



# The User of the Public Service in Dermatology

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## Abbreviations

AIDS	Acquired Immunodeficiency Disease Syndrome
Covid 19	Coronavirus infectious disease 2019
DALYs	Disability-Adjusted Life Years
GBD	Global Burden of Disease
NHS	National Health System
SBD	Brazilian Society of Dermatology
UHS	Unified Health System (in portuguese: Sistema Único de Saúde or SUS)

## Key Points

- Skin diseases are responsible for approximately one-quarter of medical appointments in primary care.
- Patients with cutaneous problems experience a reduction in their quality of life that often goes beyond other non-dermatological conditions.
- Social and demographic characteristics of the population using public dermatology services are essential to direct and plan public health policies.

- Nosological profile in dermatology depends on many variables such as gender, age, socio-economic status, and access to health services, among others.
- Health professionals should be able to observe and recognize symptoms of the cutaneous complaints more prevalent in the population they care for.

## Introduction

Skin problems are one of the main reasons why people seek medical care, and one of the leading causes of global disease burden, affecting millions of people worldwide. In fact, dermatological diseases are the fourth most frequent cause of all human disease, affecting some 1.9 billion people at any time, almost one third of the world's population [1]. It is therefore a leading reason for seeking medical help in all societies. In the United States, 85 million Americans (i.e., 1 in 4 individuals of all ages) were seen by a physician for at least 1 skin disease in 2013 [2].

A study conducted in Sweden, with a random sample of 8000 individuals, assessed the impact of skin conditions on the quality of life of this population, from an epidemiological perspective. The subjects were aged between 20–84 years and 20.5% reported skin problems and/or the use of topical medications, with a higher frequency among women [3].

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Another survey, conducted in France, evaluated the prevalence, management and impact of dermatological diseases, from the patient's point of view. Of a total of 25,441 subjects, 18,137 (71.3%) returned the questionnaire. Of these, 86.8% reported at least one skin problem from birth, and 43.2% mentioned a skin disease in the previous 24 months. For 28.7% of the respondents, their dermatological problem had impaired their quality of life [4].

The importance of the skin's health is underestimated, due to the chronic nature and low lethality of most cutaneous diseases, which results in those not being considered important health problems by those who formulate public policies [5]. However, skin conditions can be precursors to considerable physical and psychological deficiencies, making them a public health problem of great magnitude. Important examples of these situations can be cited, such as: leprosy, psoriasis, vitiligo, melasma, lupus, urticaria, atopic dermatitis, and skin cancer, especially melanoma [6–8]. The prevalence of suicidal ideation is high in several skin diseases, especially in patients with psoriasis, atopic dermatitis, and acne [9].

Moreover, frequently, dermatologic manifestations are indicative of or associated with systemic diseases, where the skin changes can be the first sign of a medical condition, or part of a multisystem disease, like systemic lupus, sarcoidosis, neoplasias, and AIDS, for example [10], and more recently, the heterogeneous and complex spectrum of cutaneous manifestations observed in patients with Covid 19 [11].

Skin diseases place a huge burden on global health. The costs and prevalence of skin disease are comparable with or exceed other diseases with significant public health concerns, such as cardiovascular disease and diabetes [12]. Global disability and mortality due to skin disease has been investigated by the Global Burden of Disease (GBD) 2013 Study, a collaboration of more than 1000 experts worldwide, aiming to create a systematic, quantified, and internally consistent source of health information. According to this study, skin and subcutaneous diseases were the 18th leading cause of global

DALYs (disability-adjusted life years). Excluding mortality, skin diseases were the fourth leading cause of disability worldwide, expressed in years lost due to disability. Skin diseases arranged in order of decreasing global DALYs are as follows: dermatitis (atopic, contact, seborrheic), acne vulgaris, urticaria, psoriasis, viral skin diseases, fungal skin diseases, scabies, melanoma, pyoderma, cellulitis, keratinocyte carcinoma, decubitus ulcer, and alopecia areata [13, 14].

