

Strengthening Global Commitments to UHC for Psoriatic Disease

I. Introduction & Context: Positioning Psoriatic Disease in the Current Global Health Context

In September 2023, a second High-Level Meeting on Universal Health Coverage (UHC) creates an opportunity for governments to renew their commitments toward UHC and the health priorities that it encompasses, including non-communicable diseases (NCDs) and psoriatic disease. To date, according to the World Health Organization (WHO), at least half of the world population still doesn't have full coverage of essential health services.¹

Psoriatic disease is a painful, severe, lifelong NCD affecting multiple body sites and primarily manifests in the skin and joints caused by a malfunction of the immune system.2 It is also often associated with comorbid diseases, the most common being obesity, hypertension, dyslipidemia, diabetes, cardiovascular disease, and inflammatory bowel disease – for example, people with severe psoriasis face a 46% higher risk of developing type 2 diabetes, and 58% are more likely to have a major cardiac event. These comorbidities are all NCDs.³ Therefore, UHC health benefit packages must include the treatment of psoriatic disease, and that approaches to care are holistic and people centered. However, access to care remains fragmented and difficult. Barriers include the difficulty of accessing care at the primary level, the high cost of treatments, and a lack of coordination in healthcare systems to manage NCD co-morbidities.

The 2023 State of UHC Commitment review finds that countries have opportunities for continued action, clarity, and investment in UHC for more comprehensive care. While many countries have set UHC as a goal in their national policies and plans, their focus has been on vertical, disease and service specific health programs with limited clear actions plans to achieve these efforts.⁴ Commitments to UHC have fluctuated in recent years. According to the International Health Partnership for UHC 2030 (UHC2030), the United Nations (UN) and WHO-supported coalition driving the Sustainable Development Goal of UHC, country commitments to UHC per year almost doubled between 2019 and 2021 following the 2019 UN High-level Meeting on UHC.⁵ Yet, in 2022, this trend slowed and even reversed in several countries.

In September, governments will have an opportunity to renew and reinforce their commitments toward UHC, with the opportunity of making NCDs care, including psoriatic disease care, more accessible globally.



What is UHC?

Universal health coverage (UHC) means that all people have access to the full range of quality health services and products they need, when and where they need them, without financial hardship. It covers the full spectrum of essential health services, from health promotion to prevention, treatment, rehabilitation, and palliative care across the life course. UHC makes sure that all individuals, including those most at risk, are covered and receive the needed intervention, so no one is left behind.

UHC means that health services must be made available to the people in need, and that these services are of high quality and affordable.⁶ It also ensures that individuals are protected from high out-of-pocket expenses — currently, 1.4 billion people are still facing catastrophic and/or impoverishing health spending.⁷

Primary Health Care (PHC) is considered to be the driving force for UHC, in particular as it empowers communities, makes possible the incorporation of new digital solutions into healthcare services, and encourages multisectoral action.⁸ This is particularly important for people living with psoriatic disease, as the majority of people with skin problems first seek care at the primary level.⁹

II. Scope and Purpose

Objectives:

- Highlight the links between psoriatic disease and ongoing global policy discussions on UHC;
- Define the barriers in access to care for people living with psoriatic disease globally in the context of UHC;
- Identify case studies across WHO regions that can offer elements of solutions in improving access to psoriatic care;
- Call on governments to renew and reinforce their commitments toward UHC, recognizing that NCDs, which include psoriatic disease, present specific challenges that make a UHC approach more necessary than ever.

Content:

- Challenge Identification: Defining the Links Between Psoriatic Disease and Ongoing Global Policy Discussions on Universal Health Coverage (UHC)
- 2. What Are the Current Barriers in Access to Psoriatic Disease Care Globally?
- 3. Case Studies
- 4. Recommendations to Stakeholders and Call-to-Action



III. Defining the Links Between Psoriatic Disease andOngoing Global Policy Discussions on UniversalHealth Coverage (UHC)

The WHO Psoriasis Resolution, which was adopted almost a decade ago in 2014, highlights the following elements:¹⁰



The Resolution called on the WHO to identify successful approaches for integrating the management of psoriasis into existing services for NCDs, which is necessary to improve the care of people living with psoriatic disease and to reduce the cost to individuals and societies. To date, most people living with psoriatic disease globally still manage their disease mainly through out-of-pocket expenses. Studies have shown that psoriatic disease represent a huge socioeconomic burden for both people living with the disease and the healthcare system – for example, the annual cost of psoriatic disease in the United States was estimated at US\$ 11.5 billion in 2008, with patient out-of-pocket costs accounting for 55% of the total direct costs of the disease.¹¹ In a study examining five European countries, it was estimated that the direct costs of psoriasis to be between US\$1,715 and US\$8,925, and indirect costs US\$364 and US\$4,207.¹²

For the majority of countries committed to the goal of universal health coverage through national action plans and supportive legislation, continued operational planning and public financing is still needed in order



to meet the UHC targets for 2030. Many of the countries' commitments do not address all three aspects of UHC:(1) service coverage, (2) population coverage, and (3) financial protection. 44% and 43% of commitments are focused on service coverage and population coverage respectively.¹³ Just 13% of countries define commitments to financial protection, a critical element for psoriatic disease given the cost burden.¹⁴

UHC2030 also demonstrated that there's still critical work needed to advance and confront systemic underinvestment and deprioritization of reducing financial barriers to healthcare. There's been no increase in primary healthcare spending in recent years and only 45% of countries have set specific national health spending goals in their healthcare plans and policies.¹⁵ The lack of investment combined with ongoing financial barriers continues to worsen the burden of NCDs. This has harmful effects across internationally established policy goals and targets for both UHC and NCD.¹⁶ Though the Global Action Plan for the Prevention and Control of NCDs (2013-2020) focuses on risk factors that psoriatic disease shares with other NCDs, including tobacco use, physical inactivity, unhealthy diet, and harmful use of alcohol, skin conditions are only briefly mentioned under other NCDs.¹⁷

Realizing the commitments to UHC and to health and wellbeing for all requires that the global community implement new models of care delivery. Health systems must embrace innovations in diagnosing, treating, and managing NCDs such as psoriatic disease, which require long-term care, access and adherence to treatment, psychosocial support, and coordination from care providers across disciplines. Furthermore, people living with psoriatic disease also have increased risks, as many individuals navigating this disease are at higher risk for developing one or more additional NCDs, like cardiovascular conditions, diabetes, cancer, and respiratory diseases.¹⁸

Fulfilling worldwide commitments to achieve universal health coverage would substantially improve global health and particularly the lives of people living with chronic conditions like psoriatic disease. UHC is key to reducing the burden of psoriatic disease by ensuring that populations have access to affordable basic healthcare, medicines, and treatment, and that individuals can be quickly and accurately diagnosed and receive early and appropriate treatment. As countries come closer to these global commitments, they can also strengthen their healthcare workforce to ensure that general practitioners have appropriate training for general management of skin diseases.



IV. Universal Healthcare-Focused Approaches Key to Enabling Psoriatic Disease Care

Building the global healthcare workforce to positively impact the diagnosis and treatment of people living with psoriatic disease

The global healthcare workforce shortage limits the number of providers available to provide care. An estimated 3 billion people globally lack adequate access to care for dermatological conditions.¹⁹ The WHO estimates that 15 million additional health workers are needed to achieve universal health coverage commitments, however health workers with dermatological or rheumatological expertise are even more limited.²⁰ Low numbers of dermatologists, in particular, are common even in high-income countries: Denmark, Sweden, and the UK all have fewer than 4 dermatologists per 100,000 people, the estimated number needed to provide adequate care.^{21,22}

Other specialists needed for management of psoriatic disease are similarly scarce, such as rheumatologists, immunologists, and endocrinologists. Even when patients are able to receive care from the limited number of providers available, long wait times and

short appointments are a barrier to the building of a relationship between patient and provider and to ensuring patients understand their condition and treatment options.²³ Issues with long wait times and short visits were further worsened by the COVID-19 pandemic, as outpatient dermatologic consultations decreased and visits for non-acute conditions were postponed.²⁴ In a survey conducted in the United States of 1005 patients, 101 dermatologists, and 100 rheumatologists, fewer than 60% of those with psoriasis alone (versus 85.6% of PsA patients) had seen a healthcare provider within 12 months.²⁵ Joint pain was reported by 51.8% of psoriasis patients without a diagnosis of PsA, and 37.6% of dermatologists cited their greatest challenge in managing PsA patients as differentiating PsA from other arthritic diseases.26

Empower primary care providers to address geographic disparities in provision of care

Low-to-middle income countries (LMICs) have severe shortages of healthcare providers with specialized training: Sub-Saharan Africa has fewer than 10 dermatologists per million people, with many areas having fewer than one dermatologist per million of population.²⁷ Uganda, for example, has ten dermatologists to serve its population of 35 million people, while Ethiopia has only 70 dermatologists for 100 million people.²⁸



Healthcare provider limitations also affect high-income countries, especially in rural areas: in a 2017 survey conducted in the United States, nearly 40% of dermatologists were found to practice in the 100 most densely populated urban areas, while not even 2% practice in the 100 least densely populated.²⁹ Approximately 70% of areas with at least one practicing dermatologist have less than 4 dermatologists per 100,000 people (the estimated number needed to provide adequate care).³⁰

