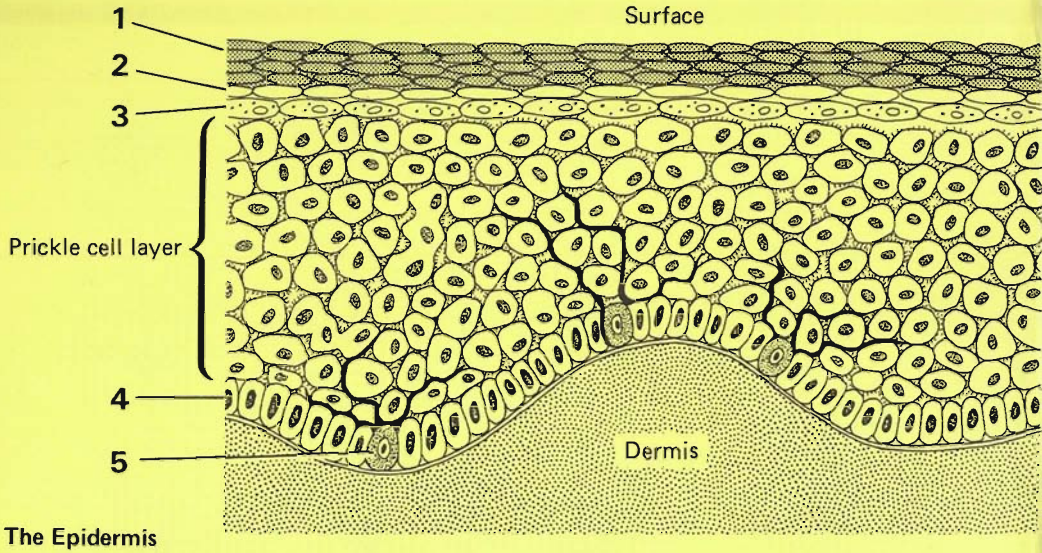
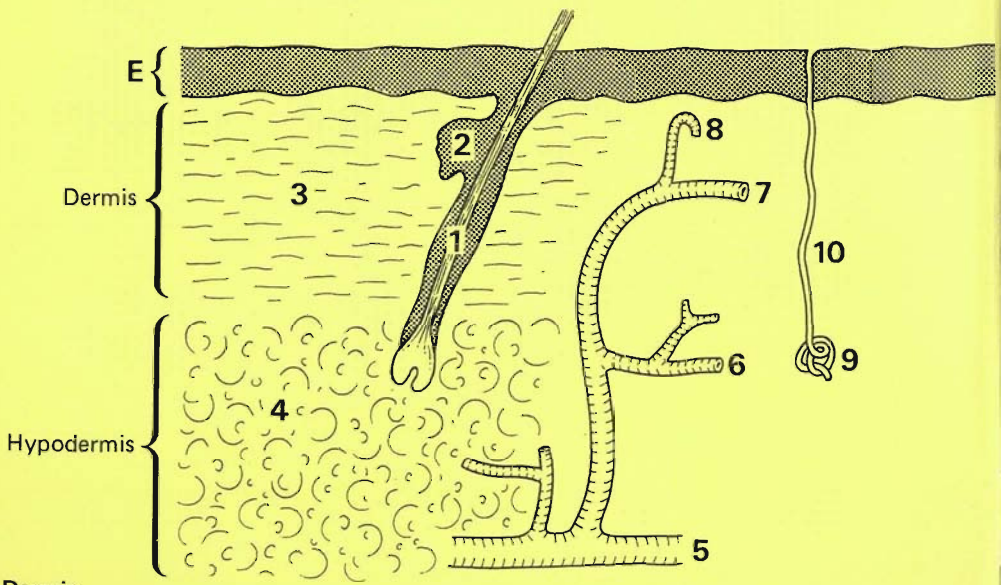
SKIN DISORDERS



The Epidermis

1, Horny layer; 2, Lucid layer; 3, Granular layer; 4, Basal cell layer; 5, Melanocyte



The Dermis

E, epidermis; 1, hair follicle and hair; 2, sebaceous gland; 3, collagen and elastic; 4, fat; 5, deep arterial plexus; 6, middle arterial plexus; 7, superficial arterial plexus; 8, papillary capillary; 9, sweat gland; 10, sweat duct.

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SKIN DISORDERS

Office of Health Economics

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Office of Health Economics

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To undertake research on the economic aspects of medical care.
To investigate other health and social problems.
To collect data from other countries.
To publish results, data and conclusions relevant to the above.

The Office of Health Economics welcomes financial support and discussions on research problems with any persons or bodies interested in its work.

Introduction

The Oxford English Dictionary defines the skin as 'the continuous flexible integument forming the usual external covering of any animal body; also the layers of which this is composed'. It forms a barrier between the body and its environment. Its impermeable outer layer, the epidermis, keeps water and other external substances out while conversely it controls loss of water, electrolytes and other substances from within the body. The topmost horny layer of dead cells can also be likened to a desert, an inhospitable environment for invading bacteria, not only because of its dryness, acidity[1] and its lack of life supporting substances but also because it is in a constant process of shedding itself. The epidermis also screens light and absorbs it with the melanin pigment. In addition, the skin hinders the passage of some types of radiation though it does not form a total barrier from any type apart from alpha particles. In man, the hair does not perform the same heat conserving function as it does in furry animals though the remaining hair on the scalp protects against ultraviolet light and minor injury. The hair roots themselves and the skin glands are a source of new epidermal cells to replace the outermost layer as it is constantly worn away.

But the skin is not simply an inert barrier. Within the connective tissue of the dermis, the lower layer of the skin, there are blood vessels, lymphatics, nerves, glands, and many types of cells which involve the skin in a number of the important biological mechanisms of the organism as a whole. Thus the skin may manufacture vitamin D with the aid of sunlight. It plays a vital part in the regulation of the body's temperature (heat is conserved by the contraction of blood vessels and dissipated by the dilation of vessels and secretion and evaporation of sweat). In addition the skin is a sensory organ which can distinguish between heat, cold, pain, itching and touch.

The sort of skin conditions that reach surgeries and clinics in the nineteen seventies are very different to the 'skin diseases' which were common before the preventive and therapeutic developments of the nineteenth and twentieth centuries. In

1 Although the skin acts as a simple mechanical barrier there is evidence that pathogenic bacteria are destroyed on its surface. There is a difference between these bacteria and the normal non pathogenic residents that live on the skin and in the hair follicles. Most of the skin is acid but there are gaps in the 'acid mantle' which are alkaline, e.g. between toes, axilla and groin. Induced sweating increases acidity and the bactericidal power of the skin. It has been shown that long chained fatty acids are present in the skin as effective bactericidals.

earlier times, when smallpox was endemic, leprosy frequently seen and the skin manifestations of later stages of syphillis common, 'skin disease' was associated with these and other grossly disfiguring infectious conditions which led to their sufferers being stigmatised as unclean and dangerous. However, these conditions are rarely seen today and furthermore they are more properly classified as systemic infectious disorders.[1]

The precise scope of the term skin disease is not at all clear. Any dividing line between what is and is not included as essentially 'skin disease' must to some extent be arbitrary and so too is any classification of conditions taken to fall within the scope of the term.[2] Table 1, therefore, shows just one scheme of organisation which is probably as acceptable as any other, although it is very much wider than the ICD classification 'Diseases of the Skin and Subcutaneous Tissues.[3] It is taken from a modern textbook on dermatology and clearly reflects clinical convenience above any other considerations. For the purposes of this paper its primary value is to illustrate the extent and heterogeneity of conditions which may be subsumed under the term skin disease. They range from relatively trivial and almost universal conditions like acne in adolescence to many more serious and chronic diseases, though very few can be life endangering. They include bacterial, viral, fungal and parasitic diseases as well as non-infective inflammatory diseases like eczema and psoriasis and some which appear to be autoimmune diseases. The vast majority of skin conditions listed can be considered as skin diseases *per se*. A few are simply manifestations of systemic disorders, but are appropriately included because of the importance of differential diagnosis. In addition, with the introduction of large numbers of potent new medicines, adverse reactions to chemotherapy form an important new class of causes of skin disorders.