Patients with cutaneous complaints experience a reduction in their quality of life that often goes beyond other non-dermatological conditions, including restricted mobility, intense pruritus, and physical and psychological discomfort; the physical characteristics of the diseases related to contagion and deformity may even lead to the social segregation of individuals. Such restrictions undermine the activities of daily life and have a great impact on the patients' sense of well-being [12, 13].

Although skin problems are common in the population, there is little information on the profile of users of public dermatology health services. Data on the dermatological care provided in public health services are critically important to identify and monitor the impact of dermatological diseases on the health of the population, as well as the user profile of those afflicted, with a view to planning the treatment, prevention, and promotion of such maladies, especially among the most vulnerable population groups [5].

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## Health Services

The World Health Organization defines a health system as a network of organizations, people, and actions whose primary objective is to promote, restore, or maintain health [14]. This includes the public, private, and voluntary bodies that contribute to the delivery of essential health services, working to fulfill the mission of guaranteeing a healthy population. The responsibility of the public health in each country lies with specific agencies at different levels of management (municipal, state, federal, and international).

Health systems can vary substantially between countries, especially in terms of the responsibility for how the health services offered to the population are financed. There are, primarily, five forms of financing the services offered to the population (Box 3.1), although most countries offer a mixed model.

**Box 3.1 Modalities for Financing Health Systems**

Financing of health systems

- (a) Federal and/or state and/or municipal taxation
- (b) Social health insurance
- (c) Private health insurance
- (d) Direct out-of-pocket payments
- (e) Donation to charity

In 1948, the Ministry of Health of the United Kingdom created the British National Health System (NHS), as a regionalized and hierarchical systemic organization of health services, arranged by level of complexity with a defined geographical base. This model has influenced and guided the organization of health services in various countries around the world. The system is structured into a stratified model. The levels of complexity are used to establish a network of services, according to the characteristics of care and the degree of specialization of the services [15].

The primary care level represents the first contact patients have with the health system and should be capable of resolving a large portion of the health problems they present, through non-specialized outpatient care and low-density technological clinical activities aimed at the promotion, prevention, and restoration of health. Staff qualifications for this level involve a general and comprehensive training with an emphasis on family health. It is estimated that between 85 and 90% of the cases seeking primary care are likely to be resolved at this level [15].

The secondary level develops activities in basic medical specialties (general medicine, pediatrics, gynecology-obstetrics, and general

surgery) and strategic specialists in the form of outpatient appointments, hospitalization, emergency, and rehabilitation care. These services should have equipment with an intermediary degree of technological innovation to deal with situations that are not absorbed by the primary level. Highly advanced technology and more specialized personnel are concentrated at the tertiary level, which is responsible for solving the more complex situations [15].

In Brazil, the Unified Health System (UHS or SUS), established in the Federal Constitution of 1988, represents the largest social inclusion system in the world. Inspired by the British National Health Services, the Brazilian UHS is a free public system that cares for most of the population. The system's architecture mirrors Brazil's federal structure: the financing of SUS counts on resources from the three spheres of government (municipal, state, and federal). When considering the services according to the level of care, in general it can be said that the federal sphere coordinates the whole system and is partially responsible for local health programs on tertiary care, while state governments are responsible for more complex health services (tertiary and secondary care) and the municipal level for primary health care. Complementary to the Unified Health System (SUS), a private system, or Supplementary Health System, managed by health insurers can be acquired individually or as a benefit offered by employers [16, 17].

In 2020, the coronavirus pandemic highlighted the importance of universal care systems. Indeed, in Brazil, without the SUS, the 75% of the population with no access to private insurance would not have had proper access to health services during the pandemic [18, 19]. The Brazilian experience shows that building a strong public health care service on a continental scale is not only possible, but also highly effective to improve the health of citizens, particularly those in more vulnerable situations.