Another study conducted in the United States showed that, despite an increase in the overall density of dermatologists, the gap between the density of dermatologists in urban and other areas worsened; this trend is likely to continue.³¹ Rural primary care providers see significantly more patients for dermatological conditions than urban dermatologists, likely due to the scarcity of specialist providers in rural areas.³² In these areas, providing nurses with specialized training and requiring psoriatic disease training for general practitioners (GPs) can help compensate for the lack of available specialists, while multidisciplinary care teams and community health workers can help improve quality of care, particularly in LMICs.33,34

Access to primary care

Opportunities for primary care providers to gain knowledge in psoriatic and dermatological care Primary care is a core component of universal health care and is especially critical to dermatological care. Many people with skin conditions including psoriasis first seek care at the primary care level, with skin conditions globally being a primary reason for people first seeking medical care.³⁵ A 2008 study in Scotland found that 8.4% of all claims billed by general practitioners were for dermatologic disorders.³⁶ 12.4% of diseases seen by family physicians were skin diseases in the Netherlands, while skin diseases comprised only 6.8% of those seen by family physicians in the United States.³⁷

However, not all primary care providers are adequately equipped to provide care, with referral rates varying widely among providers.³⁸ Requiring psoriatic disease training can better prepare general practitioners to address their patients' needs, while specialized training for nurses can reduce the burden on MDs, especially in limited-resource settings.^{39,40} In some regions, like the United Kingdom, the majority of people with psoriatic disease continue their disease management through a primary care practice, while in the United States only 22% of people have their psoriatic disease managed by their primary care provider.⁴¹ In Italy, a study noted that the active collaboration between GPs and specialists has a positive impact on access to psoriasis care and treatment.⁴² A primary care coordinated approach to psoriatic disease management recognizes the key



role that primary care providers can play in ensuring an integrated approach recognizing co-morbidities and psychosocial well-being—to care.^{43,44}

Prioritizing efforts to close treatment access gaps

Non-treatment and under-treatment of psoriatic disease is an ongoing issue even in high-resource regions with greater access to dermatological specialist care. In the United States, studies have estimated between 40% and 60% of patients with moderate to severe psoriatic disease were not receiving any treatment, while in Germany 45.9% of people living with psoriatic disease surveyed were not receiving treatment.^{45,46} More broadly, surveys of patients in Japan, North America, and Europe found that one in four are not receiving treatment, despite increasing numbers of treatment options.⁴⁷ The Understanding Psoriatic Disease Leveraging Insights for Treatment (UPLIFT) survey published in 2021, which comes as a follow-up to the Multinational Assessment of Psoriasis and PsA (MAPP) survey about the quality of life and unmet needs in patients with psoriatic disease of 2016, shows that many patients describing their psoriatic disease as moderate to severe were not receiving any medication despite progress in the number of available treatments for psoriatic disease.^{48,49} More research is needed to understand the underlying reasons for this trend.

A 2016 survey conducted by Novartis in 2016 revealed that many people living with psoriatic disease do not achieve the treatment goal of clear skin or think that this is a realistic goal. In particular, 28% of people surveyed said that they had to wait five years before receiving treatment that resulted in clear or almost clear skin.^{50,51}

Primary care providers, including community health workers and nurses, are uniquely well-suited to coordinate the many related care needs of people living with psoriatic disease because they are more likely to be integrated within communities, rather than limited to more densely populated areas as specialists are.⁵² Primary care providers are a way to alleviate barriers to access presented by specialist shortages.⁵³ Primary care providers can also better develop relationships over time with patients which increases treatment adherence, a key challenge among people living with psoriatic disease who are commonly dissatisfied with treatment.⁵⁴ Primary care providers are able to provide continuity of care and facilitate needed specialist intervention, particularly when considering psychosocial effects and quality of life.55

Access to medication and treatment

Despite an increasing number of treatment options, health system barriers remain in the access to psoriatic disease treatments



The cost of treatment is closely related to the severity of the disease. Therefore, the mildest forms of psoriatic disease are typically managed using topical treatments, while more severe forms might require systemic therapies, JAK inhibitors, or biologics, which can be expensive and represent a financial burden for patients depending on the health system they live in.⁵⁶ Even in countries that provide universal coverage and access to care for people living with psoriatic disease, access to psoriatic disease treatments can be fragmented. For example, in Denmark, topical corticosteroids with antimicrobials are not reimbursed, however the majority of biologics are provided by the hospital free of charge.⁵⁷ Denmark is also the country with the second largest proportion of patients paying the full price for prescribed medicines.^{58,59} A study showed that climate treatment, which consists in sending patients to countries with favorable climate conditions offering natural sun and access to





salty water, is unequally prescribed across the Nordic countries (Denmark, Sweden, and Norway). For example, only 11 out of 21 County Councils in Sweden offer climate treatment to people with psoriasis. In Norway, climate treatment is still not accepted as equal to other treatment forms, only considered a supplement to other treatments.⁶⁰

In China, though treatments for psoriatic disease are available and state subsidized, disparities in access remain between rural and urban areas. In Japan, because only board-certified specialists can provide biologics to patients with severe psoriasis, people living in rural areas without with such specialists might not receive the appropriate care.⁶¹ In the Philippines, biologics, conventional systemic therapies, and most topical treatments, including medicines in the WHO list of essential medicines for psoriatic disease, are not reimbursed by the health system, putting a high financial burden on patients.^{62,63} In its Global Psoriasis Report dated 2015, WHO highlighted that "at a minimum, public and private public and private facilities should provide the drugs included on the WHO Model List of Essential Medicines, including systemic therapies. Universal health coverage schemes should cover the costs of these treatments.⁶⁴

Healthcare providers at the primary care level, in particular pharmacists, are well positioned to raise treatment adherence

issues and self-management with psoriatic disease patients

Adherence is limited in patients receiving treatment for psoriatic disease, with various studies suggesting anywhere from 39% to 73% of patients do not use their medications as prescribed.⁶⁵ Reasons for non-adherence range, but the most commonly cited reasons include regimen complexity or unpleasantness, perceived lack of efficacy, or perceptions of being too time-consuming. Those with more severe psoriatic disease were also more likely to be less adherent, which may be caused by a loss of confidence in the efficacy of treatment.⁶⁶

People with better relationships with their providers were more likely to adhere to treatment, and these relationships can be fostered through better communication and patient education – which requires better provider education and training on psoriatic disease.^{67 68} Healthcare providers at the primary level are well positioned to raise this issue with their psoriatic disease patients. Community pharmacists are particularly well suited to ask patients about their satisfaction with their treatment, to give them information about treatment, such as dosing, and to provide them with advice about selfmanagement of the disease. ^{69,70,71}

Digital health and teledermatology: enhancing access to psoriatic disease care



Telemedicine provides accessible, effective care solutions for dermatological issues, including psoriatic disease.⁷²

Teledermatology is *"used by skin health* professionals to consult, triage, follow-up with, and educate patients".⁷³ More recently, remote monitoring platforms have expanded to empower psoriatic disease patients to self-assess and record their symptoms and to share photos and data with their providers. A study found that smartphonebased applications dedicated to the management of psoriatic disease can help to reduce depressive symptoms in people living with the disease.⁷⁴ Importantly, teledermatology has proven to be comparable in accuracy rates to conventional in-person care for diagnosis, management, and clinical outcomes.⁷⁵

Teledermatology offers many opportunities for both patients and healthcare professionals. The three main benefits are: (1) reducing wait time and increase access; (2) improving collaboration and communication; and (3) improving treatment. People with psoriatic disease often face long wait times and limited access to dermatologists due to a shortage of these specialists.⁷⁶ This limited access can lead to increased medical and psychiatric comorbidities, as well as a reduced quality of life. Consequently, increasing access to dermatologists is crucial for improving patient wellbeing and disease outcomes, and ultimately health equity, which is a cornerstone of UHC.⁷⁷

Teledermatology presents a viable solution to these challenges. It can increase access to specialist care, which is particularly helpful for those in rural areas or those without easy transportation access. Virtual visits require less or no travel and reduced in-office waiting time compared to in-person care, increasing convenience both for people living in rural areas and for those without ready access to transportation.⁷⁸ Creative solutions may integrate widely used communication tools such as WhatsApp to provide initial access and triage to a limited number of providers geographically distant from patients, such as in Botswana, where a single dermatologist is available within the government healthcare system.79

Teledermatology facilitates improved collaboration and communication among healthcare providers. Services like the UK's "Consultant Connect" allow immediate virtual interactions between GPs, paramedics, nurses, pharmacists, mental health clinicians, social workers, and relevant specialists, promoting a holistic and person-centered approach to care.

Importantly, virtual visits have the potential to improve treatment outcomes for psoriatic disease beyond what can be achieved with in-person care alone.⁸⁰ Several studies report that patients using virtual care services experience a reduction in



depressive mood and an improvement in symptoms attributed to better treatment adherence, appointment keeping, and closer contact with physicians.^{81,82} Thus, teledermatology is gaining recognition as a tool to reduce care costs, increase efficiency, and improve both clinician and patient satisfaction.⁸³ Despite the benefits of teledermatology, barriers remain in some areas such as slow

changes in reimbursement schemes, acceptance by healthcare providers, concerns about the quality of care provided, and challenges to service connectivity.^{84,85}

How WHO defines telemedicine

"The delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities."

