

Retrospective analysis of the impact of screening for psoriatic arthritis with the Psoriasis Epidemiology Screening Tool in clinical dermatology practice

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Synopsis

- Psoriatic arthritis (PsA) is characterized by increasing disease burden as the disease severity progresses, making early diagnosis and intervention a priority.^{1,2}
- An estimated 30% of patients with psoriasis (PSO) have PsA; however, another 16% of patients with PSO may have undiagnosed PsA.^{3,4}
- The Psoriasis Epidemiology Screening Tool (PEST) is a questionnaire featuring 5 questions and a patient diagram for markup that has been validated for PsA screening among patients with PSO; scores range from 0–5, with scores ≥ 3 indicating risk of PsA.^{5,6}
- Implementing the PEST questionnaire for PsA screening in dermatologic practice may increase early intervention by improving rates of timely diagnosis.

Objective

To assess the proportion of patients with PSO who screened positive on the PEST and were then diagnosed with PsA by a healthcare provider within a large, multi-state dermatology practice network.

Methods

- De-identified, real-world patient data (2018–2019 and 2021–2022) were sourced from electronic health records (EHRs) within a speciality dermatology network of outpatient facilities across 14 states in the United States (US).
- Patients were included within the relevant study periods of the analysis if they received care at a facility where the PEST was deployed, had ≥ 1 encounter with a diagnosis code for PSO, and never had a diagnosis code for PsA before their first diagnosis code for PSO (Figure 1).
- For outcomes not directly related to PEST results, data from 1/1/2018–12/31/2019 (period before PEST deployment) and during the PEST deployment period, respectively. Baseline characteristics of these populations are summarized in Table 1.
- Descriptive statistics, including frequencies, percentages, and 95% confidence intervals (CIs) for categorical variables, were used to characterize the patient cohorts by study period.

Results

- Among facilities using the PEST during the deployment period (44% of practices in the network), the final study population included 14,308 and 21,142 patients with PSO in the period before PEST deployment and during the PEST deployment period, respectively. Baseline characteristics of these populations are summarized in Table 1.
- In the period before PEST deployment, 327 (2.3%; 95% CI: 2.0–2.5%) patients were diagnosed with PsA (Figure 2).
- Of the 20,042 patients who were not screened with the PEST during the PEST deployment period, 401 (2.0%; 95% CI: 1.8–2.2%) patients subsequently received a PsA diagnosis (Figure 2).
- During the PEST deployment period, 1,100 (5.2%; 95% CI: 4.9–5.5%) patients were screened for risk of PsA using the PEST (Figure 3).
 - Of these 1,100 patients, 48 (4.4%; 95% CI: 3.3–5.8%) patients were diagnosed with PsA, regardless of PEST score (Figure 2).
 - Further, of these 1,100 patients screened by the PEST, 296 (26.9%; 95% CI: 24.3–29.5%) patients had a positive PEST score (≥ 3); among these, 32 (10.8%; 95% CI: 7.6–15.1%) patients were subsequently diagnosed with PsA (Figures 2–3).

Limitations

- PEST deployment was not consistent within the dermatology network, and as an observational study, this analysis could not infer causality between PEST implementation and improvements in PsA diagnosis rates.
- The finding that 10.8% of patients with a PEST score of ≥ 3 were diagnosed with PsA might imply that the questionnaire specificity for PsA could be improved, or that all 296 patients might not have been assessed for PsA despite their positive PEST score.

Conclusions

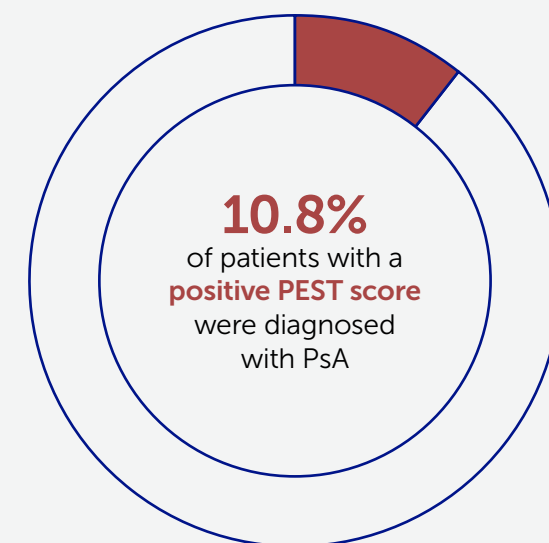
During the PEST deployment period, the PsA diagnosis rate increased among patients who were screened with the PEST, compared with that of patients who were not screened, suggesting the identification of additional PsA cases that may have otherwise gone undiagnosed or may have had delayed diagnoses.