The uncertainty about definitions makes prevelance hard to estimate. However, in Britain about 20 per cent of people,

1 Thus, apart from disfiguring systemic infections, which have largely died out this paper also excludes from consideration conditions like diabetes where symptoms can manifest themselves on the skin (in this case in the form of severe boils and ulcers which do not heal) or leg ulcers secondary to varicose veins which are cured when the veins are treated.

2 For example, there is often overlap between the terms eczema and dermatitis. Thus the College of General Practitioners' national study of clinical records (HMSO 1958) found that in the South West there was apparently twice as much eczema as dermatitis while in Wales the position was reversed with three times as much dermatitis recorded as ezcema. The total incidence of the two together, however, was almost identical in the two areas.

3 The ICD classification 'Diseases of the Skin and Subcutaneous Tissues' excludes Manifestations of veneral disease, Herpes Zoster, Herpes Simplex. Tuberculous infections, Anthrax, Pediculosis, Scabies and Fungal diseases, all of which are classified under 'Infective and parasitic diseases'.

when interviewed about their recent symptoms, report some sort of skin trouble, most of it minor and transient (Dunnell and Cartwright 1972, Wadsworth *et al* 1971). Over 10 per cent of people visit their general practitioner in the course of a year about a skin complaint (HMSO 1958). Less than 0.2 per cent of the population enter a hospital as in-patients in the course of a year and 0.001 per cent of people die each year (360 people in England and Wales in 1970) from skin diseases, very largely old people from chronic skin ulcers, cellulitis and abscess, herpes zoster and pemphigus. Finally, an estimated 2.9 per cent of that part of the NHS expenditure which can be attributed to specific diseases is spent on 'diseases of the skin and subcutaneous tissues', amounting to £43 million in the UK in 1970. This gives a broad idea of the importance of skin disease in the community and the magnitude of its cost to the NHS.

When something goes wrong with the skin, it is only very rarely that the condition interferes with its biological mechanisms to such an extent or over such a wide area as to threaten the organism as a whole. The major ill effects of skin diseases are therefore irritation (which may be extreme), pain (less often) and to a greater or lesser extent the disfigurement or 'messiness' associated with the condition or its treatment. Since the symptoms are by and large superficial and amenable to external medication (which can in a rough and ready way be seen to be working or not) it is not surprising that a very wide range of simple remedies intended to cure or alleviate skin conditions had grown up from naturally occurring or readily available substances long before the therapeutic revolution of the last few decades.

The treatment of skin disorders has traditionally been one of the major areas of medication.[1] Given the popularity of skin medication it is not surprising that the treatment of skin conditions should have been one of those areas which was wide open to abuse and to the perpetration of ineffective if not blatantly quack remedies on the public. For example, Pimpernel was mentioned in Dr Culpeper's *Complete Herbal* (1643) as having, on the authority of Galen, 'a drying faculty, whereby they (the flowers) are good to solder the lips of wounds, and to cleanse foul ulcers. The distilled water or juice is much esteemed by

1 The extent of skin medication was recently underlined by two surveys (Dunnell & Cartwright 1972, Wadsworth *et al* 1971) which indicated that almost 50 per cent of households had some sort of skin medicament in the home while over 10 per cent of people will have actually used a medicament in the past two weeks. The vast majority of this medication is non prescription so there is no reason to believe (since most non prescription products have been available for a long time) that widespread skin medication is a new phenomenon.

Table 1 *Classification of skin disease*

1. Genetic and Developmental Abnormalities
   a) Ichthyosis vulgaris (fish skin disease)
   b) Naevi (strawberry mark, port wine stain etc.)
2. Bacterial Diseases
   a) Erysipelas (contagious streptococcal infection of the skin and subcutaneous tissue)
   b) Impetigo
   c) Streptococcal Intertrigo (persistent dermatitis with oozing inflammation at infected skin folds)
   d) Furunculosis (boils and carbuncles)
   e) Sycosis Barbae (staphylococcal pustular folliculitis affecting the bearded and upper lip area of men)
   f) Anthrax
   g) Primary tuberculous complex
   h) Lupus vulgaris (secondary tuberculous disease of the skin associated with severe disfigurement)
   i) other tuberculour conditions
   j) Leprosy
3. Viral Diseases
   a) Herpes Zoster (shingles)
   b) Herpes Simplex (cold sore)
   c) Molluscum contagiosum (benign skin tumour caused by a virus)
   d) Verrucae (warts)
   e) Hand, Foot and Mouth disease
   f) Pityriasis Rosea ('herald patch' eruption)
4. Fungus Diseases
   a) Tinea (Ringworm, of various sites, including athletes' foot)
   b) Candidiasis (Moniliasis)
   c) Erythrasma (infection by Corynebacterium minutissimum affecting skin folds)
   d) Favus (an infection of the skin and hair)
   e) Actinomycosis
   f) Blastomycosis
   g) Sporotrichosis
   h) Mycetoma (fungus foot)
5. Parasitic Diseases
   a) Pediculosis (lice infestation)
   b) Scabies (the itch)
6. Eczema: Contact Dermatitis
7. Dermatoses due to environmental agents
   a) Mechanical trauma (e.g. friction which produces corns and callosites)
   b) Bed sores
   c) Chilblains
   d) others
8. Eruptions resulting from drug therapy
9. Urticaria
10. Purpura (bleeding from the capillaries into the skin)
11. Vascular Disorders
   a) Erythema (redness of skin due to dilation of cutaneous blood vessels)
   b) Hypostatic Dermatitis (pigmented eruption of legs and ankles in presence of failure of circulatory return from lower limbs)
   c) Vasculitis
12. Autoimmune Diseases
   a) Lupus erythematosus
   b) Dermatomyositis
   c) Morphoea
   d) Polyarteritis Nodosa

13. Bullous Eruptions and Dermatitis Herpetoformis
    a) Dermatitis herpetoformis (chronic eruption of blisters)
    b) Pemphigus (a chronic condition, involving crops of blisters, which may be fatal)
    c) Erythema Multiforme
14. Lichen planus and lichenoid eruptions (eruptions with flat topped, many sided red or purple elevations of the skin)
15. Psoriasis (chronic inflammatory disease characterised by silvery scales on reddish patches of skin)
16. Tumours of the Skin
    a) Corns and callosites
    b) Moles
    c) Rodent ulcers
    d) Cysts
    e) Malignant tumours
    f) others
17. Diseases of infancy and childhood
    a) Napkin dermatitis
    d) Infantile eczema
    c) Scabies
    d) others
18. Pruritis (itching), prurigo and self inflicted skin eruptions.
19. Dandruff, Seborrhoeic Dermatitis and Acne
20. Diseases of the Hair, Nails and Sweat Apparatus
    a) Alopecia
    b) Miliaria rubra (prickly heat)
    c) others
21. Manifestations of Venereal Disease
22. Miscellaneous
    a) Sunburn
    b) Insect bites
    c) Rosacea (chronic condition leading to permanent dilation of capillaries and to 'red nose' and sometimes 'bottle nose')
    d) Exfoliative dermatitis
    e) others

Source Modified from Lipman, Cohen & Pegum. 1972. Dermatology. Baillière

French dames to cleanse the skin from any roughness or deformity, or discolouring thereof. Being boiled in wine and given to drink, it is a good remedy against the plague . . .'

Some folk remedies used to relieve skin conditions generally may, perhaps, like goose grease, have been of rather greater palliative value, providing the individual found their use tolerable. Other substances however, which were in use in the nineteenth century and even before were, and still are, undoubtedly beneficial for their soothing, emollient, drying, cleansing or antiseptic effects. These include such substances as lanolin, coal tar, salycilic acid, zinc oxide, resorcinol and calamine lotion which are all found in present day skin preparations available without prescription. An individual buying products for simple skin complaints over the pharmacy counter today does not, in

fact, have much greater choice than if he had lived fifty years ago. In this non-prescription sector there are some relatively new substances such as the antiseptic, cetrimide, and new developments from old ones (like wool alcohols from lanolin). There has also been considerable improvement in ointment bases, but the really important therapeutic developments, like antibiotics, antifungal agents and topical corticosteroids, have been confined to the prescription medicine sector.

