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Data analysis report

Prevalence of palmoplantar psoriasis and pustular psoriasis in children

Administrative details of the data analysis	
Short title of topic	Prevalence of palmoplantar and pustular psoriasis in children
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1. Rationale and background

In order to support regulatory discussions on treatment of palmoplantar psoriasis, it was of interest to study the prevalence of palmoplantar and pustular psoriasis in children 0-11 and 12-17 years during the last 10 years.

2. Research question and objectives

The objective of this study was to estimate the yearly prevalence of palmoplantar and pustular psoriasis in children 0-17 years between 2012 and 2021, by age group (0-11 years and 12-17 years).

3. Research methods

3.1. Study design

The study was a descriptive study of yearly disease prevalence in children.

3.2. Setting and study population

The study population consisted of children 0-17 years visiting GP practices. In IQVIA™ Disease Analyzer Germany, where paediatricians are also included in the primary care of children, both GP practices and paediatric practices were included.

3.3. Variables

In the IQVIA™ Disease Analyzer databases a diagnosis of palmoplantar and pustular psoriasis was identified using the WHO ICD 10 codes L40.1 (Generalized pustular psoriasis) and L40.3 (Pustulosis palmaris et plantaris).

3.4. Data sources

The study was conducted using version December 2021 of the IQVIA™ Disease Analyzer France and Germany databases, version February 2022 of the THIN® Romania database, and version January 2022 of the IQVIA™ Medical Research Data (IMRD)-UK database. A brief description of each database is given in Annex 1.

3.5. Statistical analysis

3.5.1. Main statistical methods

The prevalence was calculated using all children that were observable for at least one day during the year in the denominator. Children were included in the denominator according to their respective age group. Children were included in the numerator if they had a diagnosis of palmoplantar or pustular psoriasis during the year or earlier. Prevalence was calculated per 100,000 children.

3.5.2. Sensitivity analysis

No sensitivity analysis was conducted.

3.6. Quality control

The study was conducted according to the ENCePP code of conduct (European Medicines Agency 2018).

Standard operating procedures or internal process guidance were adhered to for the conduct of the study. These procedures include rules for secure and confidential data storage, quality-control procedures for all aspects of the study from protocol development to the reporting of the results.

All documents underwent at least one round a review by an experienced reviewer, while the results from the statistical analysis were reviewed.

The quality control of the data is the responsibility of the data holder.

4. Results

4.1. *Descriptive data*

The total number of children 0-17 years with a diagnosis of palmoplantar or pustular psoriasis, by diagnosis, for IQVIA™ Disease Analyzer France & Germany, IMRD (UK) and THIN Romania is shown in Table 1 below.

For THIN Spain and Italy diagnostic coding are made use the ICD9 classification system, which is not sufficiently granular to detect the conditions of interest: palmoplantar and pustular psoriasis would both be included in ICD9 code 696.1 "Other psoriasis" which includes many similar such diagnoses and so is not specific to the condition of interest.

Table 1. Total number of children (0-17 years) with a palmoplantar or pustular psoriasis diagnosis by diagnosis

Data source	Total number of children 0-17 years with palmoplantar or pustular psoriasis	Number of children 0-17 years with palmoplantar psoriasis	Number of children 0-17 years with pustular psoriasis
IQVIA™ Disease Analyzer France	222	4	218
IQVIA™ Disease Analyzer Germany	147	64	85
IMRD (UK)	224	37	189
THIN® Italy	sufficiently granular diagnostic codes are not used		
THIN® Spain	sufficiently granular diagnostic codes are not used		
THIN® Romania	<10	<10	<10

4.2. *Main results*

4.2.1. Palmoplantar psoriasis

The prevalence of palmoplantar psoriasis in children 0-17 years in IQVIA™ Disease Analyzer France and Germany per 100,000 children by year and age group (0-11 years and 12-17 years) is shown in Tables 2 and 3 below. The respective data for THIN Romania and IMRD (UK) are shown in tables 4 and 5.