Access to reimbursement

Expanding on opportunities for reimbursement to be streamlined and more comprehensive through UHC

While a number of types of treatment are available to people living with psoriatic disease, including topical therapeutics, phototherapy, and biological therapeutics, only a few countries fully reimburse treatment – including those countries, such as France, where psoriasis drugs are reimbursed.⁸⁶ Nevertheless, even in health systems that provide UHC and thus access to care to people living with psoriatic disease, barriers to reimbursement remain.

For example, in Denmark's health system, reimbursement depends upon annual consumption and treatment type: topical corticosteroids and antimicrobials are not reimbursed, while most biologic therapies are provided by the hospital with no out of pocket cost.⁸⁷ However, almost no one in Denmark living with psoriatic disease has the full cost of treatment fully covered, and the country has the second largest proportion of patients paying full price for their prescribed medications compared to other countries in Europe.⁸⁸ In Germany, physicians are restricted by prescribing budgets and are incentivized to fulfill preferred drug quotas, thus limiting access



and reimbursement to treatments outside of these budgets and quotas, which vary by region.⁸⁹ Reimbursement may also be timelimited, as in the case of Taiwan, which requires a lengthy procedure to qualify for reimbursement for biologics after which patients have a time limit of two years, even if symptoms are well-controlled while on the medication.⁹⁰ In Korea, patients are required to pay 60% of the cost of biologics out of pocket.⁹¹ In Australia, the vast majority of topical and conventional systemic therapies for treating psoriatic disease are available, along with most biologics.⁹² Australians under the public system pay a relatively small copayment for their medicines, meaning that even biologic treatments are relatively affordable for the average person with psoriatic disease.⁹³





Out-of-pocket expenses

Many treatments available have a significant out-of-pocket cost burden. In the US, more than half of drug costs are paid out-ofpocket by patients, while in Switzerland yearly out-of-pocket costs for ambulatory care per patient could be CHF9900 (USD\$10,750).^{94,95} In France, average yearly out-of-pocket expenses for the disease were estimated at €543 per patient.⁹⁶ Many people living with psoriatic disease also use over-the-counter treatments such as ointments and lotions that are not prescribed and add additional cost burdens on patients. Reimbursement for these expenditures is a cost-effective means of preventing symptoms from increasing in severity and avoiding more costly treatment.⁹⁷

The negative economic impact of psoriatic disease on people living with the disease

Many people living with this condition report missing work due to their treatment, higher levels of unemployment, lost productivity and lower quality of life. One 2012 study found that, among those surveyed, 49% of people living with psoriasis reported missing workdays due to psoriatic disease; among those, 31% missed more than 10 days.⁹⁸ People living with psoriatic disease face a further cost burden on top of the cost of treatment itself in the form of lost wages: in Canada, a 2009 study suggested mean wages of C\$2,270.84 per person per year were lost due to psoriatic disease-related missed work.⁹⁹ People living with severe psoriatic disease are 1.8 times more likely to be unemployed than those with mild psoriatic disease, indicating greater access to treatment that could improve disease severity would have broader economic benefits.¹⁰⁰ Psoriatic disease results in \$23 billion in indirect costs in the United States alone because of reduced quality of life and lost productivity.¹⁰¹ The results of a systemic literature review across five European countries shows that the annual total cost (both direct and indirect) of managing a patient with psoriatic disease ranges from USD\$10,205 – USD\$20,061.¹⁰² Across geographies, costs are proportional to the severity of disease with those with a more severe form of the disease incurring higher costs, particularly with the use of biologic treatments.¹⁰³



V. Case Studies: Advancing the Care of Psoriatic Disease Through a UHC Lens

Addressing psoriatic disease care within the context of UHC is possible. Countries worldwide have successfully implemented models of care that address the barriers to access to specialists and primary care providers, medicines and treatment, and reimbursement. Best practices can be found in different geographies and income levels. The below case studies in China, South Africa, Argentina, the United Kingdom, the United Arab Emirates, and Malaysia demonstrate best practices addressing various aspects of UHC for psoriatic disease care.

The Prince of Wales Hospital in Hong Kong: Offering comprehensive, patient-centered care to PsA patients¹⁰⁴

- Country, Region, or Territory: Hong Kong
- WHO Region: Western Pacific Region (WPR)
- UHC Area(s) Covered: Access to healthcare providers; Access to innovative tools and treatments
- Year: Started 2008 105

The Prince of Wales Hospital in Hong Kong offers an example of a multidisciplinary team which facilitates communication and collaboration between dermatology and rheumatology departments for holistic treatment. This provides a model for clinics and hospitals which may not have the necessary space to host a combined clinic; multidisciplinary teams are recognized as an effective model to improve psoriatic disease care, especially for patients with psoriatic arthritis.^{106,107,108,109}

The multidisciplinary team consists of 4 rheumatologists, 1 rheumatology nurse, 1 research nurse, 2 dermatologists, 6 nurses (including a department operation manager, ward managers, and nurses-in-charge), and several researchers. The division manages 485 patients, including 20 to 40 new PsA patients every year and 109 PsA patients who are part of the PsA research clinic. The routine clinic includes an outpatient clinic, a day clinic, and an in-patient service.

The nurse-led clinic for outpatient care was created to enable patients to talk to specialized healthcare professionals and obtain advice in between appointments with rheumatologists. Patients are typically referred to the nurse-led clinic by rheumatologists or by dermatologists, for which the waiting time to get an appointment is reduced. In rheumatology clinics, the nurse supports the clinical team by administering treatments, monitoring disease activity, assessing drug compliance and adverse effects, providing patient education and support, screening for comorbidities, and operating a



hotline. The current wait time for an appointment is 12 weeks.

A research clinic incorporates a two-year, protocol-driven program after which patients return to routine care. Researchers are investigating whether strategies aimed at remission can prevent bone loss and progression of atherosclerosis as both conditions may be associated with PsA.^{110,111} Out of the 485 patients treated at the hospital, 109 PsA patients are currently followed up on in the research clinic.^{112,113,114,115}Targeted Outcomes:

- Provide PsA patients at Prince of Whales Hospital with all necessary services located within the hospital, so that they do not need to be referred to other clinics which ensures continuity of care and improves patient experience.
- 2) Allow for knowledge sharing and management of PsA patients through a high level of informal collaboration and meetings across the multidisciplinary team, taking into account both joint and skin symptoms as well as associated comorbidities.
- Shorten long waiting times due to the limited number of rheumatologists through nurse-led focus.
- Provide high quality service to patients in need of biologics while conducting research.

Highlights:116,117

- Due to limited funding and lack of space within the hospital, there is currently no combined clinic during which PsA patients can be seen simultaneously by both specialists. However, the high level of collaboration and meetings across the multidisciplinary team allow for knowledge sharing, and PsA patients can be examined for both skin and joint symptoms.
- The clinic has a collaborative model of rheumatologist, junior doctors, nurses (including rheumatology nurses), dermatologists and other specialists.
- Prince of Wales Hospital has a nurse-led focus. The benefits of such a model allow for more patient-centric care while reducing the time for patients to have follow-up appointments with healthcare providers. This improves monitoring of the treatment efficacy and its adverse effects as well as regular screening for comorbidities and gives more opportunities for patients to receive additional support and information.
 Finally, this can help reduce hospital admissions.



 Incorporating a research clinic into the clinical service allows selected PsA patients to access treatment with biologics that would otherwise be unavailable to many, while allowing researchers to conduct clinical trials, which is more cost-effective and reduces the time for patients to be seen by a rheumatologist.

Insights for UHC:

Multidisciplinary care teams are recognized as an efficient model to provide holistic, patient-

centered care to people living with NCDs, including in the case of PsA. This case study demonstrates that even in cases when a multidisciplinary team can't be hosted under one clinic because of lack of space or because healthcare providers are located in different areas, this model can still be adopted if collaborative tools are put into place. By empowering nurses to provide outpatient care and to conduct regular check-ins with patients, this model can help reduce the workload of dermatologists and rheumatologists while improving quality of care for psoriatic patients.





Groote Schuur Hospital: A collaborative model of care for PsA patients with a focus on patient education and comorbidities in South Africa¹¹⁸

- Country, Region, or Territory: South Africa
- WHO Region: African Region (AFR)
- UHC Area(s) Covered: Access to healthcare providers / Access to innovative tools and treatments
- Year: Started 2016

Groote Schuur Hospital focuses on peer and patient education from rheumatologists, especially on signs of arthritis for patients, in order to combat the low awareness of psoriatic disease among general practitioners and limited numbers of rheumatologists. The hospital emphasizes a collaborative, team-based approach to increase collaboration and encourage a holistic approach to care. The holistic and collaborative approach also optimizes care for comorbidities such as hypertension, cardiovascular disease and diabetes, educating patients on the risk of developing these comorbidities and encouraging regular monitoring. More complex cases are referred to other hospital departments as needed. Groote Schuur also provides outreach to primary care clinics to improve access to care in hard-to-reach communities, addressing socioeconomic disparities and inconsistent, highly fragmented care.