Deployment of the PEST in the clinical dermatologic workflow may provide an opportunity to diagnose PsA earlier and improve patient outcomes.

Summary



Real-world data from a US dermatology practice network were assessed to determine the proportion of patients who screened positive on the PEST and were then diagnosed with PsA

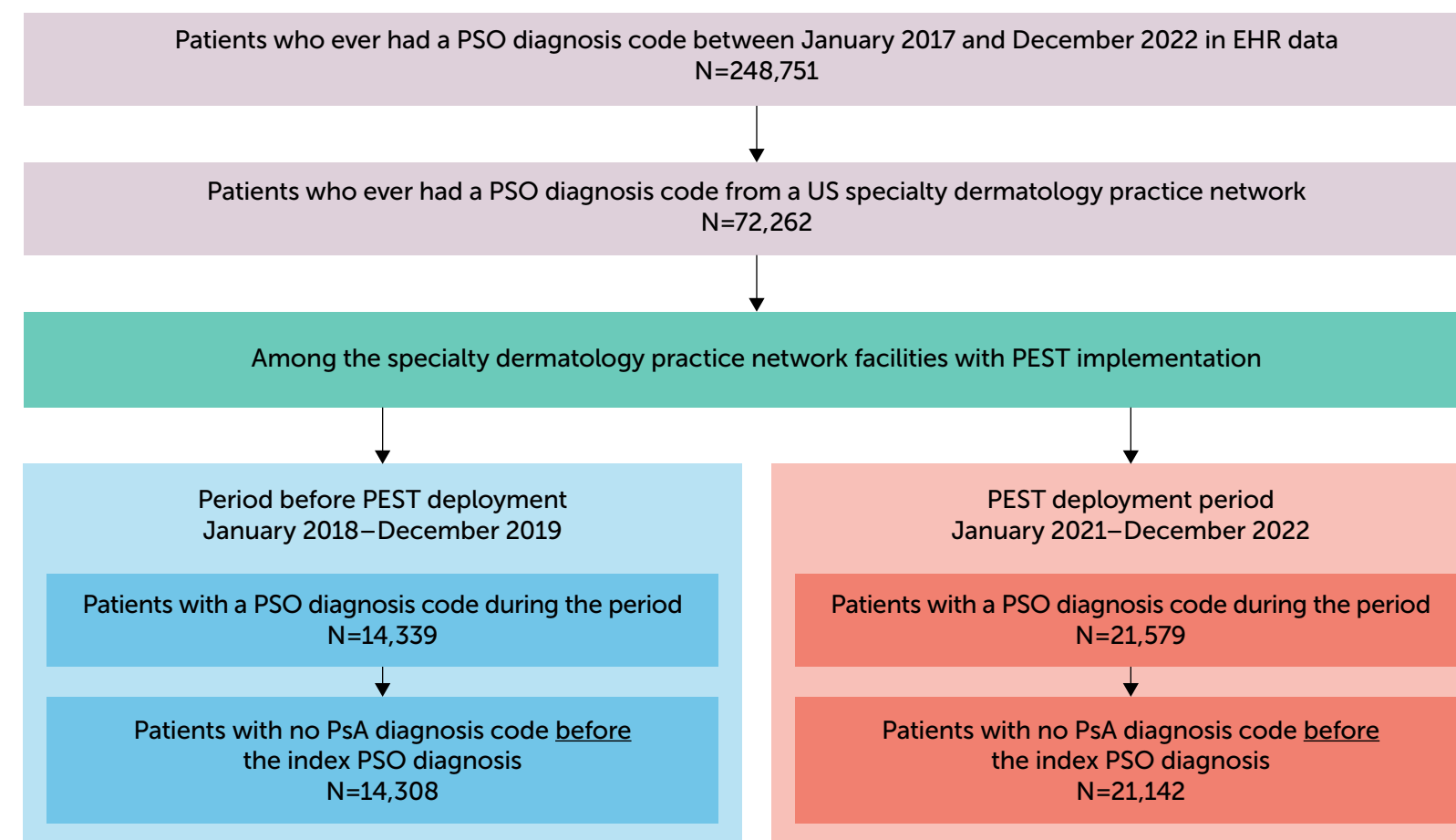


During the PEST deployment period, 4.4% of all patients screened with the PEST (irrespective of score) were diagnosed with PsA, while PsA identification without PEST screening was 2.0%



