, responses were dichotomised by the statistician at YES vs. all others (i.e. full competence at managing the condition as against all lesser degrees of competence). Having done this, the number of YES replies (number of full competencies) was summed up, yielding an integer value between 0 (competent at managing none of the specified conditions) to 7 (competent at managing all specified conditions). This was then modelled as an ordinal outcome (that is, a quantity which has a natural ordering but can only assume a small number of discrete values) via logistic regression. Also included as predictors were the type of GP, the gender of the GP and the doctor's length of service in general practice.

4:4 RESULTS

Undergraduate experience of dermatology

Three hundred and ninety two replies were received which represents a response rate of 67%. Equal numbers of male and female general practitioners responded (194 male respondents and 198 female respondents). The type of GP and the number of years the GP had been in practice was also recorded (Figs 15 & 16). The type of GP answering the questionnaire is entirely representative of the types of GPs in the community.

There was a good mix of principals, trainers, non-principals and GP trainees. If the respondents had been predominantly GP trainers it is possible that they may have a very different opinion regarding the importance of dermatology education than GP principals. Fourteen practices (11%) were non-responders. There were equal numbers of responders in city and rural practices. 79.1% (310) GPs had graduated from a Scottish university (Fig 17). Most GPs had completed their undergraduate course a number of years previously so 37.5% (147) were not able to recall or failed to answer the question as to how long their undergraduate dermatology course was and 26% (100) could not recall in which year of their course this training had taken place. Of the respondents 86.5% (212) had between 1 and 4 weeks undergraduate teaching in dermatology usually in their 4th or 5th year (90.2%). This predominantly took the form of lectures and clinical attachments 81.4% (298). A small proportion of GPs 2.9% (7) had had no undergraduate training in dermatology (Figs 18-20). 26% (102) felt that dermatology should be confined solely to the undergraduate medical curriculum. 71% (277) felt that dermatology was not only an essential part of the medical core curriculum but should also be taught at postgraduate level. 1% (4) general practitioners felt there was no place for dermatology in the core medical curriculum and that it should be taught only to those interested at postgraduate level. 2% (9) of GPs failed to answer this question (Fig 21). It is possible that if general practitioners had an interest in dermatology that they may perceive it to be of more importance than if they did not. Nonetheless the majority of general practitioners still felt that it should be part of both undergraduate and postgraduate training.