*Table 2 Yearly prevalence of palmoplantar psoriasis in children 0-17 years in IQVIA™ Disease Analyzer France**

Age group	Year	prevalent cases	population	Prevalence per 100,000 (95% confidence interval)
0-11	2012	<10	-	1,27 (0,00-3,77)
	2013	<10	-	2,19 (0,00-5,23)
	2014	<10	-	1,85 (0,00-4,41)
	2015	<10	-	1,68 (0,00-4,00)
	2016	<10	-	1,57 (0,00-3,76)
	2017	<10	-	1,59 (0,00-3,78)
	2018	<10	-	0,80 (0,00-2,38)
	2019	<10	-	1,64 (0,00-3,90)
	2020	<10	-	0,99 (0,00-2,92)
	2021	0	91,376	0,00 (0,00-NA)
12-17	2012	<10	-	2,86 (0,00-8,46)

Age group	Year	prevalent cases	population	Prevalence per 100,000 (95% confidence interval)
	2013	<10	-	2,45 (0,00-7,25)
	2014	<10	48,652	2,06 (0,00-6,08)
	2015	0	54,155	0,00 (0,00-NA)
	2016	0	57,417	0,00 (0,00-NA)
	2017	0	58,579	0,00 (0,00-NA)
	2018	<10	-	1,71 (0,00-5,06)
	2019	<10	-	1,72 (0,00-5,10)
	2020	<10	-	1,97 (0,00-5,83)
	2021	<10	-	4,82 (0,00-11,50)

* The same child could be included in both age groups if the child was observable both at age 11 years and at age 12 years during the same year, based on availability of data on month of birth.

*Table 3 Yearly prevalence of palmoplantar psoriasis in children 0-17 years in IQVIA™ Disease Analyzer Germany**

Age group	Year	prevalent cases	population	Prevalence per 100,000 (95% confidence interval)
0-11	2012	6	533,752	1,12 (0,22-2,02)
	2013	6	577,967	1,04 (0,21-1,87)
	2014	6	605,048	0,99 (0,20-1,79)
	2015	6	620,537	0,97 (0,19-1,74)
	2016	10	692,933	1,44 (0,55-2,34)
	2017	7	716,619	0,98 (0,25-1,70)
	2018	12	715,176	1,68 (0,73-2,63)
	2019	13	696,238	1,87 (0,85-2,88)
	2020	9	615,739	1,46 (0,51-2,42)
	2021	6	540,963	1,11 (0,22-2,00)
12-17	2012	3	214,906	1,40 (0,00-2,98)
	2013	6	235,374	2,55 (0,51-4,59)
	2014	5	247,087	2,02 (0,25-3,80)
	2015	6	254,859	2,35 (0,47-4,24)
	2016	7	283,146	2,47 (0,64-4,30)
	2017	12	294,392	4,08 (1,77-6,38)
	2018	14	291,275	4,81 (2,29-7,32)
	2019	14	284,043	4,93 (2,35-7,51)
	2020	16	260,069	6,15 (3,14-9,17)
	2021	14	227,465	6,15 (2,93-9,38)

* The same child was only included in one age group during the same year due to non-availability of data on month of birth and an assigned birth date on 1 January birth-year.

Table 4. Yearly prevalence of with palmoplantar psoriasis in children 0-17 years in THIN Romania

Age group	Year	prevalent cases	population	Prevalence per 100,000 (95% confidence interval)
0-11	2012	0	3,041	0.00 (0.00-126.2)
	2013	0	4,535	0.00 (0.00-84.64)
	2014	<10	-	3.91 (0.69-22.16)
	2015	<10	-	2.53 (0.45-14.34)
	2016	<10	-	2.01 (0.36-11.40)
	2017	<10	-	3.81 (1.04-13.89)
	2018	0	47,252	0.00 (0.00-8.13)
	2019	0	47,454	0.00 (0.00-8.09)
	2020	0	55,838	0.00 (0.00-6.88)
	2021	0	54,408	0.00 (0.00-7.06)
12-17	2012	0	4,774	0.00 (0.00-80.40)
	2013	0	7,477	0.00 (0.00-51.35)
	2014	0	57,841	0.00 (0.00-6.64)
	2015	0	81,294	0.00 (0.00-4.73)
	2016	<10	-	1.14 (0.20-6.47)

Age group	Year	prevalent cases	population	Prevalence per 100,000 (95% confidence interval)
	2017	<10	-	1.11 (0.20-6.31)
	2018	<10	-	1.08 (0.19-6.13)
	2019	<10	-	1.07 (0.19-6.07)
	2020	<10	-	1.06 (0.19-5.99)
	2021	<10	-	1.09 (0.19-6.16)

Table 5. Yearly prevalence of with palmoplantar psoriasis in children 0-17 years in IMRD (UK)