The PsA team consists of 2 full-time rheumatologists, 2 part-time consultant physicians, 6 nurses (who provide general support), 1 medical officer (medical support personnel), several medical registrars and fellows and private dermatologists who come in for certain clinics. The clinic sees 220 patients monthly, with 5 new PsA cases monthly. In its arthritis clinic that operates twice a week, there are 100-120 patients per clinic, within which 20-30 are PsA patients. 90% of the patients are referred by specialist dermatology services, 5% by GPs in independent private practice, and 5% from other services like community health centers. This department collaborates closely with the specialist dermatology department at the hospital to which the majority of PsA patients are referred.

The routine clinic offers comprehensive care through its out-patient clinic, which offers initial treatment and follow-up, subcutaneous injections of biologics and musculoskeletal ultrasounds; its day clinic, which provides infusion of biologic treatments; and its in-patient service, for patients requiring tertiary care such as during flares, for overnight procedures, and infection treatment. The rheumatology clinic has established a close relationship with other hospital departments to facilitate collaborative clinical decision making for better care.



Targeted Outcomes:

- Improve referrals to specialists who can initiate the correct treatment and help patients cope with the disease.
- Improve care through a team-based, collaborative approach to care.
- Enhance screening of comorbidities of patients.
- Improve access to care in hard-to-reach communities through outreach activities.

Highlights:

- The team organizes educational sessions for primary care providers which focus on signs of arthritis and helps doctors identify which patients to refer to the specialists.
- Rheumatologists organize regular meetings with other departments. For instance, they meet with the radiology team each month to review X-ray scans and help clinicians differentiate between patients with different forms of arthritis (e.g., rheumatoid arthritis vs PsA).
- Clinicians make sure that patients are educated on the risk of developing various comorbidities and emphasize the need for regular monitoring. If comorbidities occur, patients are either treated by rheumatologists from the team or referred to other hospital departments.
- The outreach clinics include part-time consultant physicians and private dermatologists (for certain clinics).

Furthermore, it was possible to set up outreach clinics under hospital coverage in the community.

Insights for UHC:

Collaboration is at the core of this clinic, which groups all necessary services for patients together, therefore avoiding additional travels for patients. Education of healthcare providers at primary level, especially general practitioners, is critical to ensure that they can refer psoriatic disease patients to specialists in time.

Hospital Italiano: A innovative networks of rheumatology and dermatology combined clinics in Argentina¹¹⁹

- Country, Region, or Territory: Argentina
- WHO Region: Region of the Americas (AMR)
- UHC Area(s) Covered: Access to healthcare providers; Access to innovative tools and treatments.
- Year: Started 2016

The Hospital Italiano de Buenos Aires in Argentina offers a unique model of psoriatic disease care where patients are seen by both a rheumatologist and a dermatologist at the same time at a combined clinic that operates twice a week. Hospital Italiano (tertiary hospital), San Justo (secondary hospital) and 20 additional peripheral community health centers also joined the same health maintenance organization or



network, helping to speed referrals as a result of these relationships. Rheumatologists from Hospital Italiano hold clinics in San Justo and eight other community health centers, and all centers within the network refer patients to Hospital Italiano if psoriatic disease is suspected. To combat the limited awareness of psoriatic disease and its dual skin and joint involvement in doctors, patients, and the general public, the hospital invites rheumatologists from Argentina and from around the world to provide education for two and a half days each year on rheumatological conditions including psoriatic disease, in addition to training medical students as a teaching hospital.

To address a lack of data on delays between first symptom appearance and treatment, the hospital emphasizes the use of electronic medical records and rheumatological sonographers. The electronic medical records system is used throughout the health network, ensuring medical staff have accurate patient information including for referrals. Four rheumatologists on staff are specially trained in ultrasound for more accurate diagnoses and clinical evaluation.

The core PsA team consists of 6 consultant rheumatologists, 1 dermatologist, 4 rheumatologists sonographers (including in the six mentioned above), 9 rheumatology fellows (for a fellowship duration of three years per individual), 6 registrar rheumatologists, and several researchers. The center applies a multidisciplinary approach through a weekly combined clinic between rheumatologists and dermatologists where new patients have a consultation of up to 30 minutes with both a rheumatologist and a dermatologist (existing patients are likely to have a shorter consultation of 15 minutes). This provides a forum where both specialists can immediately share their opinions on a patient's condition. The combined clinics have 8-10 PsA patients per clinic, approximately 45 PsA patients per month. In total, they have 380 patients, of which 90% of patients are referred by GPs and 10% are selfreferred. Although the team consists primarily of rheumatologists, they work closely with their colleagues in dermatology and orthopedic surgery.

Targeted Outcomes:

- Improve treatment of more difficult cases of PsA through a combined clinic model where healthcare providers share expertise and make joint decisions based on a holistic approach to patient cases.
- Speed up referrals using a collaboration system with a network enables closer interaction between specialist rheumatologists and GPs in the peripheral centers.
- Ensure that all medical staff, administrative staff and patients have easy and accurate access to patient information via electronic medical records.





 Expand the use of ultrasound in clinical evaluation as it is a tool that allows the rheumatologist to assess skin, nails and joints.

Highlights:

 The multidisciplinary approach builds internal collaboration, while the healthcare network builds external collaboration. This model enables better treatment of complex PsA cases and allows rheumatologists and dermatologists to jointly analyze patients through shared expertise, leading to more informed decisions and improved patient experience. The network helps to speed up referrals because there is much closer interaction between specialist rheumatologists and GPs in the peripheral centers.

- The training and education enable sharing of the latest knowledge and findings across different centers. The program enhances doctors' ability to recognize PsA symptoms and relate musculoskeletal issues to skin problems, increasing awareness of this oftenundiagnosed disease.
- Electronic medical records increase access and accuracy to patient information across different healthcare providers. Specialty in sonography



supports diagnostic accuracy. Ultrasound is particularly useful for patients who are overweight or obese, as ultrasound is a more precise way of checking fingers or joints than a clinical examination.

Insights for UHC:

This case study highlights the proven relevance of multidisciplinary care teams in the management of complex NCDs such as PsA where different types of expertise are needed. It also demonstrates that other clinics and community health centers that might not have the resources to implement a full clinic can benefit from the expertise of others through an innovative system of collaboration where specialists in the main clinic hold clinics in external centers. This is particularly relevant for the detection of chronic conditions like psoriatic disease by making access to diagnosis easier at a community-level. Finally, the use of electronic medical records should be a priority for health systems that want to implement more efficient approaches that rely on collaboration across different providers.

A rapid-access clinic for psoriasis: the Psoriasis Rapid Access Clinic (P-RAC) in the UK¹²⁰

- Country, Region, or Territory: United
 Kingdom
- WHO Region: European Region (EUR)
- UHC Area(s) Covered: Access to healthcare providers

• Year: Pilot started October 2018

The Psoriasis Rapid Access Clinic (P-RAC) provides specialist and comprehensive care to newly diagnosed patients with a complete specialist assessment of their psoriatic disease as well as education about disease management. P-RAC focuses on early intervention and specialized care for people over 16 who are newly diagnosed, have developed psoriatic disease within two years, and have never received systemic treatment. The clinic is a research study in collaboration with the University of Manchester, Salford Royal NHS Foundation Trust and funded by Health Innovation Manchester. P-RAC is innovative, consultant-led, and multidisciplinary. The clinic combines specialist dermatology and health psychology management to address the clinical needs of the patients. Care is delivered by a specialist team including dermatology consultant, a health psychologist, and a dermatology nurse. Patients are referred in three ways: (1) electronic referral proforma; (2) general practice database searching to help identify patients; (3) referral from secondary care services, such as GPs with extended roles.

A dermatology consultant will assess the patient and develop a treatment plan for their psoriasis. Patients are then screened for co-morbidities associated with psoriasis. Patients are educated about their psoriasis with particular emphasis on promoting relevant healthy lifestyle choices. Throughout the process, all patients at this clinic have access to a health psychologist. The aim is



to empower patients to better self-manage their psoriasis, including optimizing use of prescribed topical treatments. A personalized care plan is developed to achieve these goals. P-RAC checks blood as part of the cardiovascular disease screen including HbA1c, cholesterol levels, and renal function. The clinic then calculates their 10-year cardiovascular disease risk using QRISK score. In addition, P-RAC seeks consent to take samples of blood for genomic, proteomic and cellular data analysis, which will provide insight into predictors of disease progression and treatment response.

Targeted Outcomes:

- Increase the ability of psoriatic disease patients to self-care, including improving adherence to medication and understanding of cardiovascular risk factors.
- Enable prompt access to dermatology specialists, and early referral to hospital services for those patients whose symptoms are more severe or those most at risk for co-morbidities.
- Improve the patient care journey by preventing and screening for serious comorbidities.
- Increase understanding of cardiovascular risk factors in the patient population.

Highlights:

 The clinic provides comprehensive diagnosis by checking for comorbidities at the same time. Patients are offered screenings for other conditions associated with the disease, such as cardiovascular disease, anxiety, and depression.

- Patients receive personalized treatment plans tailored to their specific condition and needs.
- Patients are empowered to engage in self-care as they learn about lifestyle factors that may trigger flare-ups, implement practical advice on using creams, and learn details of available treatments.
- The clinic collects blood samples for research purposes, aiming to test for genomic factors, to develop better and more personalized care in the future.