Fig 15: Type of general practitioner answering the questionnaire

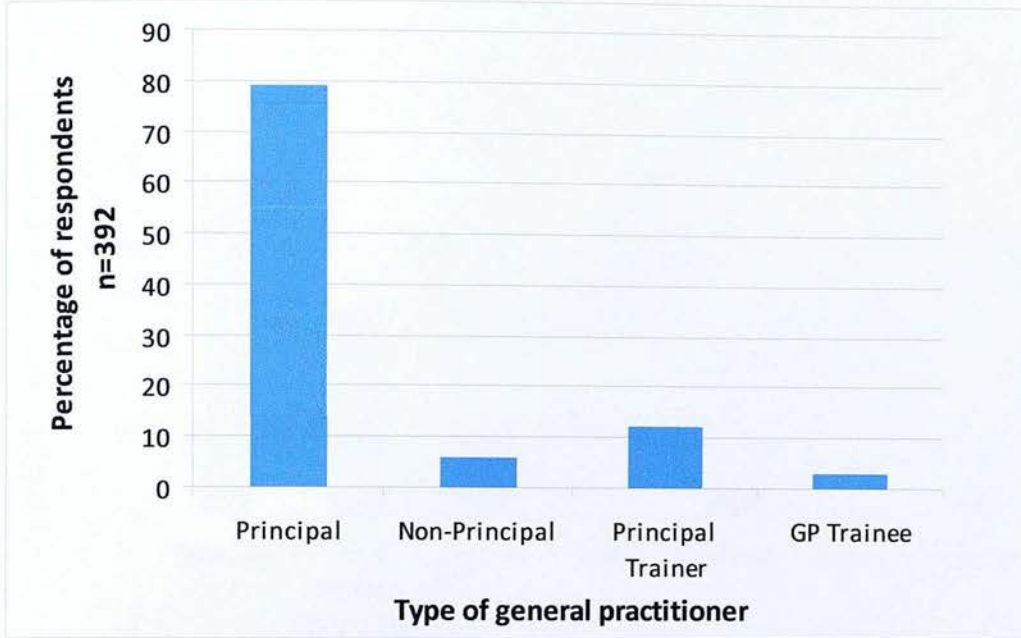


Fig 16: Number of year's general practitioner has been in practice

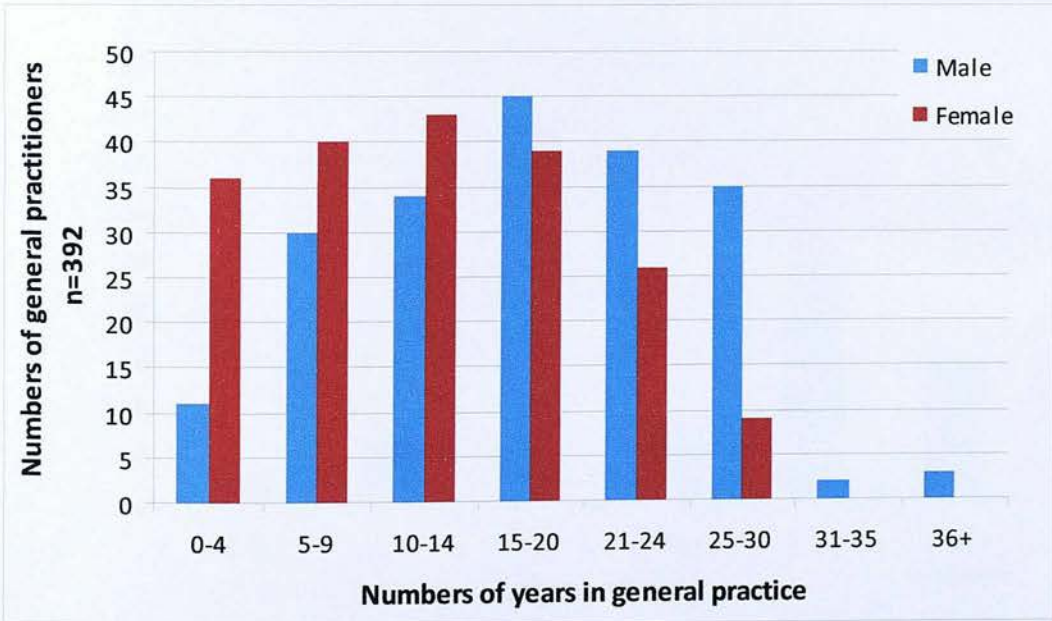


Fig 17: University attended as an undergraduate

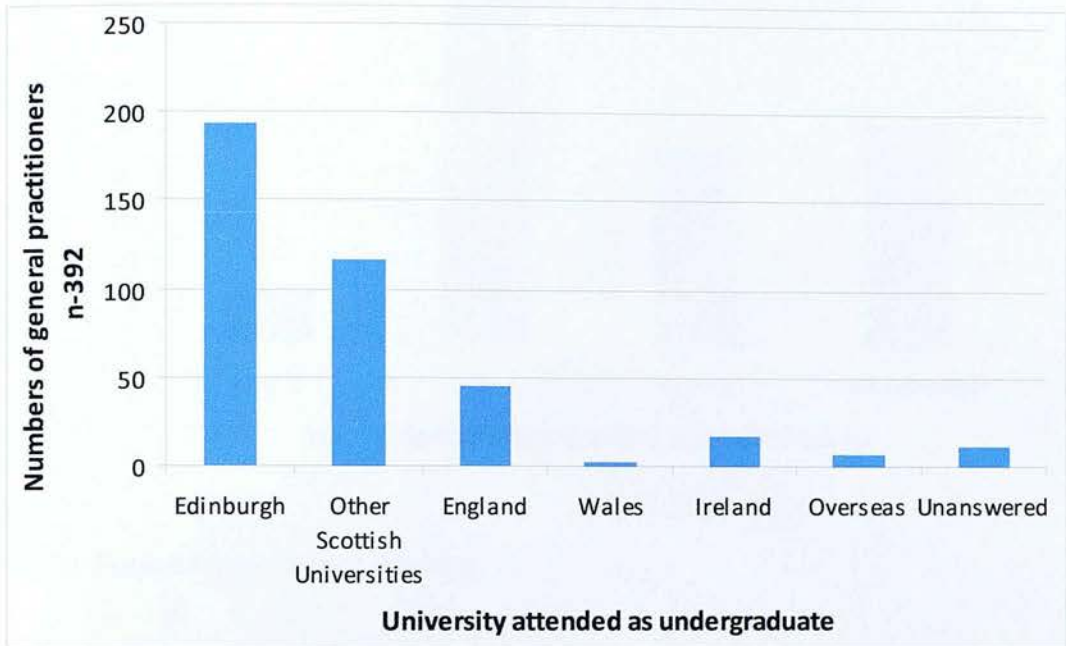


Fig 18: Length of dermatology attachment in weeks

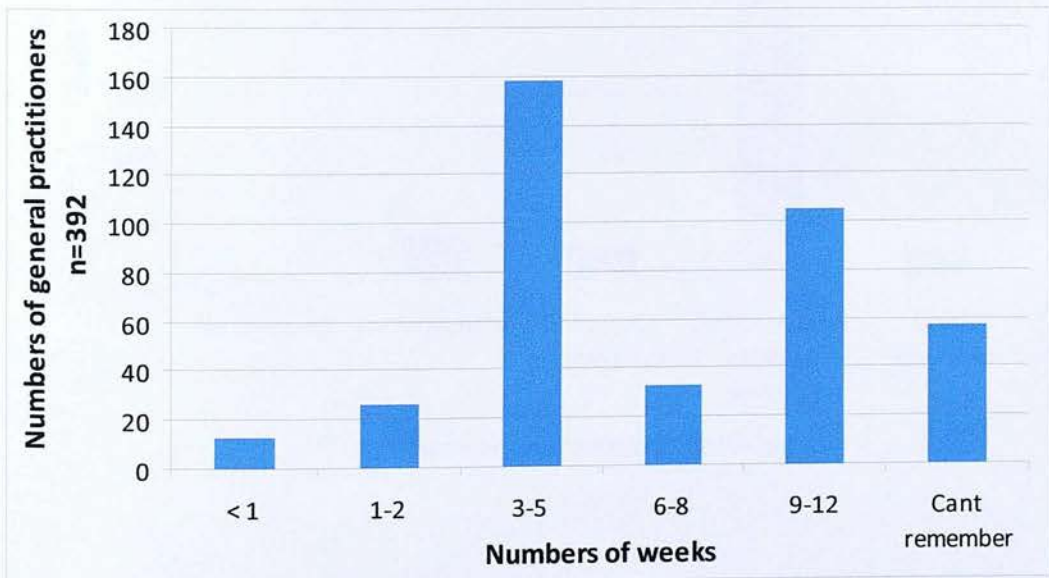


Fig 19: Year of dermatology attachment

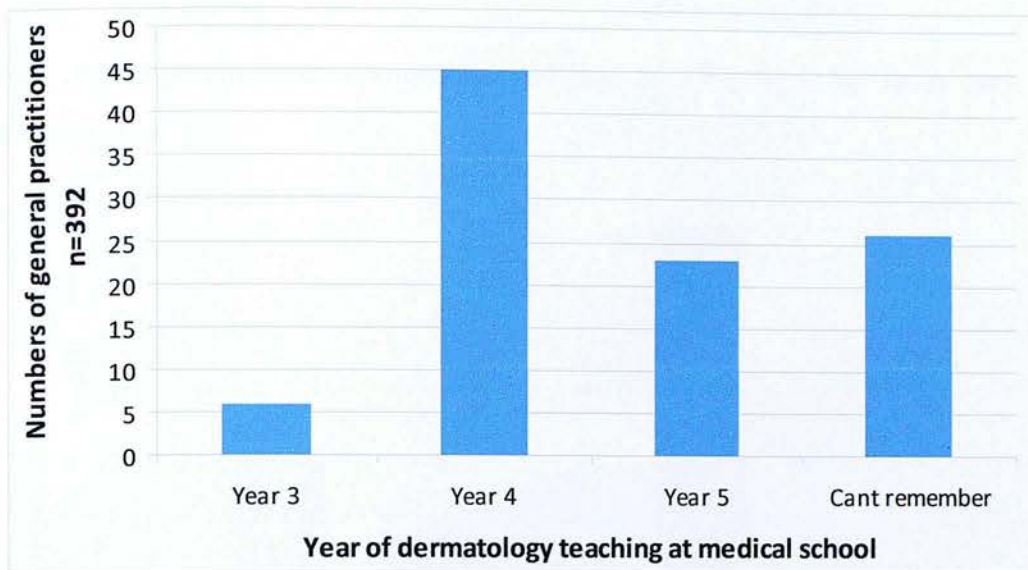


Fig 20: Form of dermatology teaching

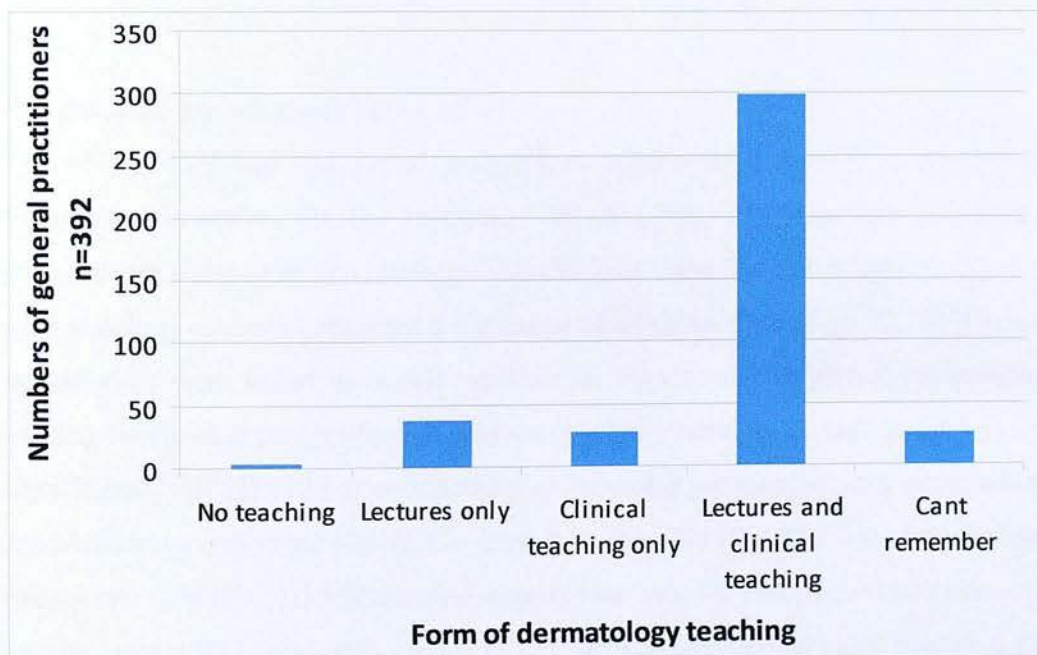
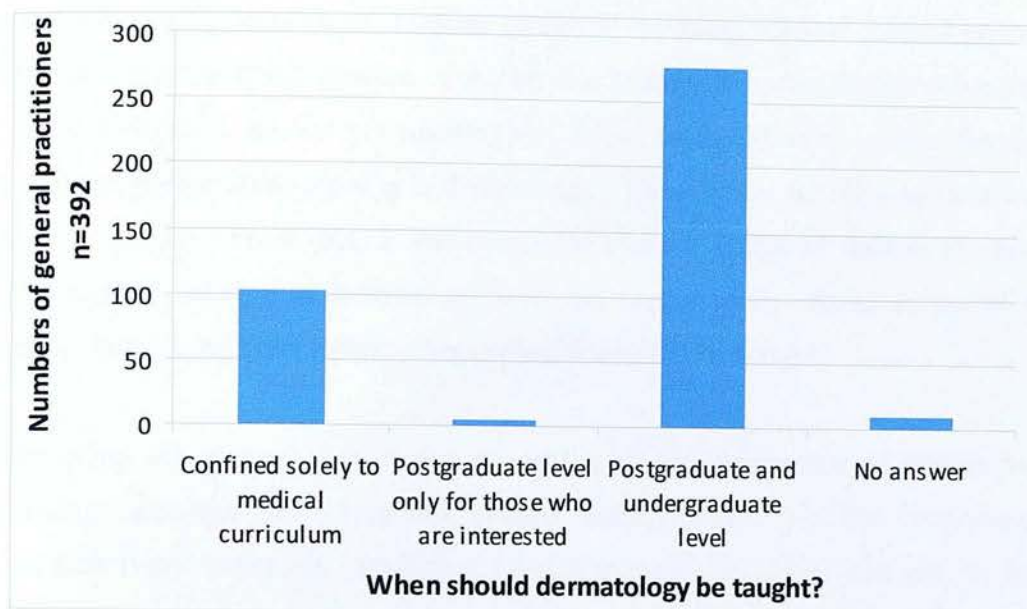


Fig 21: Importance of dermatology training as perceived by local general practitioners



Postgraduate experience of dermatology

11% (43) of GPs had had formal postgraduate training in dermatology, 3% did not answer the question. Of the remaining 86 % (340), who had not had formal postgraduate training in dermatology 90% (306) of these had voluntarily enrolled on a dermatology course or attended the evening clinical meetings (Figs 22,23). General practitioners were asked to decide whether the opportunity to pursue dermatology training for them at postgraduate level was very important, important, or not of great significance. All GPs either concluded that dermatology training at a postgraduate level was very important (40.3%) or important (56.6%) (Fig 24). Two hundred and twenty one GPs (79.5%) felt the most appropriate time for postgraduate dermatology training was at ST3 (registrar) level (Fig 25). General practitioners also indicated that they would value five yearly updates in their knowledge. General practitioners were asked to judge the importance of postgraduate dermatology training in comparison to other sub-specialities. A Wilcoxon Signed Rank Test was performed by the statistician to test the null hypothesis that the average value of the summed quantity was zero (denoting equal importance). This returned $p = 0.36$, leading to the

conclusion that postgraduate training in dermatology was considered overall to be neither more nor less important than training in other specialized areas.

None of the factors included, the gender of the doctor, her/his length of service, and the four specific 'hindrance' reasons (difficulty covering clinical commitments, a lack of suitable courses, absence of any interest in the topic, other factors determined by the individual general practitioner) was found to significantly predict the non-receipt of postgraduate training in dermatology. The p values for all predictors were 0.30 or greater. From this, it was concluded that the failure of doctors to pursue postgraduate training in dermatology does not appear to be related to any of the factors considered here; rather, other explanations must be sought.

Regarding the general practitioner perception of the importance of dermatology training: although three response options were provided for the 'importance' question (very important / important / not important), the latter was not, in fact, selected by any respondent. Of the 378 valid replies to this item, 220 (58.2%) selected 'very important', while 158 (41.8%) chose 'important'. Thus, the responses were reduced to a binary quantity (very important vs. important) by the statistician, and this was modelled via logistic regression with the following predictors, type of GP (principal, principal trainer, trainee and non-principal), years of service in general practice and gender of GP. All predictors were non-significant at the conventional 5% level (all p values were 0.10 or greater). It was thus concluded that GPs' perceptions of the importance of dermatology training are not significantly related to the type of GP, gender, or length of service in General Practice.

Receipt of postgraduate training in dermatology emerged as a highly significant predictor of the number of competencies reported ($p < 0.001$; odds ratio estimate 3.8; 95% confidence interval 2.9 – 7.0). This result indicates that having received postgraduate training in dermatology was positively associated with doctors' perception of their own competence at managing certain classes of skin condition. The model also indicated that the gender of the GP was a significant predictor of

self-assessed competence (male relative to female: $p = 0.01$; odds ratio estimate 1.7; 95% confidence interval 1.1 – 2.6).

Fig 22: Numbers of GPs who have had formal postgraduate training in dermatology

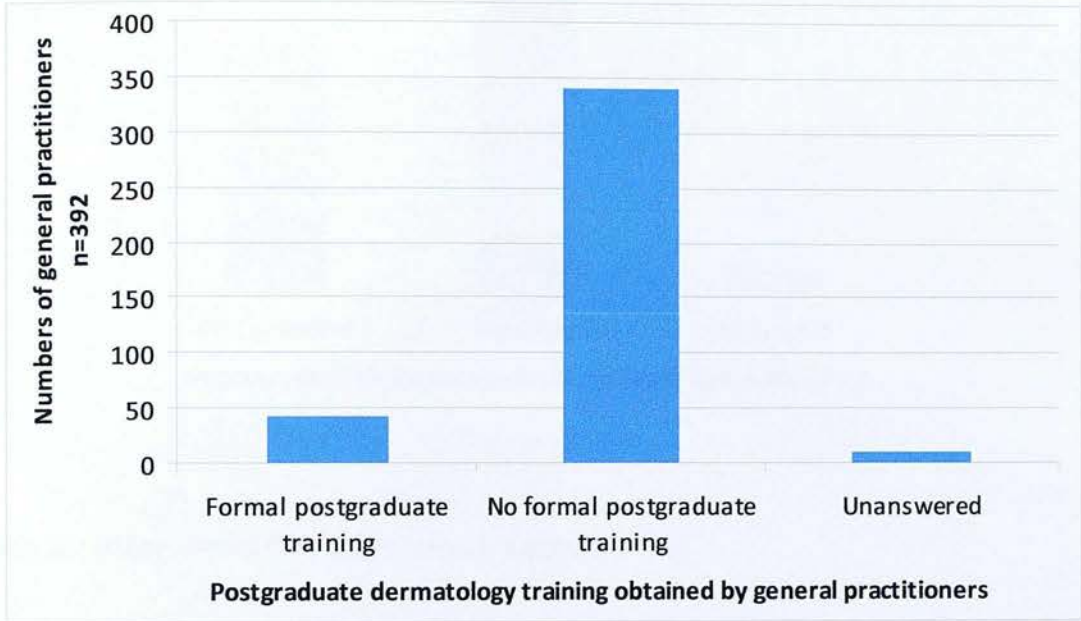


Fig 23: Postgraduate training obtained by GPs

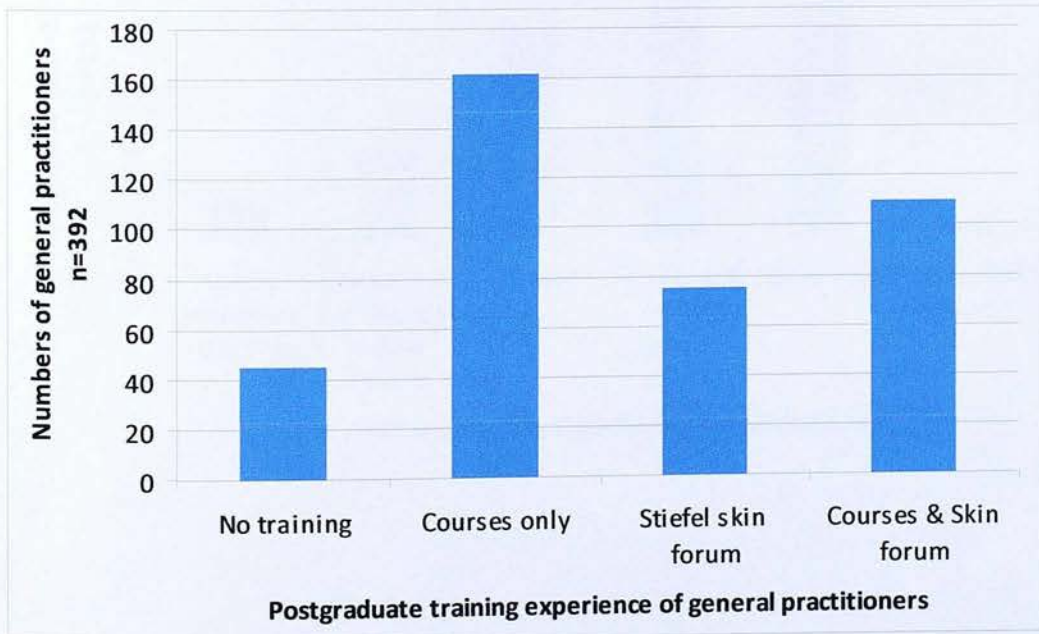


Fig 24: Importance of dermatology teaching at postgraduate level as perceived by the general practitioner

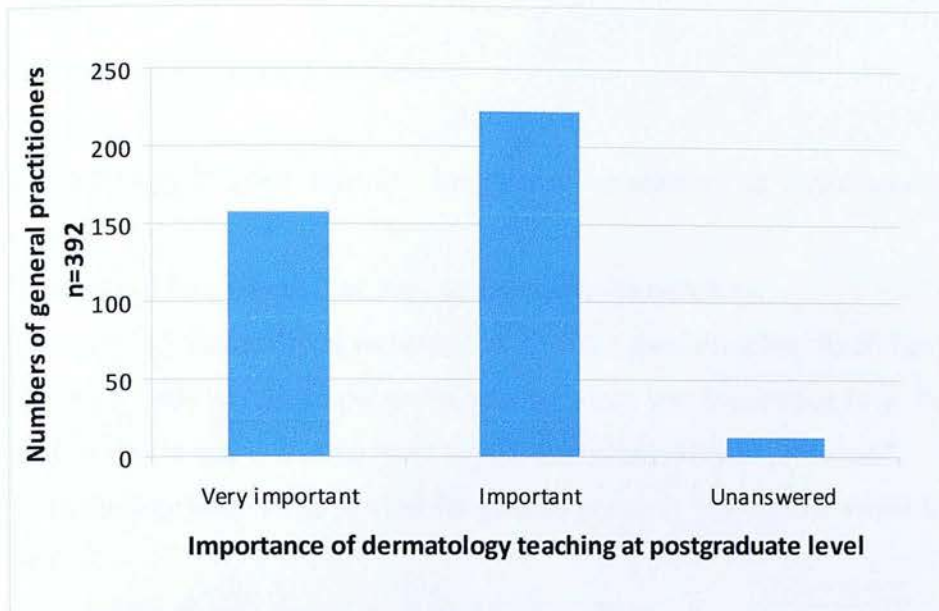
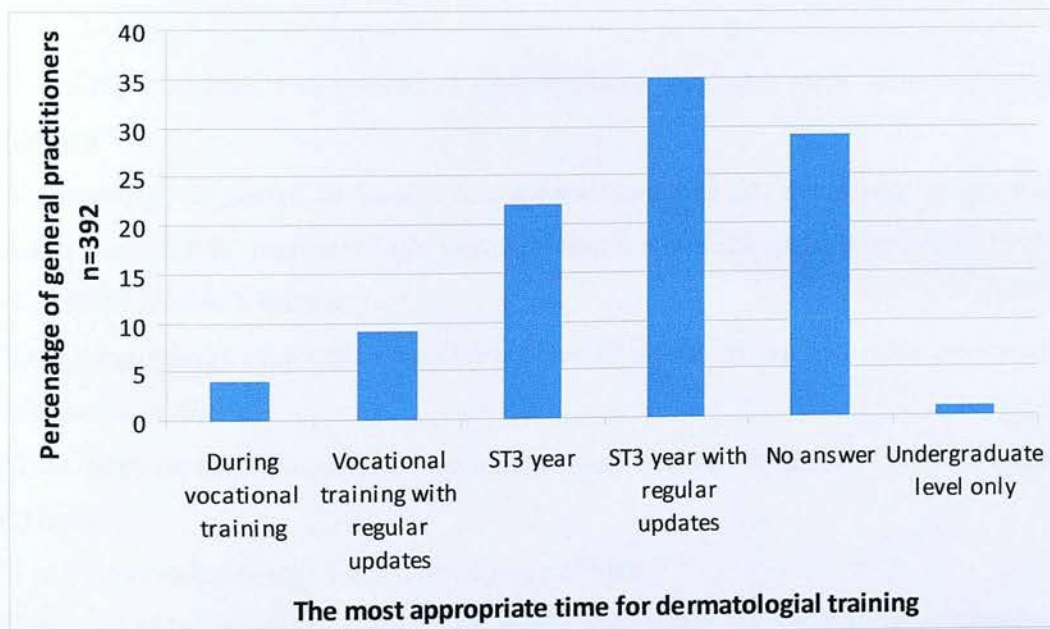


Fig 25: When would GPs value dermatological training?