Age group	Year	prevalent cases	population	Prevalence per 100,000 (95% confidence interval)
0-11	2012	0	79,874	0.00 (0.00-4.81)
	2013	0	86,679	0.00 (0.00-4.43)
	2014	<6	-	1.04 (0.18-5.91)
	2015	<6	-	4.71 (2.01-11.03)
	2016	<6	-	4.34 (1.85-10.16)
	2017	8	119,399	6.70 (3.40-13.22)
	2018	8	115,129	6.95 (3.52-13.71)
	2019	9	122,264	7.36 (3.87-13.99)
	2020	8	126,825	6.31 (3.20-12.45)
	2021	6	134,852	4.45 (2.04-9.71)
12-17	2012	<6	-	1.03 (0.28-3.74)
	2013	<6	-	0.93 (0.25-3.39)
	2014	<6	-	1.66 (0.65-4.28)
	2015	<6	-	1.11 (0.38-3.27)
	2016	<6	-	1.72 (0.74-4.04)
	2017	6	289,485	2.07 (0.95-4.52)
	2018	7	299,556	2.34 (1.13-4.82)
	2019	7	299,704	2.34 (1.13-4.82)
	2020	6	293,910	2.04 (0.94-4.45)
	2021	<6	-	1.69 (0.72-3.95)

4.2.2. Pustular psoriasis

The prevalences of pustular psoriasis in children 0-17 years in IQVIA™Disease Analyzer France and Germany, THIN Romania and IMRD (UK) per 100,000 children by year and age group (0-11 years and 12-17 years) are shown in Tables 6-9 below.

*Table 6 Yearly prevalence of pustular psoriasis in children 0-17 years in IQVIA™ Disease Analyzer France**

Age group	Year	prevalent cases	population	Prevalence per 100,000 (95% confidence interval)
0-11	2012	30	78,517	38,21 (24,54-51,88)
	2013	33	91,186	36,19 (23,84-48,53)
	2014	43	108,249	39,72 (27,85-51,59)
	2015	46	119,325	38,55 (27,41-49,69)
	2016	49	127,014	38,58 (27,78-49,38)
	2017	55	126,096	43,62 (32,09-55,14)
	2018	61	124,615	48,95 (36,67-61,23)
	2019	59	122,254	48,26 (35,95-60,57)
	2020	48	101,321	47,37 (33,98-60,77)
	2021	39	91,376	42,68 (29,29-56,07)
12-17	2012	10	34,967	28,60 (10,88-46,32)
	2013	14	40,839	34,28 (16,33-52,24)
	2014	18	48,652	37,00 (19,91-54,09)

Age group	Year	prevalent cases	population	Prevalence per 100,000 (95% confidence interval)
	2015	21	54,155	38,78 (22,20-55,36)
	2016	19	57,417	33,09 (18,21-47,97)
	2017	22	58,579	37,56 (21,87-53,25)
	2018	21	58,459	35,92 (20,56-51,28)
	2019	26	58,041	44,80 (27,58-62,01)
	2020	26	50,788	51,19 (31,52-70,87)
	2021	18	41,486	43,39 (23,35-63,43)

* The same child could be included in both age groups if the child was observable both at age 11 years and at age 12 years during the same year, based on availability of data on month of birth.

*Table 7 Yearly prevalence of pustular psoriasis in children 0-17 years in IQVIA™ Disease Analyzer Germany**

Age group	Year	prevalent cases	population	Prevalence per 100,000 (95% confidence interval)
0-11	2012	12	533,752	2,25 (0,98-3,52)
	2013	17	577,967	2,94 (1,54-4,34)
	2014	19	605,048	3,14 (1,73-4,55)
	2015	17	620,537	2,74 (1,44-4,04)
	2016	15	692,933	2,16 (1,07-3,26)
	2017	16	716,619	2,23 (1,14-3,33)
	2018	15	715,176	2,10 (1,04-3,16)
	2019	17	696,238	2,44 (1,28-3,60)
	2020	9	615,739	1,46 (0,51-2,42)
	2021	3	540,963	0,55 (0.00-1,18)
12-17	2012	10	214,906	4,65 (1,77-7,54)
	2013	12	235,374	5,10 (2,21-7,98)
	2014	9	247,087	3,64 (1,26-6,02)
	2015	13	254,859	5,10 (2,33-7,87)
	2016	15	283,146	5,30 (2,62-7,98)
	2017	14	294,392	4,76 (2,26-7,25)
	2018	14	291,275	4,81 (2,29-7,32)
	2019	19	284,043	6,69 (3,68-9,70)
	2020	20	260,069	7,69 (4,32-11,06)
	2021	19	227,465	8,35 (4,60-12,11)

* The same child was only included in one age group during the same year due to non-availability of data on month of birth and an assigned birth date on 1 January birth-year.