Insights for UHC:

Access to diagnosis at the primary level as well as continuity of services is crucial for the care of long-term conditions like NCDs. Healthcare providers at the primary level are best positioned to diagnose NCDs, including psoriatic disease, and guide patients in the next steps of their care journey, by providing them with information and advice about comorbidities and risk factors.¹²¹

The NHS Long-Term Plan to Optimize Referral with Skin Conditions¹²²

- Country, Region, or Territory: United
 Kingdom
- WHO Region: European Region (EUR)



- UHC Area(s) Covered: Access to healthcare providers
- Year: Started October 2018

The NHS Long Term Plan aims to improve patient experience by reducing face-to-face hospital visits through personalized, quality care delivered via primary and specialist providers. A fundamental component to support this transformation is referral optimization. More generally, the UK is recognized as a leader in the implementation of guidelines for quality care of psoriatic disease, while controlling the cost of care by optimizing its resources.¹²³ In the NHS, the rapid access two-week wait skin cancer pathway takes priority in most dermatology departments, leading to delayed access to care for individuals with other conditions like eczema, psoriatic disease, and acne, impacting their quality of life. This plan recognizes the benefits of referral optimization, particularly the use of specialist advice within dermatology as a means to address this inequity. The improved referral model will implement e-referral service advice and guidance followed by specialist triage, which facilitates a clinical dialogue before





the referral decision for more appropriate and timely care. The NHS Long Term Plan specifically targets low adherence to treatment plans requiring significant levels of self-care through five principles: strengthening primary care management; optimizing pre-referral specialist advice and guidance; implementing post-referral specialist advice and triage; enhancing monitoring and evaluation of specialist advice services advice and triage; and supporting self-care by equipping patients with the knowledge, skills, and confidence to live more independently.

The plan advances patient education through consistent promotion of public health messages; making available reliable patient information resources and support groups; providing written action plans in a format appropriate for each individual to ensure access to treatments; and developing and promoting structured education programs. The Simplified Psoriasis Index is a psoriatic disease self-assessment tool which enables both healthcare professionals and people living with psoriatic disease to regularly assess disease severity and individual wellbeing.¹²⁴

Because primary care is the first and primary source of disease management, the plan targets improving primary care specifically through identifying local and regional primary care providers providing excellent dermatological care; providing education and training to all primary healthcare professionals; promoting and advocating the use of teledermatology; establishing systems for clinical review of patients with long-term skin conditions; and undertaking quality improvement activity within primary care for patients affected by skin conditions. Primary care practitioners should know about and have access to high quality, easy to follow, pragmatic algorithms for the skin conditions they see and manage most often, such as the Primary Care Dermatology Society's treatment pathways for psoriasis. Primary care providers also screen for psoriatic arthritis and comorbid conditions, including through cardiovascular risk assessment.

Streamlining referral systems also encourages closer collaboration between general practitioners and specialists, to address GPs' historically limited training in dermatology and lack confidence in the use and quantities of topical treatment. With greater knowledge and collaboration from their providers, people with psoriatic disease will gain greater clarity about treatment regimens and have more support for the psychosocial impact of the disease. The plan also promotes effective systems to connect people with the disease with the right specialist the first time, connecting them with specialty care or nurse-led clinics as appropriate. Services will be further improved through monitoring and evaluation as changes are implemented.

Targeted Outcomes:

 Empower people living with long-term skin conditions, including psoriatic



disease, to increasingly manage their own care and live more independently.

- Provide necessary support to primary and community services to diagnose, treat, and support more patients closer to home, eliminating the need for unnecessary hospital referrals.
- Streamline the interface between generalist and specialist clinicians, enabling patients to receive optimal care at the earliest opportunity and prior to being referred to a specialist service.
- Ensure that specialist clinicians have the required information to determine the correct treatment plan, one that minimizes inconvenience for patients.
- 5) Improve the efficiency of triage systems and processes, so that if a referral is required, there are efficient pathways that immediately connect patients to the most suitable care service. This should be done in the right place, at the right time, and using the most appropriate modality (phone, video, face-to-face).

Highlights:

- This model encourages the education of patients about their condition and possible treatments, promoting public health messages, providing resources, and enabling self-assessment of disease severity (e.g., with tools like the Simplified Psoriasis Index).
- It supports a primary care approach to the diagnosis and care of skin conditions, where primary care providers

are given the tools they need to diagnose and guide patients. Examples of these tools include utilizing technologies like teledermatology, employing care algorithms for common skin conditions, and recognizing comorbidity risks.

- A collaboration between general practitioners and specialists is encouraged to improve patient guidance before the referral stage.
- The goal is to connect patients with the right specialist from the start, utilizing efficient triage systems and clearly identified care pathways.

Insights for UHC:

Expanding the role of primary care providers by giving them the right tools for diagnosis and clear information about referral is crucial to ensure people with skin conditions, including psoriatic disease, are diagnosed as early as possible and referred to the appropriate care providers. Nurse-led clinics at the primary care level can support treatment monitoring, especially topical treatments, and patient education in the long-term.



Tawam Hospital: Promoting better understanding about psoriasis among healthcare professionals, policymakers, and the public about the physical while empowering people living with the disease^{125,126}

- Country, Region, or Territory: United
 Arab Emirates
- WHO Region: Eastern Mediterranean
 Region (EMR)
- UHC Area(s) Covered: Access to primary care; Access to healthcare providers
- Year: 2019

Tawam Hospital, one of the largest healthcare institutions in the United Arab Emirates (UAE), initiated an awareness campaign to address the burden of psoriatic disease in the country. By providing accurate information and clarifying that psoriatic disease is not contagious, the campaign aims to combat stigma and promote empathy. The campaign aims to provide vital support for individuals living with psoriatic disease and ensure they do not have to suffer in silence. The campaign utilizes first-hand testimonials to humanize the condition and create empathy as well as awareness. Tawam Hospital also is building a support network for those living with psoriatic disease to connect and share experiences as well as practical advice.

The campaign also highlights the importance of early diagnosis, effective management, and

proper treatment to promote awareness and encourage individuals to seek appropriate care. Ultimately, the campaign strives to change the way people with psoriatic disease are perceived by healthcare professionals, policymakers, and the public, promoting greater understanding and support for individuals living with this chronic condition.

Targeted Outcomes:

- Raise awareness about psoriatic disease and its impact on people's lives and dispel misconceptions and addressing the stigma associated with the disease, while improving the well-being, quality of life, and overall outcomes for people living with psoriatic disease in the UAE.
- Provide vital support and resources for individuals living with the disease.
- Foster a supportive community where people living with psoriatic disease can connect, share experiences, and support each other.
- Promote understanding among healthcare professionals, policymakers, and the public about the physical, emotional, and social burdens of psoriatic disease.
- Encourage early diagnosis, effective management, and proper treatment of psoriatic disease.



Highlights:

- The campaign addresses
 misconceptions and highlights the
 burdens of psoriatic disease in concrete
 ways to healthcare providers,
 policymakers, and the general public.
- Disease education is important for both specialists and primary care providers.
- Building supportive communities where people living with psoriatic disease can find support, exchange experiences, and connect is part of the patient journey and provides learning benefits about the latest developments regarding treatments, for example, and improve mental health.

Insights for UHC:

Awareness of psoriatic disease, its comorbidities, and the toll it puts on individuals and society as a whole is the first necessary step for health systems to take the appropriate actions into improving psoriatic disease prevention, diagnostic, treatment and care. This case also shows that building supportive communities and working in partnerships is crucial to address all aspects of the disease, including its mental health impact.

Implementing clinical guidelines for psoriasis patients in Malaysia¹²⁷

Country, Region, or Territory: Malaysia

WHO Region: Western Pacific Region (WPR)

UHC Area(s) Covered: Access to Healthcare Provider/Access to Treatment

Year: 2017

The Ministry of Health and Ministry of Higher Education in Malaysia formed a development group and review committee for clinical practice guidelines for psoriatic disease. The guidelines support healthcare providers with guidance of assessments and treatment, of psoriatic disease cases. They also emphasize patient education, to provide people with psoriatic disease adequate information regarding their disease and current available treatment options. An informed and educated patient ensures that each treatment is a combined decision between the individual with psoriatic disease and their healthcare provider.

The assessment uses the Psoriasis Area and Severity Index (PASI), the gold standard to assess the physical severity of plaque-type psoriasis. PASI and Body Surface Area (BSA) are currently used as first-line assessments in Malaysian clinical practice guidelines. However, these two forms of assessment do not integrate the psychosocial impact of psoriasis located on critical areas such as face, hands and genitalia. The Dermatology Life Quality Index (DLQI) is used to measure the impact of psoriasis on a patient's quality of life. After initial assessment using these measures, if a patient is found to have joint swelling, dactylitis, spinal pain with significant early morning stiffness, the patient is referred to a rheumatologist. If there is no joint involvement, based on BSA, PASI, and DLQI, the



patient is referred to a dermatologist. The guidelines promote collaborative care between primary care physicians and dermatologists, ensuring continuity of care and effective management of psoriatic disease.

Targeted Outcomes:

- Assisting clinicians and other healthcare providers in making evidence-based decisions on the management of psoriatic disease by having specific guidelines to regulate and standardize treatment of psoriasis.
- Implementing treatment goals to improve outcome of people living with psoriatic disease.
- Providing tailored and individualized treatment for each person, maximizing the benefits and recovery progress they can receive.