The following few pages are a summary of the free response comments made by the general practitioners at the end of the questionnaire.

Free Response Positive Comments

“Dermatology is given too little importance considering its importance in general practice”

“You cannot be a GP and not have an interest in dermatology”

“Dermatology is equally as important as all other specialties but the clinical outcome is never usually severe so people in general attach less importance to it. Perhaps the irony of this is that it is often more visible than other medical problems”

“Dermatology knowledge is vital for general practice: You need a sound knowledge base”

“I would like to have had more formal post-graduate training in dermatology”

“Nothing can replace seeing lots of patients in clinics”

Free Response Negative Comments

“Teaching was poorly organized at undergraduate level and there were too many students”

“Dermatology appeared to have a low priority and was not perceived by medical students as all that important” We were told that it was unlikely to be tested in finals so most of us didn’t learn any.

“Our dermatology attachment was very close to finals: so we had other important things on our minds”

“You mean derma holiday: The attachment was a useless week: I should have gone on holidays”

“I can’t remember being at any dermatology clinics

“I remember being sent to coffee a lot, taught very badly and not properly examined so there was no necessity for us to learn any dermatology”

“Undergraduate teaching in dermatology was not enthusiastically taught by the consultants”

“I don’t think I saw any dermatological patients that would have been useful in general practice”

“One could argue that most of the undergraduate curriculum does not have much relevance for general practice”

“Postgraduate courses are run by specialists which are often not relevant”

“Dermatology courses are too didactic: they need to be more patient-orientated”

“Having a partner in the practice with a special interest in dermatology can be deskilling as you tend to refer to that partner and it is easy to refer all dermatology problems to them”

“The biggest obstacle to training is TIME”

Ideas for Service Improvement

“Our case load differs so much from hospital dermatology patients”

“Current out-patient waiting times for dermatology referrals is totally unacceptable”

“The long time delay between referral and consultation makes it very difficult to learn from a referral”

“More community nurse specialists would be good”

“I think dermatologists should spend some of their training in primary care- by the time you get to see our patients you see a very different clinical picture”

“The formal advice service by E-mail is a great idea”

“I have trained as an SHO in dermatology- even though I feel I’m relatively expert I often refer because the patient demands a specialist opinion. Referral rates do not necessarily reflect your level of expertise”

“We desperately want more training in dermatology but at present it is not a political priority: it will not become important until it is identified as an unmet learning need”

“I would much prefer to sit in clinics absorbing the way dermatology patients are managed rather than attending lecture-based teaching”

“I think an afternoon in OPD clinic would be most useful: no formal teaching just observing”

“The Skin Forum is the best of all for practical relevant learning”

“I would prefer a shorter more clinically orientated course, perhaps in the evenings”

“I learn best by experience most courses do not offer this method of teaching”

“Experience and good letters from consultants are the best learning tools”

“Postgraduate training designed by a 50:50 dermatologist: GP would be excellent”

“Internet teaching or CD ROMs may be useful if people have family commitments”

“Most of what we refer could be done in general practice if there was more

(a) funding

(b) time

(c) training”

4:5 DISCUSSION

Skin disorders affect between one-quarter and one-third of the population at any time and 3-18% of general practitioner consultations are related to the skin. There is no compulsory vocational training in dermatology for GPs in the UK and the core medical curriculum in some universities is lacking in adequate dermatology training (127).

Undergraduate training in dermatology:

General practitioners are of the opinion that dermatology should remain an essential part of the undergraduate medical curriculum. It may be important to increase or maximise resources for undergraduate teaching. We should perhaps encourage doctors to teach who have an interest in teaching and value this commitment to teaching by decreasing their clinical commitments. It is important to have formal examination processes during undergraduate dermatology attachments and during student final examinations. The principles of adult learning (145) determine that adults are "relevancy orientated" and must see a reason for learning something new. Adult learners are also practical and focus on the aspects of a lesson most useful to them in their work. They may not be interested in learning for its own sake. Dermatology will retain its place in medical school curricula provided that dermatologists keep abreast of trends in medical education, seize opportunities to teach, participate in medical school assessment such as final examinations, share ideas and maintain links with other specialties. In the document "teaching opportunities for undergraduate dermatology in the UK" published by BAUTOD (146) they state that "In view of the fact that a high proportion of GP consultations are for dermatological conditions, it is extremely important that all undergraduates have a minimum core of dermatological knowledge at the time of graduation, even if a greater component of dermatology is in future introduced to general practitioner postgraduate training".

Postgraduate training in dermatology:

Provision of postgraduate training in dermatology for general practitioners is inconsistent across the UK. General practitioners are keen to have more opportunity

to experience dermatology postgraduate training and teaching. They recognise the importance of dermatology training and are more confident at managing dermatological conditions with formal training. Dermatology is not routinely included in the hospital specialities that general practitioners rotate through during specialist training. This means that most general practitioners will not have had any postgraduate attachments to the dermatology department. If dermatology were included in general practice training schemes this would ensure that more general practitioners had exposure to dermatology. General practitioners recognise their clinical dermatological workload differs from that of the secondary care unit. Clinical teaching ran jointly by a general practitioner and dermatologist during the general practice training scheme would appear to satisfy general practitioners learning requirements. The preference for general practitioners is to be exposed to live patients in contrast to traditional lecture based teaching methods.

The Quality and Outcomes Framework (QOF) is a voluntary annual reward and incentive programme for all GP surgeries detailing practice achievement results. At present there are no QOF points for dermatology in the GP contract. There is therefore no financial incentive for GP practices to improve their dermatology services. Proposals for the inclusion of dermatology in the QOF have been put to the QOF review team. If these proposals do come into effect this may encourage general practitioners to improve the dermatological care offered to their patients. Inclusion of QOF points for dermatology patients may help stimulate interest in attending formal postgraduate dermatology training opportunities.

General practitioners with a special interest in dermatology have recently attracted much attention. GPSIs with an interest in dermatology may be able to deliver a dermatological service in the community⁽⁸⁶⁻⁸⁹⁾. GPSIs work best when they are fully integrated with local specialist dermatology services. There is debate about the cost effectiveness and quality of care offered by these models of care. Despite BAD guidance⁽¹⁴⁷⁾ as to the training that GPSIs should have, there is considerable variation in training across the country⁽¹⁴⁸⁾. There is also evidence to suggest that

some knowledge may actually increase referral rates to secondary care⁽⁶⁹⁾ which may be entirely justified.

Chapter 5: Conclusions and Recommendations

Chapter 5: Conclusions and Recommendations

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

Primary care:

Despite the high prevalence of skin disease in the community, most general practitioners have received very little formal training in dermatology. The alternative to the present system where the GP is the gatekeeper is a system similar to the USA or Europe. In this situation the patient self-refers directly to dermatologists in the community who in turn refer to colleagues in secondary care for more complicated treatments. At present however there are insufficient dermatologists trained to provide this level of service. There has been a move to deliver better quality of “care closer to home”⁽¹⁴⁹⁾ by a number of means. Community clinics are currently being undertaken by consultant dermatologists. With the emergence of the Tier 2 Clinical Assessment and Treatment Centres (CATS) more GPSs are offering intermediary services in the community. The effects of the CATs schemes are to (a) create an additional step in the patient journey, increasing potential waiting times and reducing patients choice, (b) reduction in the likelihood of accurate diagnosis, (c) undermining of the financial viability of secondary care dermatology departments, making some unsustainable and (d) undermining the role further of the primary care physician and removing any incentive for them to expand their knowledge of dermatology. How do we best manage dermatological patients in primary care? It would seem reasonable to focus GP training in dermatology on the common skin conditions in primary care, namely eczema, infective skin conditions and benign tumours: this would cover at least 50% of the GP dermatology workload and thus approximately 4% of GP overall workload. This will not alter the referral rate in the short term but with concentrated efforts may in the long term lead to reduced referrals and better management of these patients in primary care. The low frequency of malignant tumours seen in primary care inclines one to endorse the NICE guidelines⁽¹⁵⁰⁾, which recommend that the management of most skin cancers should be in secondary care. Concentrating education programmes on the differentiation of benign from malignant skin tumours may also be helpful in reducing unnecessary secondary care referrals.

A financial incentive in the New GP contract for the management of dermatological patients may go some way to helping encourage general practitioners to focus their attentions on these patients which might in turn lead to better management of these conditions. To have dermatology rotations more commonly featured in the general practice hospital component of training would ensure greater exposure of dermatology. This may lead to a better management of these conditions in primary care.

We may be able to use dermatological nurses or allied health care professionals who have had training in dermatology to deliver more dermatological care in the community. It may also be possible to foster good working relationships between primary care nurses and dermatological nurses in secondary care. This relationship may lead to dissemination of information which may better help manage dermatological patients. Eczema represents a significant workload for the general practitioner constituting 22.5% of all patients seen with a dermatology condition, 44% of patients who frequently attend their general practitioner and 26% of all hospital referrals. It may be feasible to have an "eczema nurse"⁽¹⁵¹⁾ in primary care, similar to asthma nurses and diabetic nurses. Primary care nurses would probably need considerable support from secondary care. Cox and Bowman⁽¹⁵²⁾ circulated a questionnaire to community nurses treating dermatological patients. 14 out of 69 (20%) either treated children or gave advice to parents regarding childhood eczema, 11 (16%) treated psoriasis, 55 (80%) treated leg ulcers, and 30 (43%) treated other dermatological problems. Specific questions regarding confidence to treat or educate were analyzed in relation to the tasks being performed. 85% (47/55) treating leg ulcers were confident about their ability to apply four-layer bandaging. However, 8 out of 11 (72%) respondents treating psoriasis were not confident about their ability to treat scalp psoriasis, 11 out of 14 (79%) of those treating childhood eczema were not confident about applying body-suiting, and 26 out of 36 (72%) of those treating eczema, were not confident about their ability to recognize infection as a cause or complication of dermatoses. The average community nurse actually deals with relatively few dermatology patients each week (mean 5.4), of whom nearly half (49%) have leg ulcers. The favoured educational modalities were visits to the local

dermatology department (60/69, 87%), availability of a dermatology Nurse Practitioner or Liaison Nurse, or access to a hospital nurse-run dermatology clinic (both 44/69, 63%), or attendance at courses (36/69, 52%). Community nurses have an important role in treating and educating patients who may not require or be able to attend hospitals for treatment; they will achieve this best by provision of relevant locally based education, with allocation of adequate study time. The majority of nurses treating skin conditions work in general practice, are highly qualified, and have a wealth of clinical experience. Dermatology nurse training is inconsistent. A small number of nurses do not feel confident in their prescribing practice ⁽¹⁵³⁾. To relocate our trained dermatological nurses from secondary care has obvious implications for the delivery of the service. Primary care may not offer the same support network as a large dermatological unit and thus job satisfaction may be affected.

If we were to train more dermatologists to work similar to the system in USA and Europe it may be necessary to have two separate training routes for dermatologists. It would be important to train the community dermatologists in the management of the more common primary care dermatological diagnosis. The number of dermatology trainees however is likely to decrease in the next few years. The dichotomy in working environment may also lead to recruitment difficulties when attracting dermatology trainees. With all of these suggestions many hurdles will need to be overcome. More focused training of general practitioners allied with a change in the GP contract and addition of dermatology as a hospital speciality during GP vocational training may be the most sensible option.

Secondary care:

There is no doubt that our referral rate has increased significantly in the last 25 years from 12.6 per 1000 in 1980 to 21 per 1000 in 2005. Referrals from secondary care physicians have quadrupled since 1980 and now account for 11% of our new referrals. Secondary care faces some similar issues to those in primary care. We are struggling to find capacity to deal with increasing referral rates. How do we best deal with the referrals that we are receiving and attempt to meet targets without

compromising quality of care? A change in the way we practice may increase our capacity. In 1983 there were a large number of referrals to the dermatology department in Edinburgh for treatment of viral warts. Following the introduction of liquid nitrogen to general practices referrals for viral warts have almost completely disappeared. It is thus possible to train general practitioners to better manage conditions in primary care rather than refer them to hospital clinics. If general practitioners had the ability to confidently diagnose benign lesions in primary care and treat these surgically this would decrease our referral rates.

A restructure of our clinic templates may help process patients more efficiently. The proportion of lesions has increased over the years and those patients with lesions can be processed quicker than general dermatology patients. Most units will have rapid access clinics for processing urgent referrals deemed to be skin cancers by the general practitioners but there is no evidence to suggest that these clinics have a higher rate of detection of skin cancer. Some units have therefore begun to process all lesions through the same clinic as opposed to just the lesions the GP referred as urgent. If general practitioners are aware that this is a change in how we are processing lesions it may prompt an attempt at a definite diagnosis. However, we must be aware that hospital waiting lists have a degree of self-regulation and may be resistant to shortening because reductions in length may generate increase in referrals (154).

Teledermatology is in particular vogue at present and may be viewed by policy-makers as a quick-fix tool for managing increased demand for specialist dermatology care. A degree of caution must be exercised. In the UK over the previous decade there have been numerous attempts at introducing and using teledermatology; however, the development of teledermatology as routine service provision remains limited (155). It has been suggested that teledermatology should be used in caution for patients with suspected malignant pigmented lesions (156) and is also deemed to be less accurate to in-person dermatology for non-pigmented lesions (157). Most recently a position statement on teledermatology has been released by the Scottish Dermatological Society (158). It was concluded that teledermatology was a useful

adjunct to service provision in remote sites but not a substitute for face to face consultation.

With increasing technological advances it is possible that new technology will be used to deliver dermatological care more efficiently. There have been studies looking at images taken from mobile phone cameras and comparing the diagnosis with face to face dermatological consultations ⁽¹⁵⁹⁾. Mobile phones have also been used to support self-management of patients suffering from psoriasis successfully ⁽¹⁶⁰⁾.