Table 8 Yearly prevalence of pustular psoriasis in children 0-17 years in THIN® Romania

Age group	Year	prevalent cases	population	Prevalence per 100,000 (95% confidence interval)
0-11	2012	0	3,041	0.00 (0.00-126.2)
	2013	0	4,535	0.00 (0.00-84.64)
	2014	0	25,563	0.00 (0.00-15.03)
	2015	0	39,500	0.00 (0.00-9.72)
	2016	<10	-	4.02 (1.10-14.67)
	2017	<10	-	3.81 (1.04-13.89)
	2018	<10	-	2.12 (0.37-11.99)
	2019	<10	-	2.11 (0.37-11.94)
	2020	<10	-	1.79 (0.32-10.14)
	2021	0	54,408	0.00 (0.00-7.06)
12-17	2012	0	4,774	0.00 (0.00-80.40)
	2013	0	7,477	0.00 (0.00-51.35)
	2014	0	57,841	0.00 (0.00-6.64)
	2015	0	81,294	0.00 (0.00-4.73)
	2016	0	87,521	0.00 (0.00-4.39)
	2017	0	89,775	0.00 (0.00-4.28)

Age group	Year	prevalent cases	population	Prevalence per 100,000 (95% confidence interval)
	2018	<10	-	1.08 (0.19-6.13)
	2019	<10	-	1.07 (0.19-6.07)
	2020	<10	-	1.06 (0.19-5.99)
	2021	0	91,912	0.00 (0.00-4.18)

Table 9. Yearly prevalence of pustular psoriasis (L40.1) in children 0-17 years in IMRD (UK)

Age group	Year	prevalent cases	population	Prevalence per 100,000 (95% confidence interval)
0-11	2012	18	79874	22.54 (14.26-35.62)
	2013	21	86679	24.23 (15.85-37.04)
	2014	20	95780	20.88 (13.52-32.25)
	2015	20	106088	18.85 (12.20-29.12)
	2016	23	115187	19.97 (13.31-29.96)
	2017	25	119399	20.94 (14.18-30.91)
	2018	23	115129	19.98 (13.31-29.98)
	2019	23	122264	18.81 (12.54-28.23)
	2020	22	126825	17.35 (11.46-26.26)
	2021	26	134852	19.28 (13.16-28.25)
12-17	2012	28	194818	14.37 (9.94-20.77)
	2013	26	215339	12.07 (8.24-17.69)
	2014	27	240480	11.23 (7.72-16.34)
	2015	25	269551	9.27 (6.28-13.69)
	2016	19	289926	6.55 (4.20-10.24)
	2017	18	289485	6.22 (3.93-9.83)
	2018	15	299556	5.01 (3.03-8.26)
	2019	11	299704	3.67 (2.05-6.57)
	2020	11	293910	3.74 (2.09-6.70)
	2021	9	296269	3.04 (1.60-5.77)

4.2.3. Other analyses, including sensitivity analyses

No further analyses were undertaken.

5. Discussion

5.1. Key results

Cases of recorded of palmoplantar psoriasis in children and adolescents were rare, typically in single figures for each data source. The prevalence of palmoplantar psoriasis in the two age groups was consistent across all the databases used, consistently below 10 per 100,000 and typically being around 2 per 100,000. The trend for prevalence of palmoplantar psoriasis over time in children seems to be stable or slightly increasing.

The prevalence of pustular psoriasis is highly variable between databases with no consistency between countries, age group or across time. This is suggestive of variation in coding practice (evident in the decreasing trend with time for the 12-17 year group in IMRD: this is an unusual trend, not observed elsewhere) or changes in diagnostic criteria or diagnostic coding.

5.2. Interpretation

There is a similar prevalence of palmoplantar psoriasis in the two age groups across databases, which provides confidence that palmoplantar psoriasis might be similarly diagnosed and that there is limited variation in prevalence between European countries, with the exception of pustular psoriasis prevalence in Romania which was lower than the other countries.