Clinical implications: PEST deployment by healthcare providers may enable an earlier diagnosis of PsA and improve patient outcomes

Figure 1 Patient flow diagram



BSA: body surface area; CI: confidence interval; EHR: electronic health record; PEST: Psoriasis Epidemiology Screening Tool; PGA: Physician Global Assessment; PsA: psoriatic arthritis; PSO: psoriasis; SD: standard deviation; Q1: first quartile; Q3: third quartile; US: United States.

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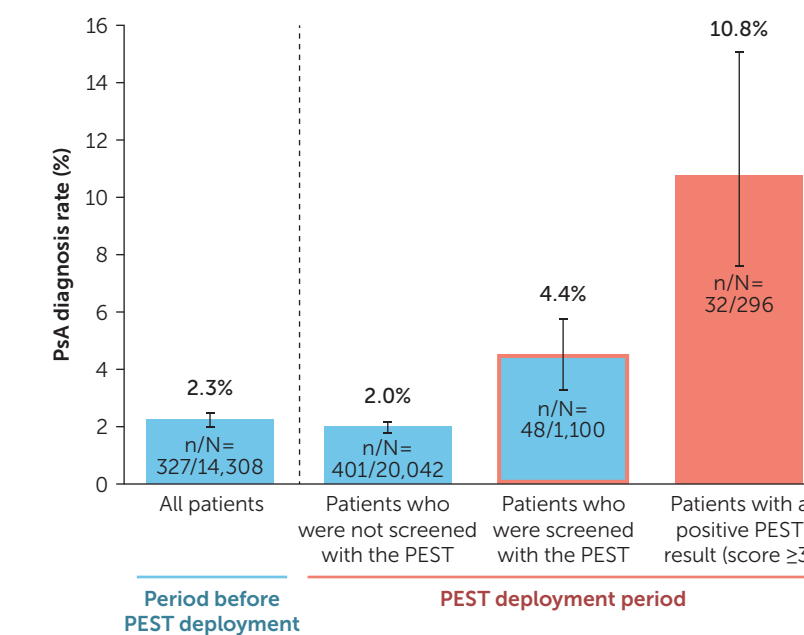
References: ¹Elmets CA et al. J Am Acad Dermatol. 2019;80(4):1073–1113. ²Snoeck Henkemans SVJ et al. RMD Open. 2024;10(1):e004062. ³Gisoni P et al. Psoriasis (Auckl). 2022;12:213–220. ⁴Villani AP et al. J Am Acad Dermatol. 2015;73(2):242–248. ⁵Ibrahim GH et al. Clin Exp Rheumatol. 2009;27(3):469–474. ⁶Helliwell PS. J Rheumatol. 2011;38(3):551–552. **Author Contributions:** Substantial contributions to study conception/design, or acquisition/analysis/interpretation of data: LR, UN, AM, AA, RL, drafting of the publication, or reviewing it critically for important intellectual content: LR, UN, AM, AA, RL. **Author Disclosures:** LR, AM, AA, RL: Employees and may own stock or stock options in OMNY Health, a company that UCB contracted to perform research and analytic services. UN, RL: Employees and shareholders of UCB. **Acknowledgments:** This study was funded by UCB. We would like to thank the patients and their caregivers in addition to the investigators and their teams who contributed to this study. The authors acknowledge Brian Vassallo, PhD, Quinn Ho, PhD, and M. Elizabeth Wegman, BA, of Costello Medical, Boston, MA, for medical writing, and the Costello Medical Creative team for graphic design assistance. All costs associated with development of this poster were funded by UCB.