Increased utilization of our secondary care dermatology nurses is perhaps another way we can deliver our service more efficiently. It has been shown that eczema workshops are helpful in the management of childhood atopic eczema. There appeared to be greater adherence to eczema management in the patients attending the nurse-led eczema workshop compared with the dermatologist-led clinic ⁽¹⁶¹⁾. There is also scope to develop the nurse biopsy role ⁽¹²⁰⁾ which has been recommended by the All Parliamentary Group on Skin (2003). Nurses frequently play lead roles in the diverse range of models of care that exist in dermatology. Many units have nurse-led systemic clinics, skin cancer screening clinics and surgical lists with governance facilities in place which are an addition to the service ⁽¹⁴⁸⁾. There are a few areas that need further research e.g. the cost-effectiveness of nurse-led care, and extended independent and supplementary nurse prescribing in dermatology, that point to the need for further rigorous evaluation ⁽¹⁶²⁾.

The emergence of walk-in centres has the potential to change the mix of dermatological conditions that may present in secondary care. Little is known about the dermatology case profile of such patients in these intermediary services. One study examined the dermatological conditions presenting in the first two years of one centre opening, where 21% of all patients had a skin-related problem. Most patients presented with a rash (89%). No physical treatment was required in 77% of patients, and 49% were advised to seek secondary care dermatological help. A significant number of patients with dermatological conditions seem to be accessing these centres ⁽¹⁶³⁾. ICAT centres are also in operation throughout the UK where GPs will refer

dermatology patients directly to an intermediate community service often ran by GPs with an interest in dermatology rather than secondary care. The aspiration behind these centres was to decrease the number of referrals that needed to be made to secondary care however there have been some suggestions that these centres only fulfill an unmet need for dermatological consultations in the community and have no influence on the referral rates to secondary care ⁽⁸¹⁻⁸²⁾.

Demands for guidelines in dermatology care are frequent but do they actually achieve better care or improve selection of referrals? One study suggested that there was a 40% increase in the number of appropriate referrals immediately after the introduction of guidelines but this was not sustained 2 years later ⁽¹⁶⁴⁾. Five common conditions accounted for two-thirds of inappropriate referrals before and after the guidelines were sent. The need for continued general practitioner education in dermatology to reinforce referral guidelines is demonstrated. It seems that although initially they may improve the quality of referrals to dermatology, the numbers of patients referred also increases, suggesting that there may be a large unmet need for treatment of skin disease in the community.

We need to ensure that other physicians and the public are aware of our training and skills. A BAD study in 2007 found that one in five adults incorrectly believed that dermatologists conduct treatments like facials, tanning, waxing or facelifts ⁽¹⁶⁵⁾. This study was performed in the light of current threats to dermatology care. There are many instances when dermatologists work closely with allied specialities e.g. in the management of skin cancers. These relationships also need to be fostered so as we are aware of each other's strengths. There are other areas that as dermatologists we may be best served to advise the public e.g. advice on cosmetic procedures. Any change in service delivery will require close collaboration between primary and secondary care and a clear understanding of the issues that both sectors are facing.

RECOMMENDATIONS

Patients with skin disease (and their carers) need to feel confident that, whoever manages their problem, the required knowledge, skills and competency to deliver the

care has been demonstrated. The evidence presented demonstrates that there is an inverse training law operating in dermatology: where the need is greatest, with skin problems being one of the commonest problems seen in primary care, the degree of training is least. A small number of highly trained individuals see 6.1% of all patients presenting with skin problems each year whilst the remaining 93.9% are seen by health care professionals who through no fault of their own, have had very limited training in the diagnosis and management of skin problems. There is a need to move towards a more pyramidal service structure that encompasses several layers of different professionals with varying degrees of knowledge and skills to match population needs more appropriately.

Undergraduate dermatology

- With a large percentage of the population experiencing a skin problem requiring medical intervention each year it is essential that undergraduate medical training in dermatology is improved.
- Adults are goal orientated learners who will learn if that experience has relevance and meaning to their current context. We therefore need to continue to examine medical students in dermatology following attachments, and in the final MB examination to encourage medical students to spend time learning dermatology.

Postgraduate dermatology

- Whilst the new RCGP curriculum document entitled Skin problems is a welcome development setting out a required knowledge base for general practitioners in training relating to skin symptoms and common skin conditions, it could be improved by tightening the link between the curriculum content and the problems presenting in primary care.
- There remains no obligatory requirement for formal training in dermatology during the three year general practitioner specialty registrar training period (Royal College of General Practitioners 2005), although innovative posts

with exposure to relevant sub-specialities such as dermatology are recommended.

- There is currently no incentive for postgraduate doctors to learn dermatology as it has been removed from the PACES examination. If it was reinstated as a potential area of examination it would encourage postgraduate physicians to learn some dermatology at this level.
- Despite good intentions, it would appear that there remain no formal requirements for either postgraduate training or assessment of learning outcomes against the curriculum that relate to skin problems.

Primary care

- The information in this thesis could provide the basis for a general practitioner specialist registrar curriculum that reflects the case mix presenting to general practitioners.
- The need for all general practitioners to have training and assessment of knowledge in diagnosis and management of skin disease should be reviewed in the light of overwhelming data of the high prevalence of skin disease.
- Common skin conditions seen in childhood such as atopic eczema need to be included in the knowledge base of the general practitioner curriculum relating to children and young people.
- We need to ensure, as far as possible, that dermatology teaching is clinically orientated and relevant for general practitioners and allied health care professionals alike.
- We should encourage dermatology attachments as part of the GP vocational training programme
- All nurses should receive an educational programme that includes information about skin conditions in particular for the practice nurses focusing on the management of leg ulceration, eczema and the recognition of malignant skin lesions as these are the dermatological conditions they are most likely to encounter. Nurse training like general practitioner training needs to be tailored to the skin conditions that they regularly encounter in day

to day practice. Relevant teaching and assessment programmes should be consolidated/developed to meet this need.

- It may be advisable to use the expertise of the secondary care dermatological nurses in the teaching and training of the primary care nurses in the better management of dermatological patients
- Clinical referral guidelines might aid general practitioners manage dermatology patients in primary care and refer patients to secondary care more appropriately
- If dermatological conditions attracted QOF points or GPs were incentivised in some way to provide dermatological treatment this would encourage general practitioners to invest more time in dermatological training.

Secondary care

- We need to utilise more effectively our nurses and allied health professionals to complement the existing service
- Dermatology specialist nurse roles need clarification using the knowledge and skills framework
- Accreditation frameworks for general practitioners with a special interest in dermatology should be implemented. The role of these clinicians in teaching and training other primary care professionals should be emphasised.
- Opportunities to develop the role of experienced speciality and Associate Specialist doctors in the teaching and up-skilling of primary health care professionals should be considered.
- We need to think about changing the clinic structures and templates to reflect the increasing burden of skin lesions and introduce rapid lesion assessment clinics which can throughput more new patients than a general dermatology clinic.
- Increased dermatological education for other secondary care physicians might help impact on the 11% of dermatological referrals that come from secondary care.

- Consultant dermatological training may need to be flexible and reflect the way services are changing in relation to the population needs.
- There may be an argument for increasing training posts in dermatology to train more consultant dermatologists to manage our patients.
- We need to ensure that we publicise our role and skills to the general public and other physicians so as when patients are making choices about where best to access dermatological care they are aware of the training and qualifications of the relevant individuals and are in a position to choose the most appropriate tier of service for their condition.
- A process of accreditation of dermatological units would help commissioners decide where best to access good dermatological care

All these recommendations have been made with the current research that we have available. However there are a few areas where further research may enable us to better advise where best dermatological care could be accessed. There is a need for a prevalence study of dermatological conditions in the community that includes information on disease severity and quality of life and current use of dermatological services. This would help determine the hidden prevalence of dermatological conditions. We need better data capture systems to capture data regarding the types of dermatological patients accessing all levels of the NHS care pathway. Further research is also needed to evaluate the potential health gain of various health care professionals delivering dermatological care in different service models. We also need further information on how and when best to train generalists in the management of common skin conditions.

References

- 1) Benton EC, Hunter JAA. The dermatology out-patient service: a study of out-patient referrals in a Scottish population. *Br J Dermatol* 1984; 110:195–201.
- 2) Harris DWS, Benton EC, Hunter JAA. The changing face of dermatology out-patient referrals in the south-east of Scotland. *Br J Dermatol* 1990; 123:745–50.
- 3) McKenna DB, Shepherd S, Russell S, Benton EC. Dermatology out-patient workload in the south-east of Scotland, 1981–2000. *Br J Dermatol* 2001; 145 (Suppl. 59):74 (Abstr.)
- 4) Buzzoni C; AIRTUM Working Group. Population ageing effect on number of cancer cases: Italian cancer registries data. *Epidemiol Prev* 2011 May-Aug;35(3-4):216-21
- 5) Whiteman DC, Bray CA, Siskind V, Green AC, Hole DJ, Mackie RM. Changes in the incidence of cutaneous melanoma in the west of Scotland and Queensland, Australia: hope for health promotion. *Eur J Cancer Prev*. 2008 Jun;17(3):243-50
- 6) Colwill JM, Cultice Jm, Kruse RL. Will generalist physician supply meet demands of an increasing and aging population? *Health Aff*. 2008 May-Jun;27(3):w232-41. Epub 2008 Apr 29.
- 7) Walter FM, Humphrys E, Tso S, Johnson M, Cohn S. Patient understanding of moles and skin cancer, and factors influencing presentation in primary care: a qualitative study. *BMC Fam Pract*. 2010 Aug 31;11:62
- 8) Kerr OA, Benton EC, Walker JJ et al. Dermatological workload: primary versus secondary care. *Br J Dermatol* 2007; 157 (Suppl. 1): 1–2 (Abstr.)
- 9) Scott A, Wordsworth S. The effects of shifts in the balance of care on general practice workload. *Fam Pract*. 1999 Feb;16(1):12-7.
- 10) Easton K, Read MD, Woodman NM. Influence of early discharge after hysterectomy on patient outcome and GP workloads. *J Obstet Gynaecol*. 2003 May;23(3):271-5

- 11) Ostbye T, Yamall KS, Krause KM, Pollak KI, Gradison M, Michener JL. Is there time for management of patients with chronic diseases in primary care? *Ann Fam Med.* 2005 May-Jun;3(3):209-14
- 12) Clough C. Modernising medical careers: effect on NHS service delivery. *Hosp Med.* 2005 Mar;66(3):139-41
- 13) Elledge RO, Alexander R. Impact of MMC on basic surgical training and experience of oral and maxillofacial higher surgical trainees. *Br J Oral Maxillofac Surg.* 2011 Jul;49(5):e24. Epub 2001 Apr 22
- 14) Chand M, Faruque M, Dabbas N, Nash GF. Modernising medical careers and the British surgeons of the future. *Br J Hosp Med (Lon).* 2010 May;71 (5) :2828-5
- 15) Christopher DF, Harte K, George CE. The implantation of Tomorrow's doctors. *Med Educ.* 2002 Mar;36(3):282-8
- 16) Spurgeon P, Hicks C, Field S, Barwell F. The new GMS contract: impact and implications for managing the changes. *Health Serv Manage Res.* 2005 May;18(2):75-85
- 17) Scottish Executive Centre for Change and Innovation Guidelines www.pathways.scot.nhs.uk 2003 Updated 2007
- 18) www.bad.org.uk Vacant posts
- 19) www.gmc-uk.org/Dermatology_curriculum_2010.pdf_32485914.pdf
- 20) McCormick A, Fleming D, Charlton J. Morbidity Statistics from General Practice: 4th National Study 1991–92. London: HMSO, 1995.
- 21) Williams H (1997b). General practitioner referrals. *British Journal of Dermatology*, 136,634
- 22) Harlow D, Poyner T, Finlay AY, Dykes PJ. Impaired quality of life of adults with skin disease in primary care. *Br J Dermatol* 2000;143:979-982
- 23) Rea JN, Muriel L, Hewhouse, Halil T. Skin disease in Lambeth. *Br J Prev Soc Med* 1976,30,107-114
- 24) Fleischer Ab Jr, Feldman SR, McConnell RC. The most common dermatological problems identified by family physicians between 1990-1994. *Fam Med.*1997 Oct;29(9):648-52

- 25) Awadalla F, Rosenbaum DA, Camacho F, Fleischer AB Jr, Feldman SR. Dermatologic disease in family medicine. *Fam Med.* 2008 Jul-Aug;40(7):507-11.
- 26) Fien S, Berman B, Magrane B. Skin disease in a primary care practice. *Skinmed.* 2005 Nov-Dec;4(6):350-3.
- 27) Steele K. Primary dermatological care in general practice. *J R Coll Gen Pract* 1984;34:22-3
- 28) Julian CG. Dermatology in general practice. *Br J Dermatol* 1999;141:518-20
- 29) Basarab T, Munn SE, Jones RR. Diagnostic accuracy and appropriateness of general practitioner referrals to a dermatology out-patient clinic. *Br J Dermatol* 1996 Jul;135(1):70-3
- 30) McKenna DB, Shepherd S, Russell S, Benton EC. Dermatology out-patient workload in the south-east of Scotland, 1981-2000. *Br J Dermatol* 2001;145(Suppl.59):74(Abstr.).
- 31) Stern RS, Gardocki GJ. Office-based care of dermatologic disease. *J Am Acad Dermatol* 1986;14:286-293
- 32) Department of Health (2003a) Investing in general practice: the new General Medical Services Contract. London: Department of Health.
- 33) Greer SL (2008) Devolution and divergence in UK health policies. *BMJ*, 337,a2616.
- 34) Department of Health (2007b) Shifting care closer to home: Care Closer to Home demonstration sites-report of the speciality subgroups. London: Department of Health.
- 35) Resnick SD, Hornung R, Konrad TR. A comparison of dermatologists and generalists. *Arch Dermatol* 1996;132:1047-1052
- 36) O'Cathain A, Brazier JE, Milner PC, Fall M. Cost effectiveness of minor surgery in general practice: a prospective comparison with hospital practice. *Br J of Gen Pract* 1992;42:13-17
- 37) Balkrishnan R, Camacho FT, Pearce DJ, Kulkarni AS, Spencer L, Fleischer AB Jr, Feldman SR. Factors affecting prescription of ultra-high