There is a highly variable prevalence of pustular psoriasis in the two age groups between databases suggesting possible differences in diagnosic criteria or coding practices – a variation in true prevalence is also possible, but unlikely to completely explain the findings.

Elvina (2020) describes a relatively high prevalence of all types of psoriasis in children across various populations, but make clear that palmoplantar psoriasis is a rare subtype. A systematic review by Burden-Teh et al (2016) also highlight the need for well-designed studies that provide reliable information describing the basic epidemiology of childhood psoriasis.

A register-based study from Sweden (Löfvendahl et al, 2022) established a prevalence for generalized pustular psoriasis under 18 year of around 2 per 100,000.

5.3. Limitations

The diagnoses of interest are not know to have been validated in the databases used here or in any healthcare databases. The analysis relies on complete and accurate diagnostic coding which is unlikely to be the case although the extent of misclassification and/or incompleteness is not known.

Prevalence estimate for the years 2020 and 2021 should be treated with caution: during this time patient interactions with healthcare were distorted because of the Covid-19 pandemic and this is likely to have an impact on both the numerator (case of palmoplantar/pustular psoriasis) and the denominator (the total patient population) which result in skewed result estimates.

Psoriasis in children in Germany is managed by dermatologists and paediatricians (Pinter et al, 2020). Incomplete recording of the diagnosis cannot be excluded if the patient’s psoriasis is managed by a dermatologist.

Published data on the prevalence of psoriasis in children in Europe is limited (Elvina M, 2020). A recent article by Zheng M et al (2022) reported widely varying prevalence estimates across time and different populations and cautioned against drawing wide-ranging or comparative conclusions of prevalence estimates from the available studies.

6. Conclusion

The estimated prevalence for palmoplantar psoriasis is consistent across databases and this gives confidence that it represents a “true” result. However, uncertainties around the validity of diagnostic codes means that these result should be treated with some caution.

The estimates for the prevalence of pustular psoriasis varies much more widely and cannot be treated as reliable.

7. References

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Annexes

Annex 1 - Information on Databases and Healthcare systems included

IQVIA™ Medical Research Data (IMRD) UK

IMRD UK is a primary care database from the UK. GPs play a gatekeeper role in the healthcare system in the UK, as they are responsible for delivering primary health care and specialist referrals. Over 98% of the UK-resident population is registered with a GP, so that GP patient records are broadly representative of the UK population in general. Patients are affiliated to a practice, which centralizes the medical information from GPs, specialist referrals, hospitalizations, and tests.

IQVIA™ Disease Analyzer Germany

IQVIA™ Disease Analyzer Germany collects computerised information from specialised and general primary care practices throughout Germany since 1992. Around 3% of general practitioners (GP) practices are included, which covers all patients consulting a practice. Data from IQVIA™ Disease Analyzer Germany have been shown to be reasonably representative of German healthcare statistics for demographics and certain diseases and is considered one of the largest national medical databases worldwide. IQVIA™ Disease Analyzer Germany includes more than 2,500 practices and 3,100 physicians (13 speciality groups) representing over 15,000,000 patients. This database used to be named IMS® Germany and some use of this terminology may persist.

The quality of IQVIA™ Disease Analyzer data is ensured by a series of continuous QA controls and data refinement. These include checking incoming data for criteria such as completeness and correctness, (e.g. linkage between diagnoses and prescriptions), and standardizing certain data values such as laboratory test results in order to enable reliable analysis.

IQVIA™ Disease Analyzer France

IQVIA™ Disease Analyzer France collects anonymised patient medical records since 1997 through a representative panel of GPs. The physician sample represents approximately 2% of physicians and is weighted by age and gender of the physician, doctor region and the SNIR of the physician (National Official Indicator of the GP volume of activity in terms of visits and consultations). Some 99% of the French population is insured, but there are differences regarding level of coverage. IQVIA™ Disease Analyzer France includes around 1,000 GPs and represents more than 4,000,000 of patients and considered representative for the French population. This database used to be named IMS France and some use of this terminology may persist.

The quality of IQVIA™ Disease Analyzer data is ensured by a series of continuous QA controls and data refinement. These include checking incoming data for criteria such as completeness and correctness, (e.g. linkage between diagnoses and prescriptions), and standardizing certain data values such as laboratory test results in order to enable reliable analysis.