Within this stratified model of care, appointments for dermatological problems are initially carried out by general practitioners in primary care. However, most of these professionals do not feel qualified to diagnose and treat these condi-

tions and limit themselves to referring patients to dermatologists at the secondary level. There is a lack of dermatologists in public services in most of the countries, so the patients with skin diseases often do not have timely access to a dermatologist, resulting in appointment timeframes of 34–239 days [20], putting them at risk. In this way, today it is essential to provide training for primary care physicians in the diagnosis and treatment of dermatological disease of health interest.

Another consequence of COVID-19 pandemic, in which social distance is recommended, was the widespread adoption of telemedicine, which allows remote interaction between health professionals and patients, reducing the flow of patients in health units. In this scenario, teledermatology, the practice of delivering dermatological care via communication technology, has the potential to provide faster access to dermatologists with earlier accurate diagnosis and treatment [21, 22].

There are two primary forms of teledermatology: live-interactive or live video conferencing, where patient and physician meet virtually at the same time using a webcam or mobile phone camera; and store-and-forward (SAF) that allows transmission of images and text to a clinician for review. Both improve access to care, reduce waiting times, and provide flexibility for physician and the patient than traditional clinic visits. However, face-to-face clinical encounters continue to be the best choice [23, 24].

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## The Social and Demographic Profile of the Users

There are few data on the demographic and social characteristics of the population who use outpatient services in the health system, despite these data being essential to direct and plan public health policies. It is even more difficult to find data relating specifically to the characteristics of dermatological patients [5].

A national inquiry promoted by the Brazilian Ministry of Health periodically analyzes the profile of the users of the health service, using,

among others, data referring to the proportion of individuals who looked for or related having used the health service in the previous 12 months. In Brazil, in 2019, 76.2% (1596 million inhabitants) had at least one appointment with a doctor in the previous 12 months. Women are responsible for most of the demand for health services (82.3% compared with 69.4% among men) [18].

A population-based study with a sample of 12,402 Brazilians aged between 20 and 59 years, living in urban areas, showed a prevalence of outpatient care in public health services of 53.6% in the 3 months prior to the interview. Women represented 55.1% of the sample and about one third (31.8%) were aged between 20 and 29 years, with a mean age of 37.4 years. More than half (51.5%) were in social class C [17].

Few studies show the user profile of public dermatology services, but it looks like it's similar to the population that seeks public health services in general; they are predominantly women, Blacks, and have a low socioeconomic and educational level [16].

A multicenter, retrospective study addressing patients who seek dermatological care in four specialized outpatient services in Australia observed, over 7 months, a total of 9639 visits by a total of 4875 patients. In this sample, there was a predominance of males (51.4%). The mean age was 48 years and for men it was 50 years compared with 45 years for women ( $p = 0.002$ ) [25].

In England, more than 50% of the population related a skin disease in the previous 12 months, and 24% required medical intervention to care for dermatological problems every year. Among users of dermatology services, there was a predominance of women (57.6%) in all age groups, but especially between 20 and 39 years [26].

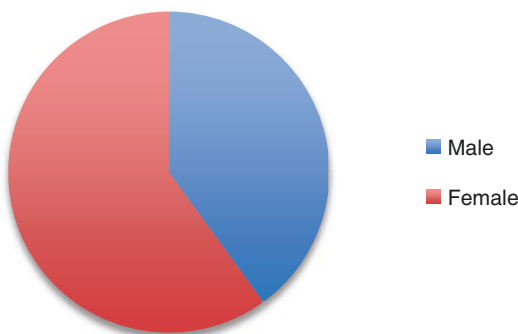
A survey conducted by the Brazilian Society of Dermatology in 2006, with data for 57,343 patients, also showed a predominance of females (66.5%) in all age groups. The mean age was 37.4 years; 35.3 years for men and 38.4 years for women. Schooling was the most divergent aspect when comparing patients treated in the public sector with those in the private sector: 65.7% of patients treated in the public sector and 27.6% of

those cared for in the private sector had not completed secondary education [27].