- potency topical corticosteroids in skin disease: an analysis of US national practice data. *J Drugs Dermatol*. 2005 Nov-Dec;4(6):699-706
- 38) Schofield JK, Adlard T, Gunn S (2007b). Dermatology follow-up caseload; national recommendations, local problems. *Br J of Dermatol*, 157 (Suppl.1),58
- 39) Altman D. *Practical Statistics for Medical Research*, London: Chapman & Hall, 1991.
- 40) Schofield JK, Fleming D, Grindlay D, Williams H. Skin conditions are the commonest new reason people present to general practitioners in England and Wales. *Br J Dermatol*. 2011 Jun 21. Doi10:1111/j.1365-2133.2011.10464.x.
- 41) Trends in Consultation Rates in General Practice 1995 to 2008, the NHS information centre. ic.nhs.uk
- 42) Verboom P, Hakkaart-Van Roijen L, Sturkenboom M, De Zeeuw R, Menke H, Rutten F. The cost of atopic dermatitis in the Netherlands: an international comparison. *Br J Dermatol* 2002;147:716-724
- 43) Chinn DJ, Poyner T, Sibley G. Randomised controlled trial of a single dermatology nurse consultation in primary care on the quality of life of children with atopic eczema. *Br J Dermatol*. 2002 Mar;146(3):432-9
- 44) Smoker A (1999). The role of the practice nurse in the care of people with skin conditions. *Brit J of Dermat Nurs*,3(2), 5-7
- 45) Cox NH, Bowman J (2000). An evaluation of educational requirements for community nurses treating dermatological patients. *Clin & Exp Dermat*,25,12-5
- 46) Ogden S, Benton EC, McElhorne K, Owen Cm (2006). Dermatology experience of nurse practitioners working in primary care. *Br J of Dermatol*, 155 (Suppl.1),52
- 47) Kernick D, Cox A, Powell R, Reinhold D, Sawkins J, Warin A (2000). A cost consequence study of the impact of a dermatology trained practice nurse on the quality of life of primary care patients with eczema and psoriasis. *Brit J of Gen Pract*,50,555-8

- 48) Chinn DJ, Poyner T, Sibley G (2002). Randomised controlled trial of a single dermatology nurse consultation in primary care on the quality of life of children with atopic eczema. *Br J of Dermatol*, 146,432-9
- 49) Edwards V (1997). Dermatology care and the practice nurse-a primary role. *Br J of Dermatol Nursing*, 1 (2),5-7.
- 50) Griffiths CE, Taylor H, Collins SI, Hobson JE, Collier PA, Chalmers RJ, Stewart EJ, Dey P. The impact of psoriasis guidelines on appropriateness of referral from primary to secondary care: a randomized controlled trial. *Br J Dermatol*. 2006 Aug;155(2):393-400.
- 51) Gillard SE. Finlay AY. Current management of psoriasis in the United Kingdom: patterns of prescribing and resource use in primary care. *Int J Clin Pract*. 2005 Nov;59(11):1260-7
- 52) Purdy S, Langston J, Tait L. Presentation and management of acne in primary care: a retrospective cohort study. *Br J Gen Pract*. 2003 Jul;53(492):525-9
- 53) Margolis CF, Ramundo ML. Acne management. Primary care physician or dermatologist? *Postgrad Med*. 1987 Dec;82(8):139-46
- 54) Stone MA, Redsell SA, Ling JT, Alastair D. Sharing patient data: competing demands of privacy, trust and research in primary care. *Br J Gen Pract* 2005 519;(55):783-789
- 55) Schers H, van den Hoogen H, Grol R, van den Bosch W. Continuity of information in general practice Patient views of confidentiality. *Scan J Prim Health Care* 2003;21:21-26
- 56) Barrett G, Cassell JA, Peacock JL, Coleman MP. National survey of British public's views on use of identifiable data by the National Cancer Registry. *BMJ* 2006 May 6;332(7549):1068-72
- 57) Wade D. Education and Debate : Ethics, audit, and research: all shades of grey. *BMJ* 2005 Feb 26;330(7489):468-71
- 58) Health and Social Care Act 2001
www.opsi.gov.uk/Acts/acts2001/ukpga_20010015_en_1
- 59) Protecting Patient Confidentiality 2002. www.scot.nhs.uk/csags

- 60) Fraser A. Privacy and the secondary use of data in health research in Scotland. *J Health Serv Res Policy*. 2003 Jul;8 Suppl 1:S1:12-6
- 61) Higgins J. The Patient Information Advisory Group and the use of patient-identifiable data. *J Health Serv Res Policy*. 2003 Jul;8 Suppl 1:S1:8-11
- 62) Donohoe MT, Kravitz RL, Wheeler DB, Chandra R, Chen A, Humphries BS. Reasons for outpatient referrals from generalists to specialists. *JGIM* 1999 May;14(5):281-286
- 63) Marton KI, Sox HC Jr, Wasson J, Duisenberg CE. The clinical value of the upper gastrointestinal tract roentgenogram series. *Arch Intern Med*. 1998;13(Suppl):65. Abstract.
- 64) Earwicker SC, Whynes DK. General practitioners' referral thresholds and choices of referral destination: an experimental study. *Health Econ*. 1998 Dec;7(8):711-22
- 65) Smethurst DP, Williams HC (2002). Self-regulation in hospital waiting lists. *Journal of Royal Soc of Med*,95,287-9.
- 66) Roland M, Morris R. Are referrals by general practitioners influenced by the availability of consultants? *BMJ*. 1998;297(6648):599-600
- 67) Chen FM. Dermatology referrals in an academic family medicine clinic. *South Med J* 2001 May;94(5):475-7
- 68) Roland Mo, Green CA, Roberts SO (1991). Should general practitioners refer more patients to hospital? *J of Roy Soc of Med*, 84,403-4.
- 69) Reynolds GA, Chitnis JG, Roland MO. General practitioners outpatient referrals: do good doctors refer more patients to hospital? *Br Med J*. 1991;302:1250-2
- 70) Sullivan FM, Hoare T, Gilmour H. Outpatient clinic referrals and their outcome. *Br J Gen Pract*. 1992 Mar;42(356):11-5
- 71) Sladden MJ, Graham-Brown RA. How many GP referrals to dermatology outpatients are really necessary? *J R Soc Med*. 1989 Jun;82(6):347-8
- 72) Armstrong D, Fry J, Armstrong P. Doctors' perception of pressure from patients for referral. *BMJ*. 1991;303(6786):1186-8

- 73) Hill GM, Sowden JM, Lister RK, Logan RA, Finlay AY. Dermatology outpatient case-mix survey for all Welsh trusts, 2007. *Br J Dermatol*. 2009 Aug 3. Epub ahead of print
- 74) Van Suijlekom-Smit LWA, Buijnzeels MA, Van der Velden J, Visser HKA, Dokter HJ. Children referred for specialist care: a nationwide study in Dutch general practice. *Br J Gen Pract* Jan 1997 47(414):19-23
- 75) Zimmer L, Schommer A, Augustin M. Health services research in dermatology-current update and perspectives. *J Dtsch Dermatol Ges*. 2007 Jun;5(6):482-7
- 76) Dupont C. Quality of referral letters. *Lancet* 2002 May 11;359(9318):1701
- 77) www.bad.org.uk/Portals/Bad/Clinical%20Services Demand management and follow up ratios in Dermatology Aug 2007
- 78) Gassia V, Grognard C, Michaud T. Esthetic consultation within the activity of the dermatologist. *Am Dermatol Venerol*. 2009 Oct;136 Suppl 6:S390-2
- 79) Matarasso SL. Introduction to cosmetic surgery. *Semin Dermatol*, 1984 Mar;13(1):60-3
- 80) Department of Health (2007c) Implementing care closer to home: convenient quality care for patients (in three parts). London: Department of Health
- 81) Healy R, Thornton K, Orteu CH, Rustin MHA, Jones J, Leslie T, Hill V, Robles WS, McBride S, Seaton E. Responding to the commissioners: development of an integrated, high-quality, consultant-led community dermatology service. *Br J Dermatol* 2009 161;Suppl 3-4 (Abst)
- 82) Schofield JK, Ogden L, West K, Yeates A, Blanshard M, Evans N. Specialist provision of dermatology clinical assessment and treatment services (CATS): 12 months data. *Br J Dermatol* 2009 161;Suppl 3-4 (Abst.)
- 83) DH Long Term Conditions Care Group
<http://www.bad.org.uk/Portals/Bad/Official%20Responses/Service%20models%20fig%20and%20evidence%202.doc>

- 84) BAD (2008) Guidance for Commissioning Dermatology Services
<http://www.bad.org.uk/Portals/Bad/Clinical%20Services/BAD%20Comisioning%20Guidance.pdf>
- 85) NHS Confederation: Clinical Response to the downturn (2010)
http://www.bad.org.uk/Portals/Bad/Official%20Responses/Clinicalresponsestodownturn_full_Dec2010.pdf
- 86) Coast J, Salisbury C, de Berker D, Noble A, Hornocke S, Peters TJ, Flynn TN. Preferences for aspects of a dermatology consultation. *Br J Dermatol*. 2006 Aug;155(2):387-92
- 87) Lawrence C. General practitioners with a special interest in dermatology—the dermatologist’s perspective. *Clin Med*. 2003 Sep-Oct;3(5):440-2
- 88) Coast J, Noble S, Noble A, Horrocks S, Asim O, Peters TJ, Salisbury C. Economic evaluation of a general practitioner with special interests led dermatology service in primary care. *BMJ*. 2005 Dec 17;331(7530):1444-9
- 89) Salisbury C, Noble A, Horrocks S, Crosby Z, Harrison V, Coast J, de Berker D, Peters T. Evaluation of a general practitioner with special interest service for dermatology: randomised controlled trial. *BMJ*. 2005 Dec 17;331(7350):1441-6
- 90) Benton EC, Kerr OA, Fisher A, Fraser SJ, McCormack SKA, Tidman MJ (2008) The changing face of dermatological practice:25 years’ experience. *Br J of Dermatol*,159,413-8
- 91) Helbing I, Ferguson JE, McKenna M, Muston HL (2002). Audit of admissions to dermatology beds in Greater Manchester. *Clin & Exp Dermatol*, 27,519-22
- 92) Sowden JM, Lewis-Jones MS, Williams RB. The management of seborrhoeic keratoses by general practitioners, surgeons and dermatologists. *Br J Dermatol* 1998;139:348
- 93) Pariser RJ, Pariser DM. Primary care physicians’ errors in handling Cutaneous disorders. A prospective study. *J Am Acad Dermatol*. 1987 Aug;17(2 Pt 1):239-45

- 94) Ramsay DL, Fox AB. The ability of primary care physicians to recognise the common dermatoses. *Arch Dermatol* 1981;117:620-622
- 95) Solomon BA, Collins R, Silverberg NB, Glass AT. Quality of care: issue or oversight in health care reform? *J Am Acad Dermatol*. 1996;34(4):601-607
- 96) Federman D, Hogan D, Taylor R, Caralis P, Kirsner S. A comparison of diagnosis, evaluation, and treatment of patients with dermatological disorders. *J Am Acad Dermatol*. 1995;32(5 Pt 1):726-730
- 97) Cassileth BR, Clark WH, Lusk EJ, Frederick BE, Thompson CJ, Walsh WP. How well do physicians recognise melanoma and other problem lesions? *J Am Acad Dermatol*. 1986;14:555-560
- 98) Gerbert B, Maurer T, Berger T. Primary care physicians as gatekeepers in managed care: primary care physicians and dermatologists' skills at secondary prevention of skin cancer. *Arch Dermatol* 1996;132:1030-8
- 99) Porta N, San Juan J, Grasa MP, Simal E, Ara M, Qeral MA. Diagnostic agreement between primary care physicians and dermatologists in the health area of a referral hospital. *Actas Dermosifiliogr*. 2008 Apr;99(3):207-12.
- 100) Morrison A, O'Loughlin S, Powell F. Suspected skin malignancy: a comparison of diagnoses of family practitioners and dermatologists in 493 patients. *Int J of Dermatol* 2001;40:104-107
- 101) Kerr OA. A study of general practitioners' skin surgery in Ayrshire over the last 10 years. Abstract SDS meeting June 2009
- 102) Murchie P, Delaney EK, Thompson WD, Lee AJ. Excising basal cell carcinomas: comparing the performance of general practitioners, hospital skin specialists and other hospital specialists. *Clin Exp Dermatol*. 2008 Aug;33(5):565-71.
- 103) Goulding JM, Levine S, Blizard RA, Deroide F, Swale VJ. Dermatological surgery: a comparison of activity and outcomes in primary and secondary care. *Br J Dermatol*. 2009 Jul;161(1):110-4.