Prevalence and incidence of skin diseases

In respect of prevalence and incidence, skin disease is an area which has been neglected by research workers. Very little is known and what estimates there are are either educated guesses, estimates based on records of medical consultation (whether in general practice or in hospitals) or those seemingly well referenced figures which on closer inspection prove to have been copied from paper to paper or textbook to textbook but which have no definitive origin. The prevalence of psoriasis is typical of the latter. Figures of 1.5 to 2 per cent prevalence in Britain are commonly quoted but do not appear to have any substantive original source.

The paucity of data may be expected in the relatively non-serious self limiting conditions which are probably experienced and forgotten by most people from time to time without having recourse to medical advice. However, even for chronic disorders like psoriasis and eczema there are no well based community surveys which have been able to determine the prevalence of the specific major conditions according to clear and measurable clinical criteria.

In the absence of objective data the best guidelines that exist come from two recent surveys recording individuals' responses when asked whether they had recently experienced any of a checklist of symptoms. Table 2 shows the results from one of these, based on a random sample of just under 2,000 adults and children in a total of fourteen areas in Britain.

In common with all such surveys reporting of symptoms was very high (overall, similar surveys have consistently found that more than 90 per cent of people will admit to at least one symptom in a period of a fortnight, mostly of a relatively trivial or transient nature). Even so, daily recording rather than a single recall at

Table 2 *Percentage of adults and children in the sample reporting skin symptoms in the last two weeks*

	Adults	*Children*
	%	%
Sores or ulcers	4	2
Rashes, itches or other skin troubles	13	12

Source Karen Dunnell and Ann Cartwright 1972 Medicine Takers, Prescribers and Hoarders. Routledge and Kegan Paul.

Table 3 *Percentage of adults in the sample reporting skin symptoms in the last two weeks*

	%
Boils, impetigo, eczema, dermatitis, pruritis	11·0
Itching, burning, rash	8·0
Corns and callosities	2·5
Psoriasis	(0·05)
Other long standing skin trouble	1·5

Source Derived from M E J Wadsworth, W J H Butterfield, R Blaney. Health and Sickness: the choice of treatment. Tavistock 1971. Table 30.

the end of a fourteen day period would probably have yielded more symptoms (Kosa *et al* 1967).

Table 3 shows for comparison the results of a similar study covering just over 2,000 adults, but on this occasion confined to Bermondsey and Southwark.

The total of symptoms is significantly higher in Table 3 than in Table 2, 23 per cent as against 17 per cent of adults reporting skin symptoms. This can partly be explained, however, by the exclusion of 'corns and callosities' from Table 1.[1]

In summary, taking into account the probability of people reporting more than one of the groups of symptoms, it can be estimated that about 20 per cent of people will experience some symptom of a skin complaint in a period of a fortnight.

A further finding of interest came from the Bermondsey and Southwark study. In addition to the checklist of recent complaints, respondents were given a check list of chronic conditions asking which had 'ever been experienced'. Table 4 shows the results for chronic skin complaints.

Table 4 indicates a much lower prevalence of psoriasis, 0.5 per cent, than is normally quoted but this cannot be taken at face value because many respondents with psoriasis may not have

1 Dunnell and Cartwright classify corns and callosites along with foot trouble generally, 'corns, bunions or any trouble with the feet' which had a 19 per cent positive response among adults.

Table 4 *Percentage of people reporting chronic skin complaints*

	Cleared by itself or with treatment %	*Still active but no symptoms in last fourteen days* %	*Active at present* %	*Total* %
Psoriasis	0·3	0·15	0·05	0·5
Other long standing skin diseases	1·8	1·5	1·2	4·5

Source Derived from M E J Wadsworth, W J H Butterfield, R Blaney. Health and Sickness: the choice of treatment. Tavistock 1971. Table 31.

connected their condition with this term or may not have been willing to admit it. Some cases may have been classified under 'other long standing skin disease'. Also since the data do not represent objective clinical findings there is no possibility of separating the 'other long standing skin disease', with a prevalence of 4.5 per cent, into its major component conditions. All these points illustrate the limitations of such surveys. However, the table does show that of the 5 per cent of adults recorded as having had a chronic skin condition 2 per cent said it had cleared up, about 1.7 per cent reported no recent symptoms and the remaining 1.3 per cent said it was currently active. This at least gives an indication of the amount of chronic skin disease in the community which is perceived to be in various states of activity and presumably which gives rise to various states of actual discomfort.

One other way of measuring the community prevalence of serious skin disease is to look at the amount of handicap it causes. Harris (1971) in the most comprehensive study of handicap in Britain to date, estimated that 20,000 people, or less than 0.05 per cent of the population, have some degree of impairment, normally slight, as a result of skin conditions.[1]

In terms of incapacity for work a further useful measure of the prevalence of disabling illness, about 1.5 per cent of the working population has at least one spell of absence from work attributed to skin disease during the course of a year. About one tenth of those spells of absence are recorded as 'prescribed diseases' or as resulting from accidents at work, for both of which compensation is payable from the industrial injuries fund. 'Non infective dermatitis of industrial origin' in fact accounts for about 65 per cent of all spells of absence recorded under prescribed diseases.

Often a skin condition will be disabling not only in the sense

1 However, the tests of handicap and impairment used in this study were of necessity limited to a small number and would not, for example, have picked up housewives unable to wash up without risk of dermatitis. Nor would a person socially impaired by a disfiguring skin condition have been picked up.

that it necessitates temporary absence from work but also because it enforces a change of occupation. A craftsman or a shop floor worker whose skin becomes sensitive to the materials he uses in the course of his everyday work is one example of this. However, it is only in a small number of cases that total absence from work for a long period of time results from a skin condition. At any one time only about 0.01 per cent of the insured working population have been absent from work because of skin disease for more than one year.

A very approximate indicator of prevalence (of those skin conditions which may be presumed to have at least some clinical significance) may be derived from medical consultation records.

Table 5 *Persons consulting general practitioners for skin diseases as a percentage of the population at risk 1955/56*

Age	*0–14*	*15–44*	*45–64*	*65+*	*All Ages*
a) Infective skin diseases					
Boil and Carbuncle	2·3	2·6	1·6	0·8	2·1
Cellulitis of finger and toe	1·2	1·2	0·9	0·5	1·0
Other cellulitis abscess and acute lymphadenitis	0·9	0·9	0·6	0·4	0·8
Impetigo	3·5	0·6	0·2	0·1	1·1
Infectious warts	1·3	0·6	0·3	0·2	0·6
b) Non infective skin diseases					
Dermatitis	1·2	1·3	1·2	0·9	1·2
Eczema	1·6	1·1	1·2	1·2	1·2
Rosacea	—	0·1	0·1	0·1	0·1
Psoriasis and similar disorders	0·3	0·4	0·3	0·3	0·3
Pruritis and related conditions	0·1	0·6	0·8	0·8	0·6
Diseases of hair and hair follicles	0·2	0·6	0·4	0·2	0·4
Diseases of sweat and sebaceous glands	0·8	1·5	0·4	0·3	0·9
Chronic ulcer of skin	—	0·1	0·2	0·6	0·2
c) Others	1·9	1·2	1·1	1·0	1·3
Total 'Diseases of the Males	14·5	11·1	8·2	6·8	10·7
Skin and Cellular Females	13·1	11·5	8·8	6·9	10·4
Tissue' Persons	13·8	11·3	8·5	6·9	10·6
d) Other skin conditions*					
Herpes Zoster	0·1	0·3	0·5	0·7	0·4
Fungal Disease	0·8	0·7	0·4	0·1	0·6
Scabies	0·2	0·1	—	—	0·1
Lice infestation	0·1	—	—	—	—
Urticaria	3·6	1·0	0·6	0·4	1·4
Rash	0·6	0·2	0·1	0·1	0·3

Source Morbidity Statistics from General Practice, Vol. 1 (General) Studies on Medical and Population Subjects No 14 HMSO 1958

* 'Other skin conditions' refer to conditions classified (at the time) outside the broad classification 'Diseases of the Skin and Cellular Tissue'. Urticaria, for example, was classified under 'Allergic, Endocrine and metabolic disorders'. All of the rest (except rash) were, and still are, classified under 'Infective and Parasitic Diseases'.