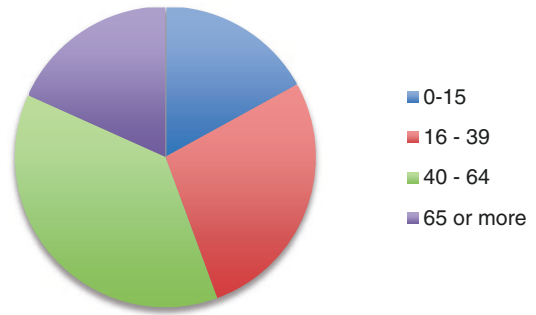
In 2018, the Brazilian Society of Dermatology performed a new survey, in order to update and compare data between the two periods studied, including data on procedures that were performed. Data were collected from 9629 patients, reported by 885 dermatologists who completed the survey, which corresponds to 10% of the members of the Society at that time. The mean age was 42.8 years and 65.1% was female. The private sector, including health plans and out of pocket funded corresponded to 73.7% (7274) and 26.3% (2335), was funded by the UHS (SUS). This can reflect the lack of dermatologists in the public sector [5]

We collected data from a public referral service in dermatology in the Northeast of Brazil, state of Ceará, between January 2018 and December 2019. Overall 33,397 consultations were carried out: 9175 (27%) the first appointment and 24,222 (73%) subsequent ones. These data reflect the chronic nature of diseases such as Hansen's disease, psoriasis, and vitiligo, which require continued treatment. There was predominance of women (60%), and in the group of 40–64 years old (37.3%). These data can be viewed in Figs. 3.1 and 3.2 (unpublished data).

The predominance of females in dermatological appointments may be related to the greater care they have with their skin, also reflecting women's greater concern with health in general. On the other hand, the larger demand by females for health services may be related to the socio-



**Fig. 3.1** Distribution of users by sex (Source: Dona Libânia Dermatological Center, 2020)



**Fig. 3.2** Distribution of users by age (Source: Dona Libânia Dermatological Center, 2020)

economic and labor structure in Brazil, especially in the North and Northeast regions, where there are more women without formal employment, who therefore have more time available to use the health service.

### The Nosological Profile of Users

The epidemiological data of the population who use the public dermatology health services are influenced by many factors, such as socioeconomic and educational profile, housing and hygiene, dietary habits, and finally, the circumstances of access to health services. It is possible to alter these data when analyzing the patient profile according to the cutaneous pathology being presented since there are diseases that mainly affect certain age group, such as acne, which predominates in adolescence, and skin cancer in older age groups.

Among the infectious and parasitic diseases that most often affect the skin, there are the ectoparasites (scabies, larva migrans, and pediculosis), superficial fungal infections (tinea, candidiasis, and tinea versicolor), the pyoderma (impetigo, folliculitis), and dermatoviroses (herpes, molluscum contagiosum, and warts). Leprosy and American cutaneous leishmaniasis are dermatological diseases with compulsory notification. The former due to its magnitude, preeminence, and its ability to cause incapacity and deformity, as well as being a transmissible disease that can be treated and controlled [28]. The notification of cases of American cutaneous

leishmaniasis in all its forms is mandatory, not only because of the disease's high incidence and wide geographical distribution, but also due to the possibility of it causing destructive wounds [28]. Notable among the noninfectious skin diseases are acne, psoriasis, vitiligo, skin cancer, contact dermatitis—as a work-related condition, and atopic dermatitis, particularly in children. There may or may not be a determinant socioeconomic profile for each of the above conditions.

In order to check the frequency of the main diagnoses in the practice of dermatologists in Brazil, the Brazilian Society of Dermatology conducted a survey with 932 dermatologists selected from the register of 4400 associates, working in both the public and private sectors. In addition to private services, the sample also included 49 SUS outpatient services that offer medical residency programs in Dermatology, distributed in all regions of the country. The diagnoses relating to outpatient dermatological care were recorded during a week in May 2006 and provide a picture of the demand for specialized dermatology care in Brazil, both in the public and private system [27].