Insights for UHC:

Clinical guidelines are important tools that healthcare providers use to guide diagnosis, define the most appropriate treatment for a patient, and determine the follow-up that should be conducted. To date, despite many countries having clinical guidelines for psoriasis and PsA, they are not always up-to-date with the latest treatments and not always implemented, especially in LMICs.¹²⁸ If countries are to achieve UHC, clinical guidelines for psoriatic disease should be developed and implemented at all levels to ensure that everybody can benefit from guality care, in particular, that patients are aware of the different treatment options available to them, and that appropriate follow-up can be conducted.

Recommendations / Call to Action

Strengthening global commitment to UHC for psoriatic disease is essential to ensure that all individuals receive the necessary care and support. To achieve this goal, a combination of interventions is needed along their entire care journey. Based on the case studies and taking into account the challenges and opportunities described above, the following recommendations offer a roadmap to link UHC approaches to psoriatic disease.

Foster integrated health systems.

Integrating psoriatic disease care into primary healthcare has the potential to improve early detection, diagnosis, and treatment. Enhancing collaboration between dermatologists, primary care practitioners, pharmacists, nurses, rheumatologists, and mental health professionals can help address the multidimensional aspects of psoriatic disease, and represent effective cost-saving solutions as well for health systems aiming toward UHC.

Strengthen health infrastructure and workforce.

Innovative models of care, such as multidisciplinary care teams, team-based community clinics, combined and nurse-led clinics, among others, are more adapted to the



needs of psoriatic disease patients. Overall, there is a need to enhance medical education and training programs to build a skilled and knowledgeable healthcare workforce capable of managing psoriatic disease effectively, including at the primary care level. These care management models should take a patientcentered approach which is core to UHC and has been recognized to be most effective to manage people with psoriatic disease, and build on existing models for the care of NCDs especially when it comes to early screening of psoriatic disease and its comorbidities.

Improve data collection.

National and global psoriatic disease registries should be established to track disease patterns, treatment outcomes, and health disparities. Ensuring that clinical guidelines across countries exist, are up-to-date, and implemented, will ensure that people living with psoriatic disease receive quality, person-centered care, and that data can be collected more systematically.

Leverage digital health solutions.

Telemedicine and digital health platforms can be further expanded to enhance access to healthcare for individuals in remote or underserved areas and to improve psoriatic disease care more broadly.

Empower and engage with people living with psoriatic disease.

People living with psoriatic disease all have different lived experiences with the disease, making a person-centered approach where they are supported in their care journey critical. National plans for psoriatic disease should highlight the need for shared decision-making, especially when it comes to treatment. Moreover, active collaboration between governments, patient groups and advocacy organizations, and medical societies is critical to the development and implementation of peoplecentered care guidelines. Advocacy organizations, in particular, have an opportunity to collaborate with UHC-focused organizations to raise awareness about psoriatic disease and the common comorbidities and risk factors it shares with NCDs.

Adopt inclusive and equitable approaches.

UHC policies should explicitly address the needs of people living with psoriatic disease, by promoting equitable access to healthcare services for people living with the disease, regardless of their socioeconomic status or geographic location. Psoriatic disease treatments, including over-the-counter products such as ointments and lotions that are out-ofpocket expenses, should be part of UHC packages.



¹ World Health Organization. "World Bank and WHO: Half the world lacks access to essential health services, 100 million still pushed into extreme poverty because of health expenses." 2017. Available at: https://www.who.int/news/item/13-12-2017-world-bank-and-who-half-the-world-lacks-access-to-essential-health-services-100-million-still-pushed-into-extreme-poverty-because-of-health-expenses.

² International Federation of Psoriasis Associations. "Our Cause – What is Psoriatic Disease?". Available at: <u>https://ifpa-pso.com/about-ifpa/our-cause.</u>

³ NCD Alliance. "Addressing NCDs: Psoriasis and its Co-morbidities." 2017. Available at: <u>https://ncdalliance.org/resources/addressing-ncds-psoriasis-and-its-co-morbidities.</u>

⁴ UHC2030. "State of UHC Commitment Review: key findings." 2021. Available at: https://www.uhc2030.org/fileadmin/uploads/uhc2030/SoUHCc_key_findings_final_EN.pdf.

⁵ Ibid.

⁶ International Federation of Psoriasis Associations. "Advocacy toolkit for universal health coverage." 2019. <u>https://ifpa-pso.com/resources-tools/advocacy-toolkit-for-universal-health-coverage.</u>

⁷ The World Bank & World Health Organization. "Global monitoring report on financial protection in health 2021." Available at: <u>https://apps.who.int/iris/rest/bitstreams/1399095/retrieve.</u>

⁸ NCD Alliance. "Universal Health Coverage (UHC)." <u>https://ncdalliance.org/why-ncds/universal-health-coverage-uhc.</u>

⁹ Ryan T. et al. "The Public Health Intervention of Skin Care for All: Community Dermatology." 2012. https://www.intechopen.com/books/public-health-social-and-behavioral-health/the-public-health-intervention-of-skin-care-for-allcommunity-dermology.

¹⁰ World Health Assembly. "Agenda Item: Psoriasis."2014. <u>https://apps.who.int/gb/ebwha/pdf_files/WHA67/A67_R9-en.pdf.</u>

¹ World Health Organization. "Global report on psoriasis." 2016. <u>https://www.who.int/publications/i/item/global-report-on-psoriasis.</u>

¹² R. Burgos-Pol et al. "The Cost of Psoriasis and Psoriatic Arthritis in 5 European Countries: A Systematic Review." Academia Española de Dermatología y Venerología. 2016. Available at <u>https://www.actasdermo.org/en-the-cost-psoriasis-psoriatic-arthritis-articulo-S1578219016301524</u>.

¹³ UHC2030. "State of UHC Commitment Review: key findings." 2021. Available at: <u>https://www.uhc2030.org/fileadmin/uploads/uhc2030/SoUHCc_key_findings_final_EN.pdf.</u>



¹⁴ Ibid.

15 Ibid.

¹⁶ NCD Alliance. "Universal Health Coverage (UHC). " Available at: <u>https://ncdalliance.org/why-ncds/universal-health-</u> <u>coverage-uhc</u>.

¹⁷ World Health Organization. "Global action plan for the prevention and control of NCDs 2013–2020." November 2013. Available at: <u>https://www.who.int/publications/i/item/9789241506236</u>.

¹⁸ Li X. et al. "Association between Psoriasis and Chronic Obstructive Pulmonary Disease: A Systematic Review and Meta-analysis." 2015. Available at: <u>https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0145221</u>.

¹⁹ Coustasse A. et al. "Use of teledermatology to improve dermatological access in rural areas."

Telemed. J. E Health. 2019. Available at: <u>https://pubmed.ncbi.nlm.nih.gov/30741608/.</u>

ⁱⁱ World Health Organization. "Global Strategy on Human Resources for Health: Workforce 2030: Reporting at Seventy-fifth World Health Assembly." 2022. Available at: <u>https://www.who.int/news/item/02-06-2022-global-strategy-on-human-resources-for-health--workforce-2030</u>.

²¹ Global Psoriasis Coalition. "Psoriasis Disease Response Index." 2020. Available at: <u>https://cms.ifpa-pso.com/tools/PsoriaticDiseaseResponseIndex_final.pdf.</u>

²² Mosam A. & Todd G. "Dermatology Training in Africa: Successes and Challenges." Dermatologic Clinics.2021. Available at: <u>https://www.sciencedirect.com/science/article/abs/pii/S073386352030067X?via%3Dihub.</u>

²³ Global Psoriasis Coalition. "Psoriasis Disease Response Index." 2020. Available at: <u>https://cms.ifpa-pso.com/tools/PsoriaticDiseaseResponseIndex_final.pdf.</u>

²⁴ Bhargava S. et al. "Global impact on dermatology practice due to the covid-19 pandemic." Clinics in Dermatology. 2021. Available at: <u>https://doi.org/10.1016/j.clindermatol.2021.01.017.</u>

²⁵ Lebwohl M. G. et al. "US Perspectives in the Management of Psoriasis and Psoriatic Arthritis: Patient and Physician Results from the Population-Based Multinational Assessment of Psoriasis and Psoriatic Arthritis (MAPP) Survey." 2016. Available at: <u>https://doi.org/10.1007/s40257-015-0169-x</u>.

²⁶ Ibid.

²⁷ Mosam A. et al. "Dermatology Training in Africa: Successes and Challenges." Dermatologic Clinics. 2021.
 Available at: <u>https://www.sciencedirect.com/science/article/abs/pii/S073386352030067X?via%3Dihub</u>.
 ²⁸ Global Psoriasis Coalition. "Psoriasis & Primary Care Report."2019. <u>https://cms.ifpa-pso.com/tools/PsoriasisandPrimaryCareReport_FINAL.pdf</u>.



²⁹ Glazer A et al. "Analysis of Trends in Geographic Distribution and Density of US Dermatologists." JAMA Dermatology. 2017. Available at: <u>https://jamanetwork.com/journals/jamadermatology/fullarticle/2599761</u>.
 ³⁰ Ibid.

³¹ Feng H et al. "Comparison of Dermatologist Density Between Urban and Rural Counties in the United States." JAMA Dermatol. 2018. Available at: <u>https://pubmed.ncbi.nlm.nih.gov/30193349/</u>.