Table 5 shows the results from a large national survey of general practice in Britain which took place between 1955 and 1956. The consultation rates are, strictly, not prevalence measures at all, but measures of usage of general practice, which varies considerably in relation to many personal and social factors quite apart from a clinically defined level of morbidity.

However, taking all of the conditions in Table 5, 13 per cent of people consulted a general practitioner at least once during 1955/6 for at least one of the conditions listed. About half of the consultations were for infective skin diseases, the most common being the group of conditions termed 'boil and carbuncle' followed by cellulitis. Eczema and dermatitis (which are often interchangeable terms – see footnote '3' on page 4) were the most common of the non-infective conditions, while urticaria, much of which would represent insect bites, was the commonest of the conditions outside the list designated as 'Diseases of the skin and cellular tissue'.

Although neither the surveys of self perceived illness nor of general practice could determine the clinically defined prevalence of the major specific conditions, all of them agree on the relative concentration of morbidity in the young age groups.

As far as general practice consultation is concerned, this is clear from Table 5, while Dunnell and Cartwright's survey provides confirmation that the totality of perceived symptoms, most of which are minor or transient, tends to follow the same pattern (Table 6).

This may be expected in that a number of chronic conditions, including acne, eczema, warts and psoriasis are well known predominantly to affect younger people and to decline if not die out with age. But there are other factors as well. Young and middle aged people are likely to be more concerned than old people about the cosmetic effects of skin diseases. Dunnell and Cartwright's data also suggested that reporting of symptoms of

Table 6 *Percentage of adults reporting symptoms in the past 14 days*

Age	*21–24*	*25–34*	*35–44*	*45–54*	*55–64*	*65–74*	*75+*	*All Ages*
a) **Sores and ulcers**	5	4	4	3	2	4	8	4
b) Rashes, itches or other skin troubles	22	17	13	17	7	10	6	13

Source **Karen Dunnell and Ann Cartwright.** 1972 Medicine Takers, Prescribers and Hoarders. Routledge & Kegan Paul.

other minor, non specific and relatively peripheral conditions tends to decline with age.[1]

With the data available there is no way of demonstrating statistically whether there is any significant unmet 'need' for treatment of skin conditions or, conversely, to what extent resources are being wasted on unnecessary treatment. However, in so far as the former is concerned there is little reason to believe that there is an important iceberg of undiagnosed morbidity which could but does not benefit from treatment. Certainly, the concept of asymptomatic skin disease which, in the same way as for instance, asymptomatic hypertension, may represent an unrecognised threat, is of little relevance in the present state of knowledge.

Treatment of skin disease

Table 7 shows, in tabular form, the high proportion of skin disease which is controlled in the community, outside the purview of hospitals.

The possibilities of intervention in the natural history of skin disease may be considered under four headings, medicine, surgery and the use of physical agents, psychotherapy and prevention.

(a) Medicine

1 *Prescription medicines*

In the post war years treatment has been revolutionised by the

Table 7 *Skin diseases at various levels of the health service hierarchy.*

	% *of population*
Persons experiencing some symptom of a skin condition during a year	Probably the majority*
Persons consulting a general practitioner	13
Persons visiting a dermatology out-patient clinic	1
Persons admitted to hospital as in-patients	0·15

Source *Ibid.* Annual report of the DHSS for 1971

*About 20 per cent of people report symptoms *in the previous fortnight.* See Tables 2 and 3

1 Hospital admission rates, which only relate to a very small proportion of skin disease, go down a little from young to middle age but increase again in the older groups. Finally, it is generally considered that the age distribution of the population visiting out-patient departments is skewed to the younger groups but the only sizeable study of the work of out-patient departments failed to confirm this. The age distribution of patients was similar to the age distribution in the population as a whole (Forsyth & Logan 1968).

development of a wide range of effective products. The corticosteriods, including the newer fluorinated compounds, the wide and continuously expanding range of antibiotics, and the more recently discovered antimycotic compounds have all been of fundamental importance in the treatment of skin diseases. Of the major classes of skin diseases, infective conditions and fungal conditions are now normally controllable by effective medication.

Parasitic infections with lice (pediculosis) and scabies can also be eradicated effectively in individuals though reservoirs of infection are more difficult to deal with. Strains of lice resistant to the conventional insecticides, DDT and BHC, have appeared but potent new products have been developed to take their place (Maunder 1971).

The chronic inflammatory conditions of eczema and dermatitis cannot be cured but their symptomatic treatment has been vastly improved by topical corticosteriods, especially the newer fluorinated ones, and other anti-inflammatory preparations which can often offer the possibility of control of at least the most troublesome manifestations. Taken systemically, the costicosteriods can also prolong expectation of life in rare life endangering conditions like pemphigus.

Like eczema and dermatitis, psoriasis cannot be cured. Its symptoms can be controlled but at present the most effective preparation, dithranol, has the disadvantages of being irritating and staining and no product has managed to avoid these side effects. In the case of acne, there is no generally effective specific treatment. It has been shown that antibiotics, particularly tetracycline can cause symptoms to subside. However, the mechanisms involved are at present far from clear and there is the risk that long term use of antibiotics may contribute to the development of resistant strains of pathogenic organisms.

Among the other major skin conditions, urticaria and pruritis can often be alleviated by antihistamines. However, the natural course of common skin eruptions such as those resulting from insect bites cannot generally be altered significantly. Nor is there any effective pharmacological treatment for sun burn once the damage has been done.

Finally, there are no effective pharmacological remedies for viral conditions like herpes zoster and simplex or warts.

In summary, therefore, there is much useful and effective medication available for skin diseases but there remain large gaps in the pharmacological weaponry available to the health services. Most of the effective products were, in fact, developed in the nineteen fifties. The last decade has been relatively unfruitful in the introduction of new, usable products, but there has

been an increasing flow of new information concerning basic pharmacology, at the molecular level, which has enabled existing products to be used more effectively in the hands of specialists and which may provide the basis for the development of new classes of medicaments in the future. One important area of future research and development is likely to be immunosuppressive therapy and since about 50 per cent of dermatitis can be claimed to be of immunologic origin (Schuppli 1972) there may be important benefits for dermatology. The study of prostaglandins may also lead to major developments. Interest in prostaglandins in the field of dermatology stems from several sources including their vascular effects, their metabolic effects on cells (e.g. in the epidermis) and their role in inflammation. There is increasing evidence that prostaglandins are important mediators of cutaneous inflammation and Blank (1972), at the XIV International Congress of Dermatology, has said that 'by understanding the role of prostaglandins in inflammation and epidermal proliferation new and better approaches to the control of a large number of skin diseases seem imminent'.

2 *Self medication*

There is a very wide range of medicaments available over the counter for skin complaints although there may be some doubt as to whether some are properly termed medicaments or whether they should be classified as toiletries or even cosmetics. For example, it may be difficult to define, except by some arbitrary rule where a medicated shampoo properly belongs. It may be used as part of the normal toilet and thus arguably should not be considered self medication, but on the other hand many medicated shampoos do contain compounds which are at least partially effective against some scalp conditions such as dandruff.[1] Furthermore, soap whether it is 'medicated' or not, has in itself an important part to play in the prevention of such common skin conditions as acne. As far as the cosmetic aspects of skin medication are concerned, these often seem inextricably bound up with the pharmacological aspects, first because the interest of the patient may (as, for example, in the case of eczema or juvenile acne) lie primarily in avoiding blemishes on visible skin, and second, because the use of a cosmetically acceptable skin tinted base cream may often be a precondition for the use of a more potent active ingredient.