The results were based on 57,343 dermatological appointments. During the study period (one week), there were more than 1000 different diagnoses, which is to be expected due to appointments with specialists that involve less common diseases whose diagnosis and monitoring need specialized care. Acne was the main reason for appointments and amounted to 14% of cases, followed by superficial mycosis (8.7%), pigmentation disorders (8.4%), and actinic keratosis (5.1%). The study also examined the proportion of return visits among the 25 most frequent causes, with Leprosy (78%), psoriasis (68%), and vitiligo (64%) originating the most subsequent visits. Leprosy was the 20th cause throughout the country, but the fourth in the Center-West Region [27].

The Brazilian Society of Dermatology (SBD) performed a similar survey in 2018 and collected data from 9629 appointments with 885 dermatologists all over the country, in the same week of the study conducted in 2006. In this survey, beyond data about patient demographics, diagno-

sis, consultation type according to the patient's funding, and the municipality of the consultation, data about treatments and procedures were included. As in the first study, the most frequent cause for consultation was acne (8.0%). Superficial mycosis and actinic keratosis remained among the five most frequent reasons for medical visits. The diagnosis of photoaging did not appear in the first survey in 2006, but was the second most frequent cause in 2018. Nonmelanoma skin cancer was the thirteenth cause in 2006, but the third general cause, in 2018. When we look just to the public funding scenario, it was the first cause of consultations in 2018 but the eighth cause in 2006 [5, 27].

The distribution of diagnoses by age group maintains acne as first cause of visits to the dermatologist for young people in both surveys. Bearing in mind that acne has a significant psychological impact, the high frequency of acne diagnosis, even considering the leading role of the private sector in making such diagnosis, shows the relevance of the public service offering not only clinical treatment, but also psychological support and health education initiatives aimed at the young population.

In the other side, for patients over 65 years, actinic keratosis and nonmelanoma skin cancer were predominant diagnosis, both in private and in public assistance, reinforcing the need for skin cancer prevention measures in the country. Interestingly, diagnosis of skin cancer predominated in the public sector, whereas in the private sector actinic keratosis was more frequent. This may reflect the delay in diagnosis and treatment resulting from difficulties of access to the public sector, as well as increased awareness of health problems of the population that uses the private sector [5].

As expected, the inclusion of private services has led to some bias regarding diseases with a higher diagnostic incidence, like photoaging and melasma, when comparing these data with the incidence of diagnosis in the public service alone.

In order to compare with the data from SBD studies, we performed an analysis of the profile of users in a referral public dermatological service in the Northeast region of Brazil, in the

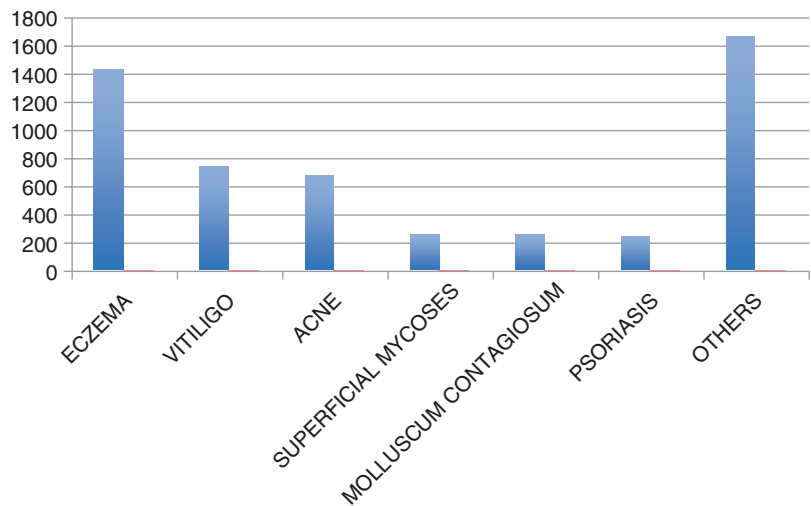
municipality of Fortaleza, state of Ceará, by the diagnosis of dermatological appointments, both the first appointment and subsequent ones. From the 33,397 consultations, between January 2018 and December 2019, 4131 (12.4%) were for the diagnosis or monitoring of patients with leprosy. This high frequency of leprosy cases is justified because the service is a national reference center and the main center in the state for this condition. (Unpublished data).