- 104) Rampen FHJ, Rumke P, Hart AAM. Patients and doctors delay in the diagnosis and treatment of cutaneous melanoma. *Europ J Surg Oncol.* 1989;15:143-148
- 105) Langley RGB, Sober AJ. Causes for the delay in diagnosis of melanoma. *Epidemiology, causes and prevention of skin diseases.* Blackwell Lon 1997 177-183
- 106) Weatherhead SC, Lawrence CM. Melanoma screening clinics: are we detecting more melanomas or reassuring the worried well? *Br J Dermatol.* 2006 Mar;154(3):539-41
- 107) Devereux C, Eedy DJ. An audit of the implementation of a policy of not accepting GP referrals of benign cosmetic lesions. *Br J Dermatol.* 2009 Jul;161:47
- 108) Tan E, Levell NJ, Garioch JJ (2007). The effect of a dermatology restricted-list upon the volume of referrals. *Clin & Exp Dermatol,* 32,114-5.
- 109) George S, Pockney P, Primrose J, Smith H, Little P, Kinley H, Kneebone R, Lowy A, Leppard B, Jayatilleke N, McCabe C (2008). A prospective randomised comparison of minor surgery in primary and secondary care. The MiSTIC trial. *Health Technology Assessment,*12,1-38
- 110) Courtenay M, Carey N (2007). A review of the impact and effectiveness of nurse-led care in dermatology. *Journal of Clinical Nursing,* 16, 122-8
- 111) Courtenay M, Carey N, Burke J. (2007). Independent extended nurse prescribing for patients with skin conditions: a national questionnaire survey. *Journal of Clinical Nursing,*16, 1247-55
- 112) Penzer R. (2000) Improving psoriasis care through a nurse-led service. *Community Nurse,*6,19.
- 113) Wong CSM, Sewell M, Yell J (2003). Nurse practitioners compare favourable with doctors in the treatment of eczema and psoriasis. *Br J of Dermatol,*149 (Suppl. 64), 4-5

- 114) Muller FM, McCullagh R, Fleming CJ (2004). Prospective evaluation of the impact of a nurse-led clinic on patients with psoriasis. *Br J of Dermat*, 151 (Suppl.68),51
- 115) Cork MJ, Britton J, Butler L, Young S, Murphy R, Keohane SG (2003). Comparison of patients knowledge, therapy utilization and severity of atopic eczema before and after explanation and demonstration of topical therapies by a specialist dermatology nurse. *Br J of Dermatol*,149,582-9
- 116) Gradwell C, Thomas KS, English JSC, Williams HC (2002). A randomised controlled trial of nurse follow up clinics: do they help patients and do they free up consultants time? *Br J of Dermatol*,147,513-7
- 117) McGrath EJ, Daniels J, Butcher M, Shaw MS. (2003) An innovation in nurse-led eczema clinics: the Plymouth model. *Br J of Dermatol*, 149 (Suppl.64),28
- 118) English J, Lawton S, Wildgust L, Tubb C, McWilliam J, Patel R, Haynes M. (2004). Community dermatology nurse management clinics. *Br J of Dermatol*, 151 (Suppl. 68),45.
- 119) McEvoy M. (2004) Support for our sponsors. *Dermatological Nursing*, 3,5-6
- 120) Godsell GA. (2005). The development of the nurse biopsy role. *Br J of Nursing*, 14,690-2
- 121) Elston GE, Jones R, Benjamin M, Bedlow A. (2004). Can nurses perform minor surgery as well as doctors? *Br J of Dermatol*, 151 (Suppl. 68), 21-2
- 122) Ramsay DL, Weary PE. Primary care dermatology: Whose role should it be? *J Am Acad Dermatol*. 1996;35:1005-8
- 123) Hainer BL. The dermatologist's role in primary care: A primary care physician's view. *J Am Acad Dermatol*. 1996;35:1009-11
- 124) Federman DG, Kirsner RS. Primary care in dermatology. *J Am Acad Dermatol*. 1997 Oct;37(4):668

- 125) Clark RAF, Rietschel RL. The cost of initiating appropriate therapy for skin diseases: a comparison of dermatologists and family physicians. *J Am Acad Dermatol.* 1983;9:787-96
- 126) Kerr OA, Walker J, Boohan M. General practitioners opinions regarding the need for training in dermatology at undergraduate and postgraduate levels. *Clin Exp Dermatol* 2006;31:132-3
- 127) Burge S. Teaching dermatology to medical students a survey of current practice in the U.K. *Br J Dermatol* 2002;146:295-303
- 128) Hansra NK, O'Sullivan P, Chen CL, Berger TG. Medical school dermatology curriculum: are we adequately preparing primary care physicians. *J Am Acad Dermatol.* 2009 Jul;61(1):23-29
- 129) Higgins EM, Fuller LC, du Vivier AW, Tovey D. GP training in dermatology. *Br J Gen Pract.*1997 Sep;47(422):594
- 130) McCarthy GM, Lamb GC, Russell TJ, Young MJ. Primary care-based dermatology practice: internists need more training. *J Gen Intern Med.*1997 Jan-Feb;6(1):52-6
- 131) Schofield JK, Adlard TP, Heatley P, Gunn S (2003). A study of the dermatology knowledge of general practitioner (GP) registrars: implications for GP training programmes. *Br J of Dermatol*,149(Suppl. 64),33.
- 132) Hartmann AC, Cruz PD Jr. Interactive mechanisms for teaching dermatology to medical students. *Arch Dermatol* 1998 Jun;134(6):725-8
- 133) Parsell G, Bligh J. Recent perspectives on clinical teaching. *Med Educ* 2001 Apr;35(4):409-14
- 134) Davies E, Burge S. Audit of dermatological content of U.K. undergraduate curricula. *Br J Dermatol.* 2009 May;160(5):999-1005
- 135) British Association of Dermatologists (2006a) *Dermatology in the undergraduate medical curriculum: recommendations of the British Association of Dermatologists.*
- 136) Davies E, Burge S. (2009) Audit of dermatological content of U.K. undergraduate curricula. *Br J of Dermatol*, 160,999-1005

- 137) Chiang Y, Tan KT, Chiang YN, Griffiths CEM, Burge SM. (2008). Undergraduate dermatology education: a survey of UK medical students. *Br J of Dermatol*,159 (Suppl.1),1.
- 138) Lynch FW. Goals of undergraduate teaching in dermatology. *Arch Dermatol*. 1965 Apr;91(4):298-302
- 139) Branch WT Jr, Collins M, Wintroub BU. Dermatological practice: implications for a primary care residency curriculum. *J Med Educ*. 1983 Feb;58(2):136-42
- 140) Branch WT Jr, Wintroub BU. Dermatological training for non-dermatologists. *J Am Acad Dermatol*. 1983 Aug;9(2):281-3
- 141) Hay RJ. Undergraduate training in dermatology and general practice. *Br J Dermatol*. 1993 Sep;129(3):356
- 142) Kelly DR, Murray TS. Twenty years of vocational training in West of Scotland. *BMJ* 1991;5:28-30
- 143) Royal College of General Practitioners (2005) Training curriculum: submission to Postgraduate Medical Education and Training Board. London: Royal College of General Practitioners.
- 144) Naldi L, Manfrini R, Martin L, Deligant C, Dri P. Feasibility of a web-based continuing medical education program in dermatology: the DermoFAD experience in Italy. *Dermatology*. 2006;213(1):6-11
- 145) Russell SS. An overview of adult-learning processes. *Urol Nurs*. 2006 Oct;26(5):349-52,370
- 146) Marks R. British Association of University Teachers of Dermatology. *Br J Dermatol*. 1992 Feb;126(2):210-2
- 147) Department of Health (2007) Guidance and Competencies for the Provision of Services using GPs with Special interest (GPSWIs): Dermatology and Skin Surgery. London: Department of Health
- 148) Schofield JK, Irvine A, Jackson S, Adlard TP, Gunn S, Evans N (2005) General practitioners with a special interest (GPSWI) in dermatology: results of an audit against Department of Health (DH) guidance. *Br J Dermatol*. 153(Suppl 1):1.

- 149) Department of Health (2006) *Our Health, Our Care, Our Say: A New direction for Community Services (Cm 6737)*. London HMSO.
- 150) Improving outcomes for people with skin tumours including melanoma NICE guidance Feb 2006
- 151) Schuttelaar ML, Vermeulen KM, Drukker N, Coenraads PJ. A randomized controlled trial in children with eczema: nurse practitioner vs dermatologist. *Br J Dermatol*. 2009 Sep 8 Epub ahead of print
- 152) Cox NH, Bowman J. An evaluation of educational requirements for community nurses treating dermatological patients. *Clin Exp Dermatol* 2000;25:12-15
- 153) Courtney M, Carey N, Burke J. Independent extended nurse prescribing for patients with skin conditions: a national questionnaire survey. *J Clin Nurs*. 2007 Jul;16(7):1247-55.
- 154) Smethurst DP, Williams HC. Self-regulation in hospital waiting lists. *J R Soc Med*. 2002 Jun;95(6):287-9
- 155) Finch TL, Mair FS, May CR. Teledermatology in the UK: lessons in service innovation. *Br J Dermatol*. 2007 Mar;156(3):521-7
- 156) Warshaw EM, Lederie FA, Grill JP, Gravely AA, Bangerter AK, Fortier LA, Bohjanen KA, Chen K, Lee PK, Rabinovitz HS, Johr RH, Kaye VN, Bowers S, Wenner R, Askari SK, Kedrowski DA, Nelson DB. Accuracy of teledermatology for pigmented lesions. *J Am Acad Dermatol*. 2009 Nov;61(5):735-65
- 157) Warshaw EM, Lederie FA, Grill JP, Gravely AA, Bangerter AK, Fortier LA, Bohjanen KA, Chen K, Lee PK, Rabinovitz HS, Johr RH, Kaye VN, Bowers S, Wenner R, Askari SK, Kedrowski DA, Nelson DB. Accuracy of teledermatology for non-pigmented lesions. *J Am Acad Dermatol*. 2009 Apr;60(4):579-88
- 158) Position Statement on Teledermatology: Scottish Dermatology Society. 2009 www.sds.org.uk
- 159) Ebner C, Wurn EM, Binder B, Kittler H, Lozzi GP, Massone C, Gabler G, Hofmann-Wellenhof R, Soyer HP. Mobile teledermatology: a

- feasibility study of 58 subjects using mobile phones. *J Telemed Telecare*. 2008;14(1):2-7
- 160) Schreier G, Hayn D, Kastner P, Koller S, Salmhofer W, Hofmann-Wellenhoff R. A mobile-phone based teledermatology system to support self-management of patients suffering from psoriasis. *Conf Proc IEEE Eng Med Biol Soc*. 2008;2008:5338-41
- 161) Moore EJ, Williams A, Manias E, Varigos G, Donath S. Eczema workshops reduce severity of childhood atopic eczema. *Australas J Dermatol*. 2009 May;50(2):100-6
- 162) Courtenay M, Carey N. Nurse-led care in dermatology: a review of the literature. *Br J Dermatol*. 2006 Jan;154(1):1-6
- 163) Ersser SJ, Lattimer V, Surridge H, Brooke S. An analysis of the skin care patient mix attending a primary care-based nurse-led NHS Walk-in Centre. *Br J Dermatol*. 2005 Nov;153(5):992-6.
- 164) Hill VA, Wong E, Hart CJ. General Practitioner referral guidelines for dermatology do they improve the quality of the referrals? *Clin Exp Dermatol* 2000;25:371-37
- 165) BAD Official Press Release. Dermatologists offer best advice on skin
15/02/07

APPENDICES

- 1 Individual practice information
- 2 Dermatological diagnostic codes
- 3 Access database
- 4 Consultant information recorded on the frequent attendees
- 5 GP information leaflet (Primary care study)
- 6 Patient consent form (Primary care study)
- 7 Patient information leaflet and consent form for adult recurrent attendees (Primary care study)
- 8 Patient information leaflet and consent form for children or adults with disabilities (Primary care study)
- 9 Individual practice data
- 10 Form used to record secondary care data
- 11 Dermatological diagnosis and doctor codes (Secondary care study)
- 12 Royal College of General Practitioners (RCGP) Curriculum statement 15.10 Skin Problems (2007)
- 13 Pilot questionnaire for general practitioners to ascertain their training in dermatology at undergraduate and postgraduate levels
- 14 Revised questionnaire for general practitioners to ascertain their training in dermatology at undergraduate and postgraduate levels

Appendix 1

Practices selected

Edinburgh

Total patient population:	492,963
Target sample size (10%):	49,296
Actual sample size (11.7%):	57,742
Number of practices:	7

West Lothian

Total patient population:	164,634
Target sample size (10%):	16,463
Actual sample size (11.5%):	18,929
Number of practices:	2

Mid-Lothian

Total patient population:	83,984
Target sample size (10%):	8,398
Actual sample size (15.4%):	13,011

Number of practices: 2

East Lothian

Total patient population: 94,166

Target sample size (10%): 9,417

Actual sample size (15.9%): 14,939

Number of practices: 2

EDINBURGH

- E1 V Dalkeith Road Medical Practice, 145 Dalkeith Road Edinburgh EH16 5HQ
- E2 R Colinton & Oxfords Surgery Craiglockhart Surgery, 161 Colinton Road Edinburgh EH14 1BE & 1 Oxfords Path Edinburgh EH13 9LX
- E3 R Blackhall Medical Centre, 51 Hillhouse Road Edinburgh EH4 3TH
- E4 R The Long House Surgery, 73 East Trinity Road Edinburgh EH5 3EL
- E5 R Liberton Medical Group, 65 Liberton Gardens, Edinburgh EH16 6JT
- E6 V Cramond Medical Practice, 2 Cramond Glebe Road Edinburgh EH4 6NS
- E7 R Mayfield & Portobello Surgeries Conan Doyle Medical Centre, 4 Nether Liberton Lane Edinburgh EH16 5TY & 265 Portobello High Street EH15 2AW

WEST LOTHIAN

- WL1 R Strathbrock Partnership Centre, Broxburn West Lothian EH52 5LH
- WL2 V Howden Health Centre, Howden Road West Livingston EH54 6TP

MID LOTHIAN

- ML1 V The Robertson Medical Centre, Dalkeith Medical Practice, 85 Newton Church Road Danderhall EH22 1LX
- ML2 V Strathesk Medical Group, 109-111 High Street Bonnyrigg EH19 2ET & Sutherland House 209 Mayburn Avenue Loanhead EH20 9ER

EAST LOTHIAN

- EL1 V The Medical Centre, Queens Road Dunbar EH42 1EE
- EL2 V East Linton Surgery, Station Road East Linton East Lothian EH40 3DP

R= Randomly chosen practice

V= Additional chosen practice

For each of the four areas, we can compare the sample selected against the unselected portion of the patient population in terms of (a) age distribution and (b) receipt of deprivation payments. The Department of Health introduced a new deprivation payments system for general practitioners (GPs) on 1 April 1999. Following a three-year phasing-in process, registered patients will attract deprivation payments based on the underprivileged area (UPA) score of their enumeration district (ED) of residence. These comparisons are shown in the following four tables:

EDINBURGH

	% under 65	% 65 to 74	% 75 and over	% deprivation payments
<i>Sample</i>	84.1	7.6	8.3	8.0
Unselected	86.2	7.3	6.5	11.6

WEST LoTHIAN

	% under 65	% 65 to 74	% 75 and over	% deprivation payments
<i>Sample</i>	90.0	6.4	3.7	4.1
Unselected	88.5	6.9	4.6	3.6

MID LoTHIAN

	% under 65	% 65 to 74	% 75 and over	% deprivation payments
<i>Sample</i>	84.5	9.6	5.8	0.2
Unselected	85.3	8.4	6.3	6.2

EAST LoTHIAN

	% under 65	% 65 to 74	% 75 and over	% deprivation payments
<i>Sample</i>	83.9	8.4	7.6	0.1
Unselected	82.7	9.2	8.1	3.4

The level of deprivation payments is based on the postcodes of the patients registered with the practice. If our initial random selection had been fully accepted, we would have not been assured that, at practice level, the deprivation profile of the selected practices would have matched that of the unselected practices. More importantly at a patient level, we cannot assume that the patients actually consulting are representative in terms of deprivation payments of their respective practices.