In the case of skin diseases, therefore, there is a case for a very

1 The Medicines Act of 1968 defines a medicine as anything supplied for a 'medical purpose' (i.e. any product claimed to be a medicine) but clearly this legal fiction is as arbitrary as any other definition.

broad definition of medication. There is a wide range of readily available and useful products, many of which have been in existence in one form or another since the nineteenth century. Potentially at least the proper use of all these methods of 'self medication' is of very considerable benefit both in preventing the development and exacerbation of common skin conditions and in enabling people to take care of themselves without making demands on the resources of the formal structure of the health services.

There is little doubt of the importance and value of self medication in general but there are, of course, two ways in which the choice between it and its alternative, medical consultation, may be wrong. First, patients may unnecessarily overload general practice by consulting when simple self medication is all that is necessary and, second, patients may be inhibited from consulting when they really ought to seek medical advice. A number of studies have touched on the first issue (especially in relation to the measures that may be taken to prevent unnecessary consultation). There are, however, few data specifically about skin conditions, though Dunnell and Cartwright (1972) did find that more patients than doctors (22 per cent against 12 per cent) thought that 'a boil that doesn't clear up in a week' was suitable for self treatment, indicating that in this case at least people may be more inclined to under-consult than over-consult.

The possibility of under-consultation arises particularly when the skin condition is only a manifestation of a systemic disorder; for example, recurrent severe boils and ulcers that do not heal may be symptomatic of diabetes. There is also the possibility that the significance of changes in moles may be missed by an individual while a doctor would be aware of the possibility of malignant disease. Finally, rashes and other skin disorders may represent drug reactions which should, but often do not, come to the attention of the doctor. However, it is unlikely that the availability and the use of self medication is in itself responsible for much serious under-consultation. Self medication would not be effective in alleviating these symptoms so the possibility of significant under-consultation would only arise if spontaneous disappearance of symptoms were taken by the patient to infer (incorrectly) that co-incident self medication was the cause of the disappearance. This may be a particular risk with rashes resulting from chemotheropy in general, at least when it is important for the underlying cause of the rash to be elucidated. Whatever the real situation is, however, the important point (for skin as for other conditions) is that general practitioners have an important role in educating their patients as to when it is or is not appropriate

Table 8 *Percentage of skin complaints, experienced during previous fortnight, for which medicines were taken – and who prescribed them*

	Per cent medicated		*Total number of complaints*
	Doctor	*Other*	*(sample = 2,153 adults)*
Boils, impetigo, eczema, dermatitis, pruritis	25·4	64·8	244
Itching, burning, rash	8·2	28·8	170
Corns, and Callosities	—	54·5	55
Psoriasis and other long standing skin disease	39·4	48·4	33
Total	17·7	50·4	502

Source Wadsworth *et al* (1971)

to seek medical advice.

Dunnell and Cartwright (1972) found that, apart from analgesics, skin preparations are to be found in a higher proportion of homes than any other type of medicine. Forty-eight per cent of households had 'simple skin creams' such as balms, oils, antipruritics and local anaesthetics in the home at the time of interview and 54 per cent had 'other skin creams', including those with a more specific pharmacological action. The majority of items (whether in current use or not) were non prescribed, in a ratio of about six to one to prescribed medicines.[1]

The extent of self medication is further illustrated by the Bermondsey and Southwark study (Wadsworth *et al* 1971) which showed that of the (estimated) 22 per cent of people who had experienced symptoms of skin complaints in the previous two weeks about one half had medicated themselves and about a sixth had taken medication prescribed by a doctor, Table 8.

In common with medicine-taking as a whole, therefore, self prescription for skin disease is much more common than doctor prescription. The majority of dermatological disease can undoubtedly be aided by bland therapy with oils, creams, and mild antiseptics of which most self medication consists. Also, the vast majority of non prescription products, such as calamine lotion, lanolin or wool alcohols and vaseline are undoubtedly of benefit to most people in the common complaints for which they are used. The importance of even pharmacologically inert creams is reflected in the fact that the effectiveness of many prescription medicines may be dependent on the acceptability of the base or vehicle in which they are presented.

1 Thus, as confirmed by other figures in the two studies, the ratio of prescribed/non prescribed medicine '*in the medicine cabinet*' is even higher than the ratio of prescribed/non prescribed medicine *actually used* in the previous fortnight, shown in Table 8.

However, in common with all types of therapy, the benefits of effective medicines are offset to a greater or lesser extent by the risk of adverse side effects. With the development of potent medicines and long term medication the need for constant surveillance to detect these side effects has become a matter of increasing importance.

A recently published international study (Bandman *et al* 1972) has provided data on the incidence of straightforward contact dermatitis resulting from the application of commonly used medicaments to the skin. The subjects of the study were 4,000 consecutive patients with eczema from five European clinics, one each in Denmark, Germany and Britain and two in Sweden. The results from standard patch tests with five common medicaments were as shown in Table 9. It was found that these five medicaments could adequately explain over 80 per cent of all cases of dermatitis from applied medicaments.

On the basis of this evidence, in only a small minority of patients is dermatitis likely to be superimposed on existing conditions as a result of medication. It could arguably be a large enough minority to justify the routine use of a simple standard patch test to establish whether there is sensitivity before a course of medication is embarked upon, but any advantage from this would normally be marginal in practice. The use of patch tests would discover sensitivity but only at the cost of a similar reaction in the (limited) patch test area and, more seriously, at the cost of delaying treatment for the majority with no sensitivity. Since any reaction on the site of medication would normally lead to discontinuation of treatment in any case, preknowledge would only be of interest to the academic purist except where there is a risk of the reaction seriously complicating the underlying skin condition.

Table 9 *Percentage of patients with positive reactions to standard patch tests with various medicaments*

Medicament	%
Neomycin	4
Iodochlorhydoxyquin	2
Parabens	2
Wool Alcohols	3
Chlorquinadol	1
Any of above	11
Benzocaine*	4

* Tested separately

Also, there is little doubt that the 4,000 clinic patients represented a selected sample. They all had a skin condition (eczema) which was presumably sufficiently intractable to have reached a specialist clinic. (Differing degrees of selection may indeed be a partial explanation for the wide variations in the study's results from country to country.) The data, therefore, cannot be applied to the primary medical care situation where most skin disease is treated.

Concern about potentially more serious side effects has recently centred on the topical corticosteroids and the possible deliterious effects when used in large quantities over long periods of time. Thus, fears have been expressed that suppression of natural corticosteroid production may take place as a result of absorption of topical corticosteroids through the skin. Also, there have been reports of skin atrophy on the face, and the appearance of striae on the thighs, among people taking topical corticosteroid medication over long periods of time. The extent of long term medication is indicated by Dunnell and Cartwright's survey of medicine taking, which found that as many as one in a hundred persons is currently taking a skin preparation which was first prescribed a year or more ago. Furthermore, some of these repeat prescriptions will be for corticosteroids and as a result of what Balint *et al* (1970) termed 'indirect contacts' between patients and general practitioners where the patients, if they see the doctor at all, will see him as a formality and no attempt will be made to review the treatment.

In these circumstances it might be anticipated that the side effects of corticosteroids would be both common and unrecognised until they reached an advanced stage. However, despite the widespread use of corticosteroids and what may be termed 'misuse' when repeat prescriptions are given over long periods of time without adequate surveillance, remarkably little evidence has accumulated of adverse side effects from topical corticosteroids. The grosser side effects of systemic corticosteroids do not occur at all. When atrophy of the skin occurs it is reversible and there is strong evidence that fears over natural corticosteroid suppression are exaggerated. Thus Wilson *et al* (1973) found that in two reasonably comparable groups of patients 96 per cent of those who were being treated with halogenated topical corticosteroids had plasma corticosteroid levels of more than 6 mg/100 ml (the conventional lower limit of the normal) compared with 99 per cent of the control group but concluded that such adrenal suppression as does occur is likely to be transient. No correlation could be found between corticosteroid levels and duration of treatment. Furthermore, the subjects of the study were selected

from a hospital skin clinic. If only a very small proportion of these patients had plasma corticosteroid levels below normal limits, and then probably only transiently, it is highly unlikely that many clinically important cases of adrenal suppression are occurring in the less resistant skin conditions dealt with in general practice.