The Health Improvement Network (THIN®) Italy

In THIN® Italy data collection started in 2000 and this database is currently able to provide clinical monitoring data of anonymised patients managed by 500 GPs in primary care (including patients' history). The data source of THIN® Italy is electronic health care records. The entire database reaches 900,000 patients (active and non-active), from which 500,000 are currently actively followed. In order to be representative at national and macroregional level, physicians have been recruited in accordance with their universe distribution in terms of geography, age and gender.

THIN® is an unobtrusive European medical data collection scheme that collects anonymized patient data from the Electronic Health Records of GPs and specialists, including information on patient's diagnoses, test results and medication. The databases follow a very strict anonymization process. In all countries patients are informed about the collection and anonymization of the data and are able to opt out, in which case no data are subsequently transmitted to the THIN database.

The Health Improvement Network (THIN®) Romania

THIN® Romania is a primary care healthcare database, including only General Practitioners (574 GPs). The source of data is electronic health care records. Enrolled GPs and their patients are representative of the whole Romanian population in terms of location, demographics and prevalence from the point of view of main chronic health pathologies. Data collection started in 2012.

In Romania, the insured population (background sampled population) numbered 17.1 million individuals (data from 2012). Among these, 8.5 million individuals benefited of healthcare services, in the public system. The number of GPs who worked in the public healthcare system, in 2017 was aproximately 11,000 physicians. They recorded 76 million consultations and issued 71 million prescriptions (data from 2017). The number of deceased patients was of 297,000 individuals, and number of newborns in 2020 was of 179,000 individuals.

THIN® is an unobtrusive European medical data collection scheme that collects anonymized patient data from the Electronic Health Records of GPs and specialists, including information on patient's diagnoses, test results and medication. The databases follow a very strict anonymization process. In all countries patients are informed about the collection and anonymization of the data and are able to opt out, in which case no data are subsequently transmitted to the THIN database.

The Health Improvement Network (THIN®) Spain

THIN® Spain is mainly a primary care healthcare database, including practitioners (GP), specialists and pediatricians & nurses. It contains data from approximately 2,000 GPs and 2,400 specialists (cardiology, pulmonology, urology, etc.). THIN® Spain also includes partial activities related to the hospital. THIN® Spain is globally representative of the whole national demographics and prevalence on the main chronic health pathologies. THIN® Spain includes 3,000,000 individuals out of the overall population. Among these, 1,050,000 are active in the previous year and 1,800,000 are active from 2014. Number of deceased patients globally varies between 8 and 9 thousand individuals per year, and number of new-borns ranges between 10 and 12 thousand individuals. New patients are automatically included into the database, and deceased patients identified in a specific field.

THIN® is an unobtrusive European medical data collection scheme that collects anonymized patient data from the Electronic Health Records of GPs and specialists, including information on patient's diagnoses, test results and medication. The databases follow a very strict anonymization process. In all countries patients are informed about the collection and anonymization of the data and are able to opt out, in which case no data are subsequently transmitted to the THIN database.

The THIN® Spain Database has been approved by two Ethics Committees, one from the Community of Madrid (Hospital Ramón Cajal) and one from the Community of Catalonia (Hospital Clinic de Barcelona). These ethics committees reviewed the data collection, protection, and anonymization processes and positively approved THIN® Spain for observational research of medical products (upon protocol submission).

Annex 2 – Codelists

WHO ICD 10 codes used for diagnosis (IQVIA™ Disease Analyzer and THIN®)

Condition	WHO ICD 10 code	WHO ICD 10 code description
Palmoplantar pustulosis	L40.3	Pustulosis palmaris et plantaris
Pustular psoriasis	L40.1	Generalized pustular psoriasis
Any psoriasis	L40 (all subcodes)	Psoriasis

Read codes used for diagnosis (IMRD UK only)

Read code	Description
L40.1 Generalized pustular psoriasis	
M161D	Pustular psoriasis
M143	Impetigo herpetiformis
L40.3 Pustulosis palmaris et plantaris	
M07y0	Pustular bacterid
M161A	Psoriasis palmaris
M161B	Psoriasis plantaris
M166	Palmoplantar pustular psoriasis
EMISNQPA160	Palmoplantar pustulosis
^ESCTAC255528	Acute palmoplantar pustular psoriasis
^ESCTCH294145	Chronic palmoplantar pustular psoriasis
^ESCTPU294148	Pustular psoriasis of palms and soles