Appendix 2

Dermatological diagnostic codes

- 1 Acne Vulgaris
- 2 Acne Rosacea
- 3 Eczema
- 4 Psoriasis, palmoplantar psoriasis, pityriasis rubra pilaris
- 5 Lichen planus
- 6 Viral warts
- 7 Seborrhoeic keratosis
- 8 Benign pigmented naevi
- 9 Other benign tumours
- 10 Actinic keratosis
- 11 Intra-epidermal carcinoma
- 12 Basal cell carcinoma
- 13 Squamous cell carcinoma
- 14 Malignant melanoma
- 15 Other malignant tumours
- 16 Infection
- 17 Infestation
- 18 Reactive drug eruption, erythema multiforme, photosensitivity
- 19 Urticaria
- 20 Immunobullous skin disorders
- 21 Connective tissue disorders
- 22 Genodermatoses
- 23 Hair disorders
- 24 Nail disorders
- 25 Venous/Arterial disease including ulcers
- 26 Miscellaneous
- 27 No diagnosis offered

Appendix 3

Access database

GP PRACTICE SURVEY - 2004	
GP Practice:	<input type="text"/>
Doctor Code:	<input type="text"/>
Date of Birth:	<input type="text"/>
Sex:	<input type="text"/>
Diagnosis:	Seborrhoeic keratosis
Patient :	<input type="text"/>
Number of consultations/Yr:	<input type="text"/>
Treatment:	<input checked="" type="checkbox"/> Surgery <input type="checkbox"/> Cryo <input type="checkbox"/> Dressings
Oral:	<input type="checkbox"/> Antibiotics <input type="checkbox"/> Antihistamine <input checked="" type="checkbox"/> Antifungal <input type="checkbox"/> Steroids <input type="checkbox"/> Immunosupp <input type="checkbox"/> Neotigason <input type="checkbox"/> Methotrexate <input type="checkbox"/> Cyclosporin <input type="checkbox"/> Roaccutane <input type="checkbox"/> Epogam <input type="checkbox"/> Oral contraceptive pill Other: <input type="text"/>
Topical:	<input type="checkbox"/> Steroid <input type="checkbox"/> Emollient <input type="checkbox"/> Antibiotic <input type="checkbox"/> Antifungal <input type="checkbox"/> Antiscabetic <input type="checkbox"/> Topical Antiviral <input type="checkbox"/> Psoriatic <input type="checkbox"/> Tar <input type="checkbox"/> Dithranol <input type="checkbox"/> Vitamin D <input type="checkbox"/> Salicylic acid <input type="checkbox"/> Acne <input type="checkbox"/> Benzoylperoxide <input type="checkbox"/> Antibiotics <input type="checkbox"/> Retinoids Other: <input type="text"/> <input type="checkbox"/> Desloughing agents <input type="checkbox"/> Local anaesthetics/antipruritics <input type="checkbox"/> Barrier preparations <input type="checkbox"/> Ichthammol <input type="checkbox"/> Sunscreens <input type="checkbox"/> Antiperspirants <input type="checkbox"/> Skin cleansing preparations <input type="checkbox"/> Bath additives <input type="checkbox"/> Efudix <input type="checkbox"/> Solaraze Topical Other: <input type="text"/>
Shampoo:	<input type="checkbox"/> Tar <input type="checkbox"/> Steroid <input type="checkbox"/> Antiyeast <input type="checkbox"/> Regaine <input type="checkbox"/> Salicylic acid <input type="checkbox"/> Propecia
Warts:	<input type="checkbox"/> Salicylic <input type="checkbox"/> Formaldehyde <input type="checkbox"/> Glutaraldehyde <input type="checkbox"/> Imiquimod <input type="checkbox"/> Podophyllin
Duration of treatment (weeks):	<input type="text"/>
Referral:	<input type="text"/>
Reason for Referral:	<input type="checkbox"/> Unsure of diagnosis <input type="checkbox"/> Pt pressure <input type="checkbox"/> Recalcitrant disease <input type="checkbox"/> Hospital Rx <input type="checkbox"/> Unrecorded
Investigations:	<input type="checkbox"/> Bloods <input type="checkbox"/> Mycology <input type="checkbox"/> Bacteriology <input type="checkbox"/> Urinalysis <input type="checkbox"/> X-ray <input checked="" type="checkbox"/> Biopsy
Consultant Diagnosis:	<input type="text"/>
Treatment:	<input type="text"/>
Additional Primary Care treatment possible:	<input type="text"/>
Comments on treatment:	<input type="text"/>
Referral by GP:	<input type="text"/>
Comments on referral :	<input type="text"/>
Referral recommended by Consultant:	<input type="text"/>
Reason:	<input type="text"/>

Exit

Appendix 4

Information recorded by consultant from recurrent attendees

Consultant diagnosis

Treatment assessment e.g. appropriate, sub-optimal

Other possible primary care options Y/N

Hospital referral appropriate Y/N

If yes, was it initiated by GP? Y/N

Appendix 5

GP Information Leaflet (March 2004)

During the past twenty years pressures on dermatology services have increased across the UK with consequential increase in waiting times for many patients to attend for a specialist opinion.

In the south east of Scotland we have recorded a steady rise of 3% annum in referrals to our department between 1980 and 2000 and an increase in routine outpatient waiting times between 5 and 8 fold.

Demands on primary care physicians have also increased with fewer hospital beds, early transfer of patients back from secondary care and of course increasing bureaucratic demands.

What then should be our strategy for meeting this demand?

Expansion in consultant numbers has occurred but that has not solved the problem; across the UK 10% of consultant posts remain unfilled. The service can no longer rely on using trainees as work-horses, and indeed it is inappropriate to expect this to happen at the same time as providing acceptable standards of training and supervision.

The aims of this study are to define the burden of dermatology in general practice including the proportion of all patients seen over a two-week frame who present with a dermatology problem. We do not wish to interfere with the normal process of consultations and all we ask is to put a mark on your practice sheet if you see a patients who consults with a dermatology problem.

An independent researcher (Dr Olga Kerr, Specialist Registrar in Dermatology) will extract information about their dermatological problem from their case notes about the diagnosis, treatment and total number of visits for that problem over a one year period.

Any patient attending on 3 or more occasions will be offered an appointment with a consultant dermatologist, Dr Claire Benton, who will assess if there are any other options either in primary care or secondary care for that patient. All such information will be transmitted back to you as their main medical carer.

All patients and doctors will be coded for anonymity.

We thank you for your participation in the study.

Appendix 6

Patient consent form

University Hospitals Division

NHS Lothian

PATIENT CONSENT

Name

Address

Date of birth

I am willing to having my medical records examined by a researcher (hospital doctor)

I understand that any information extracted from my records would be entirely confidential and that this information is used strictly for recording numbers of patients affected by individual diseases. It would not have any implications for me as a patient.

I consent to have my medical records examined by a hospital doctor.

Signature

Date

Please give this from to your GP when you see him/her

Many thanks for your participation

GP to complete

Cutaneous problem dealt with in consultation?

Yes/No

Appendix 7

Patient information leaflet and consent forms for adult recurrent attendees

Dr A G Reid & Partners
265 Portobello High Street
Edinburgh
EH15 2AW

The practice has participated in a study with the local dermatology department studying skin problems in general practice.

You have been identified during this study as you have consulted the practice on several occasions this year with a skin problem. We would like to take this opportunity to invite you to an appointment with a consultant dermatologist who may be able to offer your GP further advice with regards to your dermatology problem.

Please note that if you have already been referred to dermatology the consultant would still be interested in seeing you.

Please find enclosed a patient information leaflet which outlines the study in more detail and a patient consent form which you should bring with you signed on the day of your appointment.

We wish to be as flexible as possible and could offer the following appointments. The appointment will last for approx 15 mins.

Wed 11th Aug pm 3-5 pm or Thurs 12th Aug 9-5pm.

Please confirm with Dr Olga Kerr (Specialist Registrar Dermatology) what time would be suitable for you

Tel 0131 5362026

If neither of these times are suitable but you would still like the opportunity to see the consultant please phone and we will try and accommodate you.

PLEASE NOTE THESE APPOINTMENTS WILL BE IN YOUR OWN GPS SURGERY

Yours sincerely

Patient information leaflet

We are conducting a joint study between General Practitioners and hospital-based dermatologists in Edinburgh and the Lothian region. The aims of this study are to assess what proportion of time your General Practitioner actually spends seeing patients with skin disorders and whether there are any ways of improving access to the most appropriate dermatology care for patients like yourself.

You have been selected to participate as you have consulted your GP on a number of occasions over the past year about a skin complaint. We would therefore like to invite you to take part in this study. If you decide not to, or should you change your mind at any stage, this will not affect the treatment you receive from your own General Practitioner.

You will be invited to attend for an appointment in your General Practitioner's surgery with a consultant dermatologist who will assess your skin condition, and if necessary, give advice or suggestions to your GP who will of course remain in charge of your treatment and prescriptions at all times.

All details of your problems will remain entirely confidential at all times and any information recorded will be strictly coded so that you cannot be identified.

Any concerns or complaints you might have about your management or treatment in relation to this study would continue to be dealt with through the normal mechanism for NHS complaints.

As a result of this data collection we hope to be in a better position to plan improvements to the dermatology service in Edinburgh and the Lothian region.

Please take time to consider whether or not you wish to participate in this study which has been approved by the local Ethics committee and is funded by NHS Lothian.

The researchers are

Dr Olga Kerr, Specialist Registrar in Dermatology, Edinburgh Royal Infirmary

Dr E. Claire Benton, Consultant Dermatologist, Edinburgh Royal Infirmary
(01315362411)

Dr Michael J Tidman Consultant Dermatologist, Edinburgh Royal Infirmary

Independent Advisor: Dr R D Aldridge, Clinical Director for Dermatology,
Edinburgh Royal Infirmary

UNIVERSITY HOSPITALS DIVISION

NHS Lothian

PATIENT CONSENT FORM

Name

Address

Date of birth

Contact telephone number

I have read the information leaflet and understand the purpose of this study Yes/No

I have had all my questions satisfactorily answered by Dr Yes/No

I am aware that I may refuse to participate and I will not be disadvantaged in any way if I decided at any stage during the study that I no longer wish to continue
Yes/No

I am willing to participate and would like to take up the offer of an appointment to see a consultant dermatologist at my General Practitioners surgery
Yes/No

Signature

Date

Appendix 8

Patient information and consent forms for children or patients with a disability

We are conducting a joint study between General Practitioners and hospital-based dermatologists in Edinburgh and the Lothian region. The aims of this study are to assess what proportion of time your General Practitioner actually spends on seeing patients with skin disorders and whether there are any ways of improving access to the most appropriate dermatology care for patients such as your child.

Your child has been selected to participate as he/she has consulted your GP on a number of occasions over the past year about a skin complaint. We would therefore like to invite your child to take part in this study. If you decide not to participate, or should you change your mind at any stage, this will not affect the treatment your child receive from you own General Practitioner.

You will be invited to attend for an appointment with your son/daughter in your General Practitioner's surgery with a consultant dermatologist who will assess their skin condition, and if necessary, give advice or suggestions to your GP who will of course remain in charge of treatment and prescriptions at all times.

All details of your child's skin problems will remain entirely confidential at all times and any information recorded will be strictly coded so that they cannot be identified. Any concerns or complaints you might have about their management or treatment in relation to this study would continue to be dealt with through the normal mechanism for NHS complaints.

As a result of this data collection we hope to be in a better position to plan improvements to the dermatology service in Edinburgh and the Lothian region.

Please take time to consider whether or not you wish your child to participate in this study which has been approved by the local Ethics committee and is funded by NHS Lothian.