There is also some suggestive evidence of teratogenic effects based on foetal abnormalities among animals exposed to corticosteroids. On the basis of this the Committee on Safety of Medicines warned in a recent report (HMSO 1972) that doctors should not use topical corticosteroids in large amounts or over long periods of time among pregnant women, and that manufacturers' literature should incorporate a recommendation to this effect. The decision illustrates the dilemma in which the Committee on Safety of Medicines must often find itself placed. Any potent medicine has side effects. The problem is to balance the benefits against the detrimental effects and it is understandable that when the possibility of teratogenicity is raised, however remote it might be in the particular case, the committee will take the path of caution until evidence is obtained to show that no risk exists.

b) Surgery and physical agents

Both surgery and irradiation have their primary value in the treatment of malignant and premalignant growths. Other physical agents, however, are valuable in what is more clearly recognised as dermatology, including ultra violet rays for the treatment of psoriasis and acne and to promote healing of burns, ulcers, and wounds. Freezing with carbon dioxide snow has been widely used for naevi, warts and rodent ulcers while liquid nitrogen is used particularly for warts. Dermabrasion (or plastic planing) is another technique used in dermatology, mainly to lessen the unsightliness of raised scars, especially in acne vulgaris. Electrocautery is used for destroying small lesions while fulguration and coagulation can be achieved with the special electric currents used in diathermy.

c) Psychotherapy

There are two areas in which psychotherapy may be of value. First, there is still often a stigma attached to skin conditions, an association with uncleanness. Skin disorder may also give rise to acute embarrassment, as for example with psoriasis or eczema, or among people given to excessive blushing and sweating. In these cases psychotherapy may be useful in helping people to live with their condition, though, in the primary medical care

situation, there are likely to be cases requiring very delicate judgement when the doctor wonders whether he ought to intervene on his own initiative. On the one hand a silent patient may be waiting for guidance as to how best to cope with his predicament, while another patient's silence may reflect a total lack of concern which may only be turned into an awareness of disfigurement by the doctor's initiative.

Second, it is claimed that many skin conditions have psychological causes, and by inference, that psychotherapy can cure or alleviate these conditions. There have been some well validated studies, for example the eradication of warts from one side of the body while the other side remains unchanged, which admit to no other explanation but that pure suggestion under deep hypnosis was the causal factor. (Sinclair-Greben and Chalmers 1959). It has also been shown that the superficial symptoms of tuberculin positive reactions can be inhibited by suggestion under deep hypnosis, though histologically there are no observable differences in cellular infiltration between inhibited and non-inhibited subjects (Black 1963). On the other hand, most of the more exaggerated claims that psychological factors play a primary role in causation, and that cures can be achieved by suggestion or hypnosis, do not stand up to rigorous scientific testing.

There is some good evidence, however, that psychological factors play an important causal role, if not the only one, in the development and treatment of a number of common skin diseases. Baughman *et al* (1971), for example, have demonstrated that stress (measured by the incidence of concrete stressful life events such as 'row with boss', 'getting a mortgage' or 'pregnancy') can be moderately but significantly associated with the objectively (but retrospectively) measured severity of psoriasis over the previous five years. They concluded from their study, which used hospitalised patients, that stress was a minor causal factor in the severity of psoriasis.

The only significant randomised controlled trial of psychotherapy in skin disease that has been undertaken in Britain looked at psychiatric treatment of eczema (Brown and Battley 1971). They found that, out of a total of 72 patients, those who received both psychiatric and dermatological treatment did better than those receiving dermatological treatment alone if their skin symptoms were accompanied by overt disturbance and high motivation for psychiatric treatment. But, in the absence of overt disturbance and high motivation, psychiatric treatment actually worsened eczema, especially in the short term. However, this was very much an exploratory study and, as the authors

themselves noted, there is a need for larger multicentre controlled trials in the future. Multifactorial analysis could then take into account such variables as types of eczema, characteristics of patients and therapists and types of treatment (including each of the aspects of psychotherapy which may or may not be actually effective) with a rigour that is not possible in a study of limited size.

d) Prevention

The concept of secondary prevention, through screening and early diagnosis, is for practical purposes irrelevant to dermatology in the present state of knowledge. So too is primary prevention of individuals' predisposition to skin conditions, by genetic or other means. There is, however, considerable scope for primary prevention through changes in living and working behaviour and changes in the environmental factors which may be important in the aetiology of skin diseases.

Thus with better heating at home and at work chilblains are not so common as they were. Impetigo and other infections are also much less commonly seen than previously and the decline must largely be attributed to increased cleanliness, less overcrowding, better nutrition and better living conditions generally. Infestation with headlice has also declined in post war years with better hygiene and living conditions though a recent increase in cases has been recorded and it was recently estimated that still about one million people, mainly children, are affected in the UK (Maunder 1971).

One of the most important areas where preventive action could be of considerable value is within industry. 'Non infective dermatitis of industrial origin', where employees have become sensitised to materials used in industrial processes, is by far the largest of the 'prescribed' industrial diseases and this type of contact dermatitis accounts for the vast majority of occupational dermatoses (Meneghuri 1972). Together with skin diseases resulting from industrial injuries, industrial dermatitis is recorded as causing 30,000 spells of absence from work every year in Britain, as well as leading to difficulties in re-employment among affected people.

In the present state of knowledge screening of employees to find those at risk of sensitisation is not possible (for lack of a suitable test) and once an individual is affected there is little that can be done except to remove the cause of the dermatitis. In so far as skin diseases are concerned, therefore, one of the main functions of any comprehensive occupational health service must be to provide advice to both management and

employees on ways of modifying production processes and working behaviour so as to avoid situations where dermatitis is likely to occur. Another must be the rehabilitation of employees prevented from maintaining their normal job by sensitisation to working materials. With the reorganisation of the Employment Medical Advisory Service there is an opportunity to develop a co-ordinated industrial health strategy along these lines on a much larger scale than before.

e) Discussion

The question of 'place of treatment', which is so important in other areas of the NHS, is not a critical issue in any sense as far as skin disease is concerned. Nevertheless, it is worth mentioning that the development of modern dermatological compounds, together with the ready availability of non prescription medicines, has made an even stronger case for dealing with the bulk of skin disease either within general practice or outside the NHS altogether (through self medication).

It is interesting to note the following comment about dermatology out-patient clinics in the only comprehensive study of hospital out-patients (Forsyth and Logan 1968). 'The largest group of diagnoses is the 14 per cent with infectious warts requiring the quick and magic treatment of soft x-ray. The same special therapy may also be needed in the 11 per cent of persistent eczemas, and again for many under the benign neoplasm category. Thus, out-patient dermatology is the right and proper location for special and potentially dangerous treatment to be used in the hands of the expert' (and presumably this applies to expert treatment with other physical agents as well as irradiation). They go on 'The diagnostic function of the clinic is seen in the long list of (specific) diagnoses, leaving only 5 per cent non specific or with symptoms only. Of all out-patient departments dermatology had the clearest function and is the least suspect of impinging on territory which might safely be left to a retrained and revitalised corps of general practitioners.'

Whether or not the ideal is actually achieved, and the process of referral to out-patients really does selectively filter through those cases which need the special expertise available at this level of the hierarchy, must be a matter of some doubt, on presumptive grounds if nothing else. However, it is a good illustrative example of how the general practice/hospital relationship can develop in the right direction through the ready availability of effective and easily used medicines to cope with the mass of disorders at the primary medical care level.