Among the other 29,266 consultations, excluding data on leprosy, there is a relevant incidence of eczemas, psoriasis, nonmelanoma skin cancer, vitiligo, and acne. This emphasizes the impor-

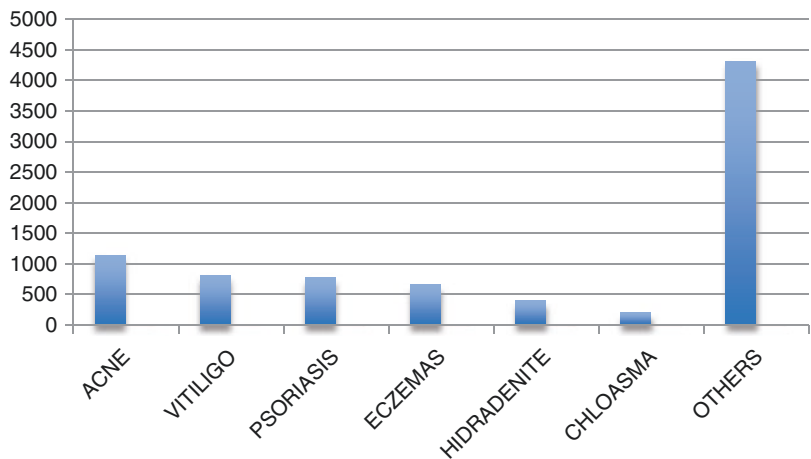
tance of such diseases as public health problems. The distribution of diagnoses differs by age group and can be seen in Figs. 3.3, 3.4, 3.5, and 3.6.

As seen above, the nosological user profile in dermatology depends on many variables such as gender, age, skin color, socioeconomic status, level of education, housing and hygiene, nutrition, access to health services, and the region or country where the appointment takes place, among others. In addition, in public health, the demand for dermatology services is also influenced by the resolutive capacity of primary care and the efficient functioning of the system of referral and response to referral by specialists.

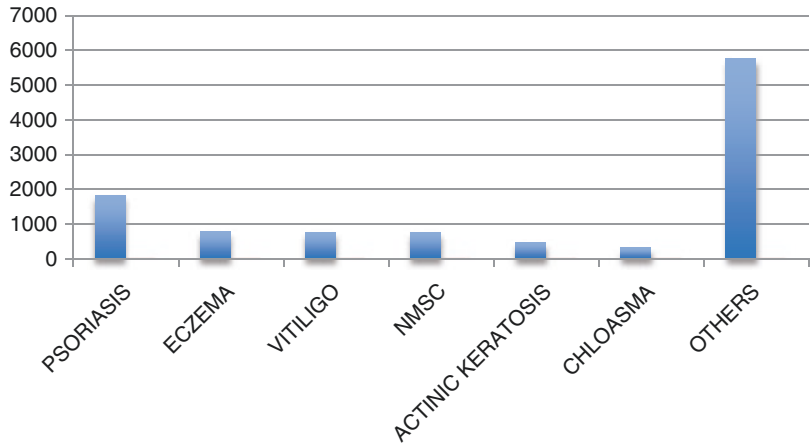
**Fig. 3.3** Distribution of appointments, by diagnosis and age groups, excluding Hansen’s disease—0 to 15 years old