³² Finstad A. "Provision of Dermatologic Care in a Universal Health Care System: A 17-Year Review." Journal of Cutaneous Medicine and Surgery.2021. Available at:

https://www.researchgate.net/publication/350805735_Provision_of_Dermatologic_Care_in_a_Universal_Health_Care_System_A_17-Year_Review#pfa.

³³ Global Psoriasis Coalition. "Psoriasis Disease Response Index." 2020. Available at: <u>https://cms.ifpa-pso.com/tools/PsoriaticDiseaseResponseIndex_final.pdf.</u>

³⁵ Ryan T. et al. "The Public Health Intervention of Skin Care for All: Community Dermatology." 2012. Available at: <u>https://www.intechopen.com/books/public-health-social-and-behavioral-health/the-public-health-intervention-of-skin-care-for-all-community-dermology</u>.

³⁶ Ibid.

37 Ibid.

³⁸ Global Psoriasis Coalition. "Psoriasis and Primary Care Report." 2023. Available at: <u>https://cms.ifpa-</u>

pso.com/tools/PsoriasisandPrimaryCareReport_FINAL.pdf.

³⁹ Global Psoriasis Coalition. "Psoriasis Disease Response Index." 2020. Available at: <u>https://cms.ifpa-pso.com/tools/PsoriaticDiseaseResponseIndex_final.pdf.</u>

⁴⁰ NCD Alliance. "Protecting Populations, Preserving Futures." 2019. Available at:

https://ncdalliance.org/sites/default/files/resource_files/ProtectingPopulationsPreservingFutures_FINAL_23Sept.pdf.

⁴¹ Global Psoriasis Coalition. "Psoriasis & Primary Care Report." 2019. Available at: <u>https://cms.ifpa-</u>pso.com/tools/PsoriasisandPrimaryCareReport_FINAL.pdf.

⁴² The Economist Intelligence Unit. "Encouraging policy action to address the psoriasis challenge." Available at: <u>https://impact.economist.com/perspectives/sites/default/files/Eli%20Lilly%20%20-</u> %20Encouraging%20policy%20action%20to%20address%20the%20psoriasis%20challenge.pdf.

⁴³ Wade A. G. et al. "Severity and management of psoriasis within primary care." 2016. Available at: https://bmcfampract.biomedcentral.com/articles/10.1186/s12875-016-0544-6.

⁴⁴ Global Psoriasis Coalition. "Psoriasis Disease Response Index." 2020. Available at: <u>https://cms.ifpa-pso.com/tools/PsoriaticDiseaseResponseIndex_final.pdf.</u>

⁴⁵ Armstrong A. et al. "Undertreatment, Treatment Trends, and Treatment Dissatisfaction Among Patients with Psoriasis and Psoriatic Arthritis in the United States: Findings From the National Psoriasis Foundation



Surveys, 2003-2011." JAMA Dermatology. 2013. Available at:

https://jamanetwork.com/journals/jamadermatology/fullarticle/1729130.

⁴⁶ Pilz A. et al. "Despite Large Choice of Effective Therapies: Individuals with Psoriasis Still Seem Undertreated." 2021. Available at: <u>https://onlinelibrary.wiley.com/doi/full/10.1111/ddg.14387</u>.

⁴⁷ Lebwohl M. "Evolution of Patient Perceptions of Psoriatic Disease: Results from the Understanding Psoriatic Disease Leveraging Insights for Treatment (UPLIFT) Survey." Dermatology and Therapy. 2022. Available at: <u>https://jofskin.org/index.php/skin/article/view/1219/pdf.</u>

48 Ibid.

49 Ibid.

⁵⁰ Geale K. et al. "Real-world data shows that achieving clear or almost clear skin significantly improves quality of life in patients suffering from moderate to severe psoriasis." Annual European Academy of Dermatology and Venereology (EADV) Congress. 2016.

⁵¹ Warren R. B. et al. "Patients with moderate-to-severe psoriasis do not believe clearance of their skin is a realistic treatment goal: results from the largest global psoriasis patient survey." Presented at the 25th Annual European Academy of Dermatology and Venereology (EADV) Congress. 2016.

⁵² Global Psoriasis Coalition. "Psoriasis and Primary Care Report." 2023. Available at: <u>https://cms.ifpa-pso.com/tools/PsoriasisandPrimaryCareReport_FINAL.pdf</u>.

53 Ibid.

 ⁵⁴ International Federation of Pharmaceutical Manufacturers and Associations (IFPMA). "Bringing Psoriasis Into the Light." 2023. Available at: <u>https://www.ifpma.org/wp-content/uploads/2023/01/i2023_Psoriasis_Publication-Web.pdf</u>.
 ⁵⁵ Young M. et al. "Psoriasis for the Primary Care Practitioner." Journal of the American Association of Nurse Practitioners. 2017. Available at <u>https://onlinelibrary.wiley.com/doi/full/10.1002/2327-6924.12443.</u>

⁵⁶ Le A. M. et al. Available at: "Deucravacitinib for the Treatment of Psoriatic Disease." August 2022. Available at: <u>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9372960/</u>

⁵⁷ M.T. Svendsen. "Use of topical antipsoriatic drugs in Denmark: a nationwide drug utilization study." British Association of Dermatologists. 2018. Available at: <u>https://pubmed.ncbi.nlm.nih.gov/30098007/.</u>

⁵⁸ IFPA International Federation of Psoriasis Associations. "Psoriasis Disease Response Index." October 2020. Available at: <u>https://ifpa-pso.com/projects/psoriatic-disease-response-index</u>.



⁵⁹ "Denmark—World Psoriasis Happiness Report." LEO Innovation Lab & The Happiness Research Institute. 2018. Available at: <u>https://ifpa-pso.com/resources-tools/world-psoriasis-happiness-report-2018</u>.

⁶⁰ NORDSPO. "The impact of climate treatment on quality of life for psoriasis patients – How can we secure equal access now and in the future?" 2021. Available at:

https://psoriasis.dk/sites/psoriasis.dk/files/media/document/Nordic%20Whitepaper%20on%20Climate%20Treatment_NORDPSO_Psor iasisforeningen.pdf.

⁶¹ IFPA International Federation of Psoriasis Associations. "Psoriatic Disease Response Index: Western Pacific Region." 2023. Available at: <u>https://ifpa-pso.com/projects/psoriatic-disease-response-index</u>.

62 Ibid.

⁶³ IFPA International Federation of Psoriasis Associations. "Psoriasis Disease Response Index." October 2020. Available at: <u>https://ifpa-pso.com/projects/psoriatic-disease-response-index</u>.

⁶⁴ World Health Organization. "Global report on psoriasis." 2016. <u>https://www.who.int/publications/i/item/global-report-on-psoriasis.</u>

⁶⁵ Bewley A. et al. "Maximizing Patient Adherence for Optimal Outcomes in Psoriasis." JEADV. 2011.
Available at: <u>https://onlinelibrary.wiley.com/doi/full/10.1111/j.1468-3083.2011.04060.x</u>.
⁶⁶ Ibid.
⁶⁷ Ibid.

⁶⁹ Tucker R. et al. "The role of community pharmacists in supporting self-management in patients with psoriasis." Int J Pharm Pract. 2017. Available at: <u>https://pubmed.ncbi.nlm.nih.gov/27488688/</u>.

⁷⁰ Teixeira A. et al. "Knowledge and Practices of Community Pharmacists in Topical Dermatological Treatments." International journal of environmental research and public health. 2021. Available at: https://doi.org/10.3390/ijerph18062928.

⁷¹ Tucker R. et al. "The role of community pharmacists in the management of skin problems." Journal of Pharmaceutical Care & Health Systems. 2014. Available at: <u>https://www.longdom.org/open-access/the-role-of-community-pharmacists-in-the-management-of-skin-problems-33722.html</u>.

⁷² Global Psoriasis Coalition, "Psoriasis and Primary Care Report." 2023. Available at: <u>https://cms.ifpa-pso.com/tools/PsoriasisandPrimaryCareReport_FINAL.pdf.</u>

⁷³ British Association of Dermatologists. "Teledermatology". Available at: <u>https://www.bad.org.uk/clinical-</u> services/teledermatology/.



⁷⁴ Rijsbergen M. et al. "Mobile e-diary application facilitates the monitoring of patient-reported outcomes and a high treatment adherence for clinical trials in dermatology." August 2019. Available at: <u>https://onlinelibrary.wiley.com/doi/full/10.1111/jdv.15872</u>.

⁷⁵ Whited J. D. "Teledermatology." The Medical clinics of North America. 2016. Available at: <u>https://doi.org/10.1016/j.mcna.2015.07.005</u>.

⁷⁶ Ford A. R. et al. "Access to Dermatological Care with an Innovative Online Model for Psoriasis Management: Results from a Randomized Controlled Trial." Telemedicine journal and e-health : the official journal of the American Telemedicine Association. 2019. Available at: <u>https://doi.org/10.1089/tmj.2018.0160</u>.

⁷⁷ NCD Alliance. "Protecting Populations, Preserving Futures." 2019. Available at: <u>https://ncdalliance.org/sites/default/files/resource_files/ProtectingPopulationsPreservingFutures_FINAL_23Sept.pdf</u>.

78 Ibid.

⁷⁹ V. Williams et al. "WhatsApp: An Innovative Tool for Dermatology Care in Limited Resource Settings."
 2018. Available at: <u>https://www.liebertpub.com/doi/abs/10.1089/tmj.2017.0197?journalCode=tmj</u>.
 ⁸⁰ Ibid.