Table 1 Baseline demographics and disease characteristics among patients with PSO and no prior PsA diagnosis

Characteristic	Period before PEST deployment (2018–2019) N=14,308	PEST deployment period (2021–2022) N=21,142
Sex, n (%)		
Female	7,736 (54.1)	11,530 (54.6)
Male	6,567 (45.9)	9,570 (45.4)
Age* (years)		
Mean (SD)	54.9 (17.3)	54.0 (17.5)
Median (Q1, Q3)	57.0 (43.0, 68.0)	56.0 (41.0, 68.0)
Age band (years), n (%)		
18–29	1,088 (7.8)	1,766 (8.5)
30–44	2,456 (17.6)	4,194 (20.3)
45–64	5,545 (39.7)	7,888 (38.1)
65+	4,879 (34.9)	6,853 (33.1)
Race, n (%)		
Asian	242 (3.6)	419 (4.2)
Black or African American	362 (5.3)	712 (7.2)
Other	552 (8.1)	656 (6.6)
White	5,651 (83.0)	8,130 (82.0)
Ethnicity, n (%)		
Hispanic or Latino	776 (18.7)	1,215 (19.7)
Not Hispanic or Latino	3,368 (81.3)	4,954 (80.3)
US region, n (%)		
Midwest	3,127 (22.7)	4,599 (22.8)
Northeast	1,809 (13.2)	2,508 (12.5)
Southeast	8,245 (59.9)	11,520 (57.2)
Southwest	280 (2.0)	485 (2.4)
West	295 (2.1)	1,027 (5.1)
BSA^b (%)		
n	3,317	7,973
Mean (SD)	18.4 (20.8)	15.4 (17.7)
Median (Q1, Q3)	10.0 (4.0, 25.0)	10.0 (4.0, 20.0)
Minimum, maximum	0.0, 100.0	0.0, 100.0
PGA,^b n (%)		
Almost clear	427 (17.5)	692 (11.4)
Clear	220 (9.0)	570 (9.4)
Mild	599 (24.6)	1,357 (22.3)
Moderate	1,079 (44.3)	2,553 (42.0)
Severe	110 (4.5)	902 (14.9)
PEST score,^c n (%)		
0	–	474 (43.1)
1	–	188 (17.1)
2	–	142 (12.9)
3	–	188 (17.1)
4	–	82 (7.5)
5	–	26 (2.4)

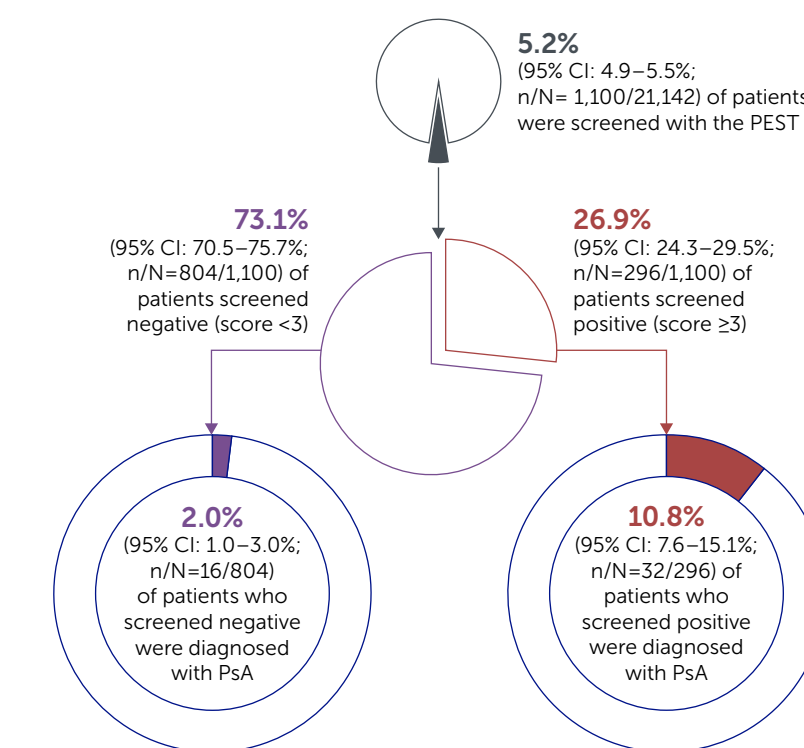
Percentages were calculated based on observations with non-missing values. [a] Age was assessed at the patient's first visit within the indicated study period. [b] BSA and PGA were assessed specifically in reference to baseline PSO disease severity, and score values represent the most severe assessment for each applicable patient during the indicated study window. [c] A PEST score of ≥ 3 was defined as positive for PsA risk.

Figure 2 PsA diagnosis rates among patients with PSO before and during PEST deployment



The dashed vertical line denotes the boundary between the periods before (2018–2019) and during (2021–2022) PEST deployment; error bars represent 95% CIs.

Figure 3 PEST screening rates, PEST scores, and PsA diagnosis rates among patients with PSO during the PEST deployment period



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