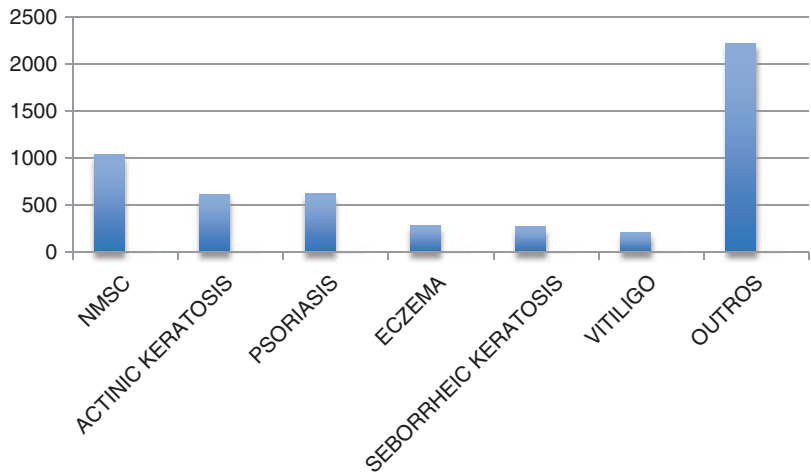
**Fig. 3.4** Distribution of appointments, by diagnosis and age groups, excluding Hansen’s disease—16 to 39 years old



**Fig. 3.5** Distribution of appointments, by diagnosis and age groups, excluding Hansen’s disease—40 to 64 years old



**Fig. 3.6** Distribution of appointments, by diagnosis and age groups, excluding Hansen’s disease—65 or more years old (Source: Dona Libânia Center for Dermatology, 2020)



### The Characteristics of a Public Health Dermatology Service

Considering the epidemiological reality in Brazil, as well as the current stage of the organization and the offer of dermatological services by the Unified Health System in the country, dermatological health actions planned and offered by a public health service in a particular area should seek to attain a resolute capacity (human resources, equipment, pharmaceuticals and biopharmaceuticals, laboratory supplies) required to treat the following priority diseases:

- Leprosy;
- Skin cancer (clinical and surgical actions);
- Infectious and parasitic skin diseases of childhood;

- Superficial and deep mycoses;
- Allergic dermatoses;
- American cutaneous leishmaniasis;
- Varicose eczema and other ulcerated lesions;
- Sexually transmitted diseases/AIDS;
- Clinical dermatoses, such as acne: psoriasis, vitiligo, collagen, and genodermatoses (Box 3.2).

#### Box 3.2 Activities of a Public Dermatology Service

- Medical appointments
- Nursing appointments
- Psychology appointments
- Physiotherapeutic rehabilitation activities



Occupational therapy activities  
 Phototherapy  
 Dermatoscopy  
 Skin biopsies  
 Surgery of tumors  
 Non-invasive procedures  
 Simple dressings  
 Debridement  
 Histopathology tests  
 Bacilloscopy in dermal infiltrate  
 Mycology Tests (direct and culture)  
 Hematology and biochemistry tests  
 Dispensing Medicines  
 Immunobiological infusion

Therefore, the resolubility of a public dermatology service is linked to the basic activities necessary for the diagnosis and treatment of such diseases. In 2018, for example, diagnostic and therapeutic surgical procedures were indicated in 26.4% of visits to dermatologists. The same study found that 1.3% of SUS patients had prescriptions for immunobiologicals, reflecting their high cost, which is dependent on public funding [5]. In addition, these activities should not only include medical attention, but also multidisciplinary care involving nurses, physiotherapists, occupational therapists, psychologists, and pharmacists, among others. These activities are summarized in Box 3.2.

Beyond offering care actions, a Dermatological health center should also be able to train primary care professionals, providing them with resolute capacity when dealing with the most prevalent diseases in each region. Such action is essential in order to overcome bottlenecks and the overloading of the specialized secondary care services.

Finally, it is fundamental that these services maintain a constantly evolving research sector, whether it is epidemiological, clinical, or operational, focused on overcoming the barriers to public health in the area of dermatology.

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