The cost of skin disease

The costs of illness are commonly divided into three categories. First, there is the direct cost to the health services of prevention, diagnosis and treatment.[1] Second, there are the more indirect costs of illness associated with loss of productivity through incapacity for work.[2] Third, there are the costs of personal hardship and disability to the sick person himself and his family. These last costs are quite specific although no monetary value can be validly placed on them.

Estimates of the direct cost of skin diseases to the health services are shown in Table 10.

The figures from Table 10 confirm the view that skin disorders are very largely dealt with by general practice and self medication. Skin conditions take up just over 1 per cent of hospital in-patient expenditure but account for 7 per cent and nearly

Table 10 *The cost of skin disease to the health services, UK 1970*

	Cost attributed to Skin Disease £ million	*Total cost of the sector £ million*	*Per cent attributed to skin disease*
Hospital service in-patient costs (current)	12·8	971	1·3
General Practice	12·2	174	7·0
Pharmaceutical Service	18·3	209	8·8
Dental & Ophthalmic Services	0	131	0
Sub Total	43·3	1,485	2·9
Other services including local authority health services. Hospital out-patient costs. Hospital capital expenditure. Miscellaneous (no basis for allocation of costs to skin disease).	n.a.	673	n.a.
Non NHS			
Private Practice	n.a.	25 (approx)	n.a.
Non NHS medicines (including private prescriptions)	10 (approx)	99	10 (approx)

Source OHE Estimates

Note The definition of 'skin disease' used here is a wide one. It includes the whole of the ICD classification 'Diseases of the Skin and Subcutaneous Tissue' plus those under 'Infective and Parasitic diseases' which relate to the skin, e.g. Herpes Zoster, Dermatophytosis.

1 This represents a measurable consumption of resources which could have been put to other uses and which can be valued in monetary terms.

2 These tend to diffuse and difficult to measure in their real economic impact though conceptually the loss to society as a whole should be capable of expression in monetary terms.

9 per cent respectively of the costs of general practice and prescribed medicines. (In addition it can be estimated that dermatology clinics spent about 3 per cent of all out-patient resources at a cost of about £6 million.) Overall, the direct quantifiable costs of skin diseases to the health services amounted to over £50 million in 1970 which represented about 3 per cent of total health service expenditure attributable to individual disease groups. It is also estimated very approximately that about 10 per cent of self medication[1] is accounted for by skin products. A breakdown of private practice by diagnostic group is not available but it is known that private practice in dermatology is currently very active and that the supply is not always able to meet demand.

There is no clear cut evidence that advances in medical technology have dramatically altered either the amount or the nature of direct expenditure on the health services. The case of skin disease is not, for example, in any sense comparable to tuberculosis, where the development of cheap and effective means of prevention, diagnosis and treatment resulted in the obsolescence of sanatoria and the reduction of TB's claim on NHS resources to a fraction of its previous level. Nor, on the other hand is it comparable to, for example, kidney disease where the development of modern technology has created an effective but highly expensive treatment which exerts pressure for an ever increasing share of resources.

The best available measure of the magnitude of the indirect costs of loss of productivity due to skin disease is from the analysis of statistics on incapacity for work provided by the DHSS. Adding together episodes recorded as sickness absence with the very much smaller group of absences where compensation is payable from the Industrial Injuries Fund there were 0.3 million spells of absence attributed to skin diseases, accounting for 7.0 million working days lost in 1970/71.[2]

Estimates of the indirect cost of lost productivity caused by these 7 million lost days, plus those absences not recorded by the DHSS, are critically dependent on assumptions made about the marginal productivity of labour and since there are no empirical guidelines here it is better not to calculate any figures purporting to represent the total economic burden of absence from skin disease.

1 Self medication included all non prescribed medicines bought over the counter. Some products which, strictly defined, are not medicinal but are cosmetic in nature would be included. It is difficult to draw a line between the two types.

2 This represents about 2 per cent of working days lost from all conditions.

Figure 1a *Spells of certified sickness incapacity. Great Britain. 1954/55 to 1960/61 standardised by 1951 population. 1960/61 to 1969/70 standardised to 1962/63 population.*

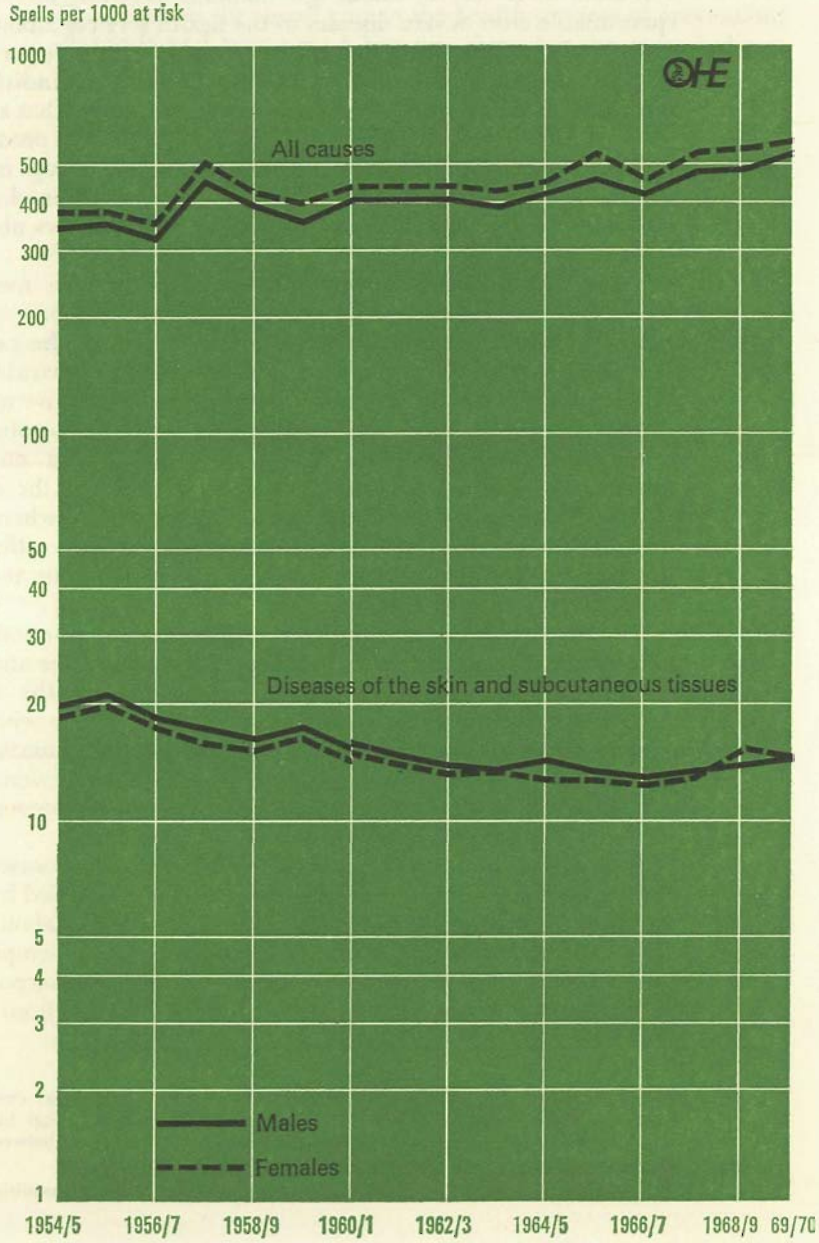
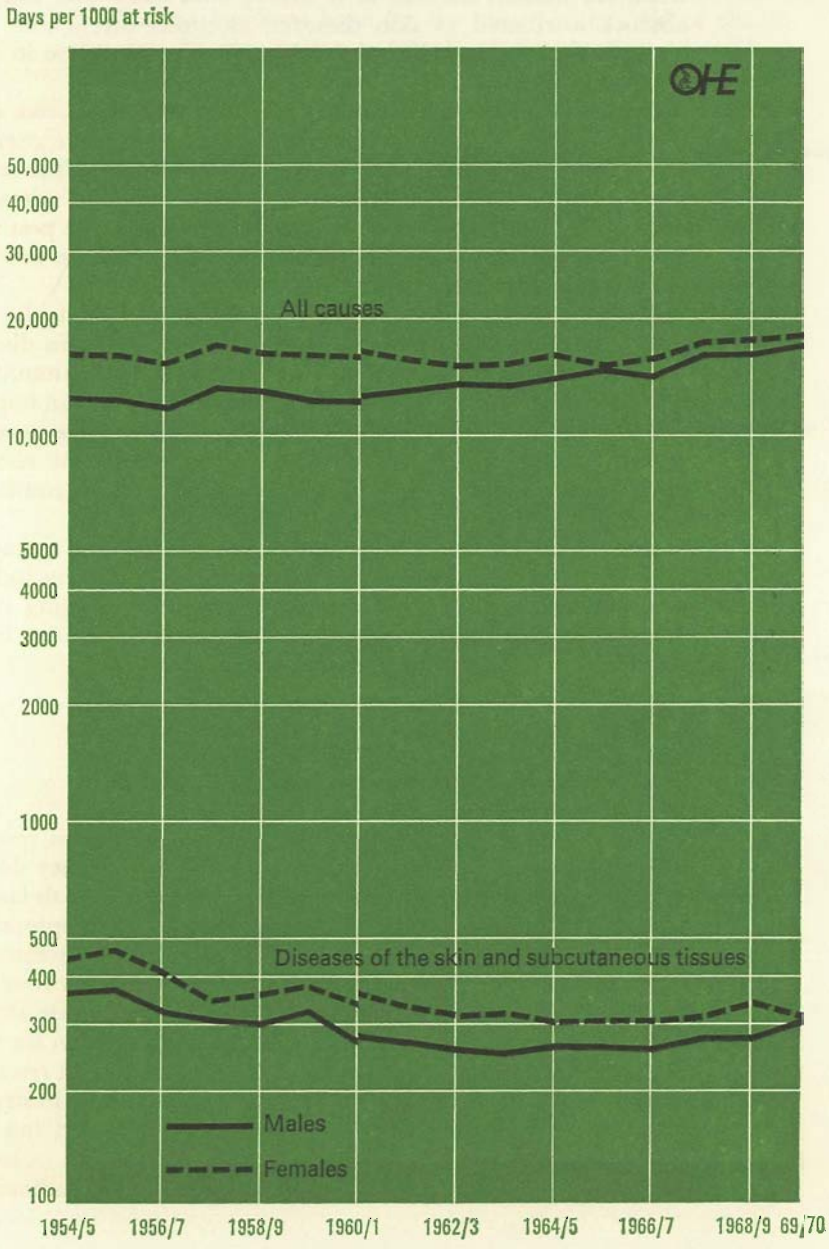