⁸¹ Schmieder A. "Smartphone App for Patients With Psoriasis Proves Beneficial." 2021. Available at: <u>https://www.physiciansweekly.com/smartphone-app-for-patients-with-psoriasis-proves-beneficial.</u>

⁸² Armstrong A.W. et al. "Effectiveness of Online vs In-Person Care for Adults With Psoriasis: A Randomized Clinical Trial." JAMA Netw Open. 2018. Available at: https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2705854.

⁸³ Ibid.

⁸⁴ Kennedy J. et al. "Dermatologist Perceptions of Teledermatology Implementation and Future Use After COVID-19." JAMA Dermatol. 2021. Available at: <u>https://jamanetwork.com/journals/jamadermatology/fullarticle/2778026</u>.

⁸⁵ Joszt L. "Future of Teledermatology After Pandemic Is Unclear." 24 April 2021. Available at: <u>https://www.chiefhealthcareexecutive.com/view/future-of-teledermatology-after-pandemic-is-unclear</u>

⁹¹Global Psoriasis Coalition, "Psoriasis Disease Response Index." 2020. Available at: <u>https://cms.ifpa-pso.com/tools/PsoriaticDiseaseResponseIndex_final.pdf</u>

92 Ibid.



⁸⁶ The Economist Intelligence Unit. "Encouraging policy action to address the psoriasis challenge." Available at: https://impact.economist.com/perspectives/sites/default/files/Eli%20Lilly%20%20- %20Encouraging%20policy%20action%20to%20address%20the%20psoriasis%20challenge.pdf.

⁸⁹ Ibid.

⁹⁰ Tada Y et al. "Uncovering the unmet needs among psoriasis patients in the Asia-Pacific region." J Dermatol. 2021. Available at: <u>https://doi.org/10.1111/1346-8138.16072</u>.

⁹¹ Youn S. "The Marcopolo Study of ustekinumab utilization and efficacy in a real-world setting: Treatment of patients with plaque psoriasis in Asia-Pacific countries." Annals of Dermatology. 2016. Available at: https://doi.org/10.5021/ad.2016.28.2.222.

⁹² IFPA International Federation of Psoriasis Associations. "Psoriatic Disease Response Index: Western Pacific Region." 2023. Available at: <u>https://ifpa-pso.com/projects/psoriatic-disease-response-index</u>.

93 Ibid.

 ⁹⁴ International Federation of Pharmaceutical Manufacturers and Associations (IFPMA). "Bringing Psoriasis Into the Light." 2023. Available at: <u>https://www.ifpma.org/wp-content/uploads/2023/01/i2023_Psoriasis_Publication-Web.pdf</u>.
 ⁹⁵ Ibid.

⁹⁶ Richard P et al. "Out-of-pocket expenditures in France to manage psoriasis in adult patients: results from an observational, cross-sectional, non-comparative, multicentre study." Journal of the European Academy of Dermatology and Venereology. 2021. Available at: <u>https://doi.org/10.1111/jdv.17000</u>.

⁹⁷ Global Psoriasis Coalition. "Psoriasis Disease Response Index." 2020. Available at: <u>https://cms.ifpa-pso.com/tools/PsoriaticDiseaseResponseIndex_final.pdf</u>.

⁹⁸ Armstrong A. et al. "Quality of Life and Work Productivity Impairment among Psoriasis Patients: Findings from the National Psoriasis Foundation Survey Data 2003-2011." PLOS One. 2012. Available at: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0052935.

⁹⁹ Chan B. "Work-Related Lost Productivity and Its Economic Impact on Canadian Patients with Moderate to Severe Psoriasis." Journal of Cutaneous Medicine and Surgery. 2009. Available at: https://journals.sagepub.com/doi/abs/10.2310/7750.2009.08068.

¹⁰⁰ Ibid.

¹⁰¹ Burgos-Pol R. et al. "The Cost of Psoriasis and Psoriatic Arthritis in 5 European Countries: A Systematic Review." 2016. Available at: <u>https://www.actasdermo.org/en-the-cost-psoria-sis-psoriatic-arthritis-articulo-S1578219016301524</u>.

¹⁰² Global Psoriasis Coalition. "Psoriasis Disease Response Index." 2020. Available at: <u>https://cms.ifpa-pso.com/tools/PsoriaticDiseaseResponseIndex_final.pdf.</u>

¹⁰³ Galloway J. et al. "The impact of disease severity and duration on cost, early retirement and ability to work in rheumatoid arthritis in Europe: an economic modelling study." Rheumatology advances in practice. 2020. Available at: <u>https://doi.org/10.1093/rap/rkaa041</u>



¹⁰⁴ KPMG. Improvement in the management of Psoriatic Arthritis. 2016. Available at: <u>https://assets.kpmg.com/content/dam/kpmg/uk/pdf/2017/01/improvement-management-psoriatic-arthritis.pdf</u>.

¹⁰⁵ Department of Medicine & Therapeutics, The Chinese University of Hong Kong. "Division of Rheumatology." Available at: <u>https://www.mect.cuhk.edu.hk/specialties/rheumatology.html.</u>

¹⁰⁶ Koren J. et al. "Elevating the Standard of Care for Patients with Psoriasis: 'Calls to Action' from Epicensus, a Multistakeholder Pan-European Initiative." Dermatology and therapy. 2023. <u>https://doi.org/10.1007/s13555-022-00846-3.</u>

¹⁰⁷ Zheng Y. X., & Zheng M. "A multidisciplinary team for the diagnosis and management of psoriatic arthritis." Chinese Medical Journal. 2021. Available at: <u>https://doi.org/10.1097/CM9.000000000001588.</u>

¹⁰⁸ The Economist Intelligence Unit. "Encouraging policy action to address the psoriasis challenge." Available at: <u>https://impact.economist.com/perspectives/sites/default/files/Eli%20Lilly%20%20-</u> %20Encouraging%20policy%20action%20to%20address%20the%20psoriasis%20challenge.pdf.

¹⁰⁹ Visalli E et al. "Multidisciplinary Management of Psoriatic Arthritis: The Benefits of a Comprehensive Approach." 2019. Available at: <u>https://doi.org/10.1007/s12325-019-00901-0</u>.

^w Zhu T. H., et al. "Density, structure, and strength of the distal radius in patients with psoriatic arthritis: the role of inflammation and cardiovascular risk factors." Osteoporos Int. 2015. Available at: <u>https://pubmed.ncbi.nlm.nih.gov/25160570/</u>.

^{III} Ernste F., et al. "Cardiovascular risk profile of patients with psoriatic arthritis compared to controls—the role of inflammation." Rheumatology. 2018. Available at: <u>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4482766/</u>.

¹¹⁸ KPMG. Improvement in the management of Psoriatic Arthritis. 2016. Available at: https://assets.kpmg.com/content/dam/kpmg/uk/pdf/2017/01/improvement-management-psoriatic-arthritis.pdf.

¹¹⁹ KPMG. Improvement in the management of Psoriatic Arthritis. 2016. Available at: <u>https://assets.kpmg.com/content/dam/kpmg/uk/pdf/2017/01/improvement-management-psoriatic-arthritis.pdf</u>.



¹²⁰ Reid C. et al. "A rapid access clinic for psoriasis: first experience." March 2022. Available at: <u>https://onlinelibrary.wiley.com/doi/full/10.1111/bjd.21242</u>.

¹²¹ Varghese C et al. "Better health and wellbeing for billion more people: integrating non-communicable diseases in primary care". BMJ. 2019. Available at: <u>https://www.bmj.com/content/364/bmj.l327</u>.

¹²² NHS England. "Referral optimisation for people with skin conditions". September 2022. Available at: https://www.england.nhs.uk/long-read/referral-optimisation-for-people-with-skin-conditions/.

¹²³ Global Psoriasis Coalition. "Psoriasis Disease Response Index." 2020. Available at: <u>https://cms.ifpa-pso.com/tools/PsoriaticDiseaseResponseIndex_final.pdf.</u>

¹²⁴ Global Psoriasis Atlas. Resources – Simplified Psoriasis Index (SPI). Accessed August 2023. Available at: https://www.globalpsoriasisatlas.org/en/resources/simplified-psoriasis-index.

¹²⁵ ZAWYA. "Tawam Hospital launches national campaign to address the burden of Psoriasis in the UAE." 16 June 2019. Available at: <u>https://www.zawya.com/en/press-release/tawam-hospital-launches-national-campaign-to-address-theburden-of-psoriasis-in-the-uae-rak4vyp3</u>.

¹²⁶ Emirates New Agency-Wam. "SEHA provides life-changing treatments to patients suffering with Psoriasis." 29 October 2021. Available at: <u>https://www.wam.ae/en/details/1395302986486</u>.

¹²⁷ Malaysia Health Technology Assessment Section (MaHTAS) Medical Development Division, Ministry of Health Malaysia. "Management of Psoriasis Vulgaris". 2013. Available at : <u>https://www.moh.gov.my/moh/attachments/8438.pdf</u>.

¹²⁸ Global Psoriasis Coalition. "Psoriasis Disease Response Index." 2020. Available at: <u>https://cms.ifpa-pso.com/tools/PsoriaticDiseaseResponseIndex_final.pdf.</u>