The researchers are

Dr Olga Kerr, Specialist Registrar in Dermatology, Edinburgh Royal Infirmary

Dr E. Claire Benton, Consultant Dermatologist, Edinburgh Royal Infirmary
(01315362411)

Dr Michael J Tidman Consultant Dermatologist, Edinburgh Royal Infirmary

Independent Advisor: Dr R D Aldridge, Clinical Director for Dermatology,
Edinburgh Royal Infirmary

PATIENT CONSENT FORM
(Child or patient with disability)

Name Address
Date of birth

I have read the information leaflet provided and understand the purpose of this study
I have had all my questions answered by Dr Yes/No

I am aware that I may refuse to allow my child to participate and he/she will not be
disadvantaged in any way if he/she decides at any stage during the study that they no
longer wish to continue Yes/No

I agree to allow my child to participate and would like to take up the offer of an
appointment to see a consultant dermatologist at their General Practitioners' surgery
Yes/No

Signature of parent or guardian

Appendix 9

Table part 1:

	E7	E2	EL1	WL1	E1	E3	ML1
Data collection	28/06/04 - 09/07/04	04/10/04 - 15/10/04	12/07/04 - 24/07/04	15/08/04 - 27/08/04	23/08/04 - 03/09/04	15/11/04 - 26/11/04	02/12/08 - 13/12/08
Dermatological workload %	16	11	8.2	3	7.2	10.4	18.8
F M	1.2	0.9	0.7	1.75	1.6	1	3
Eczema	24.7	17	43.9	0	41.7	10.7	8.3
Infection	21.2	25	12.2	18.2	8.3	25.3	50
Miscellaneous	9.1	9.1	7.3	9.1	8.3	1.3	0
Viral warts	8.4	4.5	0	0	12.5	5.3	0
No diagnosis	7.3	10.2	2.4	18.2	8.3	16	8.3
Acne vulgaris	6	5.7	2.4	0	0	8	16.7
Benign tumours	5.4	4.5	4.9	9.1	4.2	8	0
Acne rosacea	3	0	2.4	0	4.2	0	0
Actinic keratosis	3	3.4	0	9.1	4.2	2.7	0
Psoriasis	2.4	9.1	7.3	0	4.2	0.027	8.3
Urticaria	2.4	2.3	4.9	0	4.2	0	0
Benign naevi	1.8	0	4.9	0	8.3	5.3	0
Seborrhoeic keratosis	1.8	3.4	2.4	9.1	0	6.7	0
Melanoma	1.2	2.3	0	0	0	0	0
Squamous cell carcinoma	1.2	0	0	0	0	1.3	0
Infestation	0.6	1.1	0	9.1	0	0	0
Nail disorders	0.6	1.1	0	0	0	0	0
Hair problems	0	1.1	0	0	0	1.3	0
Intra-epidermal carcinoma	0	1.1	0	0	0	0	0
Lichen planus	0	1.1	0	0	0	0	0
Drug eruption	0	1.1	2.4	9.1	0	4	0
Other malignant tumours	0	0	2.4	0	0	0	0

Table part 2:

	E4	EL2	E5	ML2	WL2	E6
Data collection	17/01/05-28/01/05	18/04/05-29/04/05	02/05/05-13/05/05	16/05/05-27/05/05	23/05/05-03/06/05	30/05/05-10/06/05
Dermatological workload %	4.4	5.8	13	6.7	3.7	4.6
F M	0.83	1	1.5	2.1	1.3	0.7
Eczema	34.4	42.9	24.7	13.5	38.5	18.2
Infection	12.5	0.286	12.3	18.9	25.6	18.2
Miscellaneous	6.3	0	4.9	10.8	12.8	0
Viral warts	3.1	0	8.6	0	0	0
No diagnosis	12.5	0	2.5	13.5	5.1	3
Acne vulgaris	6.3	0	2.5	2.7	2.6	9.1
Benign tumours	9.4	7.1	8.6	13.5	0	3
Acne rosacea	0	0	0	0	0	3
Actinic keratosis	3.1	0	1.2	2.7	0	3
Psoriasis	0	0	8.6	5.4	0	9.1
Urticaria	6.3	0	0	5.4	2.6	6.1
Benign naevi	0	0	3.7	5.4	0	3
Seborrhoeic keratosis	0	7.1	9.9	2.7	0	9.1
Melanoma	0	0	0	0	0	0
Squamous cell carcinoma	0	0	1.2	0	0	0
Infestation	0	0	6.2	0	10.3	0
Nail disorders	0	0	0	2.7	0	0
Hair problems	3.1	0	2.5	0	0	3
Intra-epidermal carcinoma	0	0	0	2.7	0	0
Lichen planus	0	0	0	0	0	6.1
Drug eruption	0	7.1	1.2	0	2.6	3
Other malignant tumours	0	0	0	0	0	3

Appendix 10 Secondary care data form

S.E.Scotland Dermatology Audit 2005
please keep within the boxes, using a black pen, thank you.

Q1 Date of clinic: / / 11 / 2005

New or Review patient
IF NEW patient
 1. date of referral letter:
 D D / M M / Y Y Y Y
 / /

2. Source: GP Other

Q2 Clinic location:

<input type="checkbox"/> RIE	<input type="checkbox"/> St. John's	<input type="checkbox"/> Kirkcaldy
<input type="checkbox"/> BGH	<input type="checkbox"/> Roodlands	<input type="checkbox"/> Dunfermline
<input type="checkbox"/> WGH	<input type="checkbox"/> RHSC	<input type="checkbox"/> Other-Fife
<input type="checkbox"/> Private pt.	<input type="checkbox"/> MRS	<input type="checkbox"/> Wards-Fife
<input type="checkbox"/> Domiciliary	<input type="checkbox"/> Other	

Q3 Patient details (sticker):

CHI or Unit number:

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

DoB D D / M M / Y Y Y Y
 / /

Sex
 M F

Doctor's own code no.

GP Diagnosis:

Dr Diagnosis

admin. codes

<input type="text"/>
<input type="text"/>

Q4 Reason for Referral
cross one only

unsure of diagnosis

recalcitrant disease

patient request

unrecorded

Q5 Investigations

Diagnostic biopsy

Bloods

Microbiol./ Myco

Patch tests

Other

Q6 Treatment

excision C&C

other minor procedure

cryo dressings

phototherapy

if more than 1, enter as 1,2, 3 etc

Q7 Disposal

Discharge Review (+ give reason in Q8)

Referral to other specialty Waiting List ward

Q8 Reason, if disposal='Review'

Malignant disease

Drug monitoring

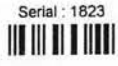
Disease monitoring

Diagnostic process

Ongoing treatment

Patient request

Please do not photocopy this form -
 phone 0131-536-2411 (Dr Benton's secretary) or
 Dr. Kerr 0131-536-2056 for more copies



Appendix 11 Codes for dermatological diagnosis

Workload study 1st-30th November 2005

- 1) Acne
- 2) Actinic keratosis
- 3) Basal cell carcinoma
- 4) Connective tissue disorder (Discoid/ subacute Le, Jessners, morphea, scleroderma, dermatomyositis, lichen sclerosus)
- 5) Dermatitis atopic
- 6) Dermatitis other
- 7) Genodermatoses
- 8) Hair disorders
- 9) Immunobullous (DH, pemphigoid, pemphigus, pemphigoid gestationis)
- 10) Infections (excluding viral warts, including fungal nails)
- 11) Infestations
- 12) Intra-epidermal carcinoma (Bowens)
- 13) Lymphoma/MF/pseudolymphoma
- 14) Malignant melanoma/lentigo maligna
- 15) Miscellaneous including PLE and LP
- 16) Nail disorders (excluding fungal infection)
- 17) Other benign tumours
- 18) Other malignant tumours
- 19) Pigmented naevi
- 20) Psoriasis/PPP/PRP
- 21) Reactive (drug eruptions vasculitis, EM, Sweets, pyoderma gangrenosum, GVHD)
- 22) Rosacea
- 23) Seborrhoeic warts
- 24) Squamous cell carcinoma
- 25) Urticaria and angioedema
- 26) Venous/arterial ulcers
- 27) Viral warts

Appendix 12

The curriculum document entitled “Skin Problems” is one on a series of curriculum statements produced by the RCGP for general practitioners in training. It describes the rationale for the curriculum statement and the learning outcomes. It also includes information about further reading and a section entitled “promoting learning about skin problems”. Within the section entitled “Learning Outcomes” are details of the required knowledge base and this is reproduced below.

The knowledge base

Symptoms:

Key issues in the diagnosis of skin problems will be eliciting the appropriate signs and symptoms and subsequent investigation and/or referral of people presenting with:

- Rashes
- Hair loss
- A disorder of their nails
- Itch
- Pigmented skin lesions
- Signs of infection of the skin
- Bruising or purpura
- Lumps in and under the skin
- Photosensitivity and the red face

Common and/or important skin conditions:

- Eczema
- Psoriasis
- Generalised pruritus
- Urticaria and vasculitis

- Acne and rosacea
- Infections (bacterial, viral, fungal)
- Infestations including scabies and head lice
- Leg ulcers and lymphoedema
- Skin tumours (benign and malignant)
- Disorders of hair and nails
- Drug eruptions
- Other less common conditions such as the bullous disorders, lichen planus, vitiligo, photosensitivity, pemphigus, discoid lupus, granuloma annulare and lichen sclerosus

Investigations:

- Ability to take specimens for mycology from the skin, hair and nail
- Basic interpretation of histology reports
- Skin biopsy

Treatment:

- Those commonly used in primary care (including an awareness of appropriate quantities and how to prescribe them)
- Principles of protective care (sun care, occupational health and hand care)
- An awareness of specialised treatments, such as retinoids, ciclosporin, phototherapy and Methotrexate
- The indications for, and the skills to perform, curettage, cautery and cryosurgery

Emergency care:

- Acute treatment of people presenting with skin problems or symptoms thought to be due to skin problems and appropriate referral if necessary.
Including:
 - Angioedema and anaphylaxis
 - Meningococcal sepsis
 - Disseminated herpes simplex

- Erythroderma
- Pustular psoriasis
- Severe nodulo-cystic acne
- Toxic epidermal necrolysis
- Stevens-Johnson syndrome
- Necrotising fasciitis

Prevention:

This will involve the following risk factors;

- Sun exposure
- Fixed factors: family history and genetics
- Occupation and the care of hands

Genetics:

Describe how genetic factors influence the inheritance of common disease such as psoriasis and atopic eczema

Appendix 13

Pilot questionnaire

(1) What type of GP are you?

GP Principal

Trainer

Trainee

Assistant

GP Locum

(2) How many years have you worked in practice?

0-5

5-10

15-20

25-30

30-35

35-40

(3) Type of practice

Fund holding

Non-fund holding

(4) Does your practice provide minor dermatology surgery?

Yes

No

(5) If so how often is this service available?

1 session per week

2 sessions per week

Greater than this

(6) Do you have access to liquid nitrogen?

Yes

No

(7) If you had liquid nitrogen would you be prepared to use it if you had the correct training?

Yes

No

(8) Do you have specialist dermatology nurse in your practice/

Yes

No

POST GRADUATE TRAINING

- 1) University attended as an undergraduate
- 2) How long did you receive as an undergraduate studying dermatology?
- 3) During which year was your dermatology attachment?
- 4) What form did your dermatology attachment take e.g. were there structured lectures, clinical attachments
- 5) Should undergraduate dermatology be part of the core curriculum?
- 6) Have you received formal postgraduate training in dermatology e.g. Diploma, working as an SHO?
- 7) Have you attended any study days in dermatology? If so detail?
- 8) How important do you think a programme of teaching in dermatology for GPs is?
Very important
Important
Not very important
- 9) What has prevented you from pursuing postgraduate training in dermatology?
Difficulty covering clinical commitments
No interest in the subject
Lack of suitable courses
- 10) Have you attended the Skin Forum?
- 11) How often have you attended this?
- 12) Do you have any interest in dermatology?
- 13) Do you feel adept at managing dermatology conditions?
Yes
No

Mostly

Not usually

- 14) Do you have a partner in the practice with a dermatology interest or expertise? If so detail?
- 15) Do you feel that having a partner in dermatology who has an interest has any effect on your referral rate?

Appendix 14

GPS AND THEIR FACILITIES

1) M F Year of Birth

2) How many GPs are there in your own practice?

3) What type of a GP are you?

GP Principal GP Trainee

If a principal are you a Trainee GP non-principal

4) Year of qualification from University?

5) How many years have you worked in general practice?

6) Does your practice provide dermatological surgery? Yes No

Do you have access within your locality to another GP who provides dermatological surgery? Yes No

7) If minor surgery is available in your surgery how often is this service available?

On an ad-hoc basis depending on patient load 2 sessions per week
1 session per week Greater than this

8) Do you have access to liquid nitrogen? Yes No

9) If you had access to liquid nitrogen would you be prepared to use it if you had the correct training? Yes No

If you answered **no** are there any particular reasons if liquid nitrogen was available and there was correct training why you would still feel reluctant to use it e.g. inadequate ventilation in the surgery etc

10) Do you have any dermatology specialist clinics e.g. wart clinic?

11) Do you have a specialist dermatology nurse in your practice? Yes No

12) Do you have access to a community nurse with specialist dermatology skills?
Yes No

13) Do you have a partner in the practice with a dermatology interest or expertise?
Yes No

14) Do you feel that having a partner with an interest in dermatology has any effect on your referral rate to secondary care?

No Yes it increases our referrals Yes it decreases our referrals

15) Is there an internal system of referral to other GPs with a specialist dermatology interest?

UNDERGRADUATE AND POSTGRADUATE TRAINING

16) University attended as an undergraduate?

17) What was the duration of your undergraduate dermatology course?

18) During which year was your dermatology attachment?

- 19) What form did your dermatology attachment take e.g. were there,
- structured lectures
 - clinical attachments
 - a mixture of both

- 20) Were there conflicting interests during your dermatology attachment which made it difficult for you to spend adequate time on the attachment e.g. special study modules competing for your time etc.

- 21) Do you think that dermatology should be an;-

- (a) essential part of the medical core curriculum or
- (b) should be taught at post graduate level for those interested or
- (c) should be taught at undergraduate and postgraduate levels?

- 22) Have you received formal postgraduate training in dermatology e.g. diploma, or working as a dermatology SHO

- 23) Have you attended any study days or courses in dermatology? If so please provide details

24) What proportion of your workload do you think is made up of dermatology cases?

<5%	<input type="checkbox"/>	10-15%	<input type="checkbox"/>	20-25%	<input type="checkbox"/>	30-35%	<input type="checkbox"/>
5-10%	<input type="checkbox"/>	15-20%	<input type="checkbox"/>	25-30%	<input type="checkbox"/>		

25) Do you think a programme of teaching in dermatology for GPs is

Very important Important Not important

If you think it is important at which stage of your training do you feel that this programme would be most useful?

(24) Do you think post graduate training in dermatology is less important of equal importance or more important than post graduate training in the following specialities

Obs and Gynae	<input type="checkbox"/>	Psychiatry	<input type="checkbox"/>	Rheumatology	<input type="checkbox"/>
Paediatrics	<input type="checkbox"/>	Ophthalmology	<input type="checkbox"/>	ENT	<input type="checkbox"/>

(25) What has prevented you from pursuing postgraduate training in dermatology? Tick as many options as you feel applicable stating from 1-3 which you feel is most important. State any other reasons you feel are important that are not listed

Difficulty covering clinical commitments Lack of suitable courses or training

No interest in the subject

Other reasons

26) Have you attended the Stiefel skin forum?

27) How often have you attended this?

28) Do you have an interest in dermatology?

29) Do you feel adept at managing dermatology conditions?

Yes No Mostly Not usually

Pigmented lesions				
Other skin lesions				
Psoriasis				
Eczema				
Infections &				infestations
Blistering diseases				
Paediatric				dermatology

COMMENTS