Figure 1b *Days of certified incapacity. Great Britain. 1954/56 1960/61 standardised by 1951 population. 1960/61 to 1969/70 standardised 1962/63 population.*



There is, however, clear evidence that, whatever the cost is, it has not been increasing at the same rate as for absence attributed to other causes. Figures 1a and 1b show how, against the trend for sickness absense as a whole, both spells and days of absence attributed to skin disorders declined throughout the nineteen fifties, into the sixties, and only started to rise in line with other absence during the late sixties.

It would certainly have been expected that absence from skin disease, much of which is relatively minor, would have risen in line with absence from other causes, especially at a time when there is evidence of a general decrease in the threshold of tolerance to ill health. The fact that it has not risen suggests that post war developments have made a significant impact on the level of more serious skin disorders.

The two major developments that could have kept absence levels down have been the antibiotics – for infective skin disease – and the topical corticosteroids – for non infective inflammatory skin conditions. It may be assumed that both have had an impact though it is the non infective group of conditions like eczema and dermatitis which are responsible for the recent rise in absence rates while absence from infective skin disease continues to decline.

In summary, therefore, the major benefits of new therapies have been the reduction of the burden of morbidity on individuals themselves and a 'soft' economic benefit resulting from lower levels of sickness absence than might otherwise have obtained.

The future

The major problems of controlling skin diseases do not revolve around the need for a greater share of resources, as they do for example with renal dialysis or, for different reasons, with family planning. There seem to be no glaring examples of inappropriate distribution of existing resources to different places of treatment of the sort that have been suggested in the controversy over the balance of hospital and community care in the treatment of mental illness. Rather, the major gaps in NHS provision for skin diseases are those which can only be filled by successful research and development. Neither the causes nor the biochemistry of most non infective conditions are adequately understood and it is likely that further major advances in either prevention or treatment will depend on a better understanding of the mechanisms

involved in these conditions, or at least they will depend on fundamental research running in tandem with empirical pharmacological or clinical research.

The major area of research in the past and the one which seems to offer the brightest hope for the future is the field of chemotherapy. In the post war years, pharmaceutical research in dermatology has been extremely productive, especially in the decade of the fifties. Table 11 shows the results of a study which, among other things, for the first time attempted a quantification of the therapeutic value of products first introduced onto the world market between 1958 and 1970. A total of six new dermatological medicines were classified as either 'fundamental' or 'important' advances during that time.[1] They were developed both as a result of intensive research activity directed specifically at the dermatological field and through spin-offs from other areas of research activity. The six represented 6 per cent of all medicines developed between 1958 and 1970 classified as 'fundamental' or 'important' advances, and together with newer antibiotics, classified elsewhere, they now account for most dermatological prescribing.

Table 11 *Therapeutic assessments of dermatological drugs first introduced onto the world market between 1958 and 1970*

	No of dermatological medicines	*No of all classes of medicines in each category*
Category 1. Fundamental new medicine of major clinical significance	3	35
Category 2. Important new medicine offering substantial advantages for a minority of patients	3	62
Category 3. Useful new medicine offering advantages for a minority of patients	3	70
Category 4. New medicine offering only marginal advantages over previously available therapies	4	128
Category 5. New medicine offering little or no advantage over previously available therapies	8	134
Total assessed	21	429

Source Centre for the Study of Industrial Innovation unpublished.

Note The therapeutic assessment was carried out by two experts in each speciality. Their assessments were co-ordinated by another team of experts in clinical pharmacology.

1 All of the new products in Table 11 rated 1 and 2, however, had been introduced by 1963 or before. They included the antifungal drugs as well as the halogenated corticosteroids. There is evidence that the rate of innovation, or at least the rate of diffusion of innovation, has slowed down throughout the whole range of pharmacology in the nineteen sixties, but innovation in dermatology was particularly sparse.

Developments in dermatology do not involve reductions in mortality but are concerned primarily with alleviating conditions which (apart from the very important minority of serious cases) tend to be either transient or to involve only minor discomfort or cosmetic impairment.[1] It could be argued, therefore, that research in this field should have a lower priority than in fields where premature mortality could be reduced by pharmacological progress.

However, to the sufferers themselves the urgency of finding better treatments for diseases like eczema or psoriasis seems just as real as in the case of life threatening morbidity. It is, after all, the relatively minor but irritating symptoms, rather, than life threatening situations, that constitute the bulk of illness with which the NHS finds itself confronted.

It is this sort of NHS activity which deals with essentially the same morbidity as is often dealt with by individuals themselves through self medication, and it is in this extensive grey area that medical consultation and self medication are often interchangeable with little significant difference to the patients' overall welfare. Despite this, there is little doubt that the NHS is responding to the wishes of the vast majority of the population when it accepts as one of its major functions the management of this essentially non serious morbidity instead of concentrating its resources in areas where life and death dramas are daily routine.

1 Using the example of skin disorders, Wadsworth *et al*'s figures indicate that only 1–1½ per cent of adults will, when questioned, report a significant *Chronic* skin complaint which has been active in the past 14 days, yet 4 per cent of people will report having used some skin medicines on prescription during the same period, and 11 per cent having used non prescription medication. Thus the large majority of medication must presumably deal with conditions which are transient and/or minor.

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