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**Regional disparities in the dermatology workforce**J Tomtschik, E Sabogal, P Singh and MG Mercurio *University of Rochester Medical Center, Rochester, New York, United States*

Socioeconomic disparities are an important barrier to dermatological care in the US. While access to care has grown with telehealth and use of advance practice providers (APPs), gaps in healthcare are still being identified and addressed. Prior studies have shown racial, ethnic, and socioeconomic disparities, but there is little data examining the geographic distribution of dermatologists throughout the US. Our study uses the 2006-2019 Association of American Medical Colleges (AAMC) Data Warehouse data to investigate trends in dermatologist density by US Census Region (Northeast, Midwest, South, or West). Data from the years 2006, 2011, 2013, 2015, 2017, and 2019 were analyzed. We recorded the mean annual dermatologist density, defined as dermatologists per 100,000 people (estimated from the US Census) and the ratio of dermatologists to primary care providers (PCPs), stratifying by US state and region. Significant differences in distribution of dermatologists were tested using Moran's I statistic for spatial autocorrelation. Mean dermatologist density was highest during the study period in the Northeast (4.58/100,000, Moran's I  $P < 0.001$ ), followed by the West (3.86/100,000), South (3.25/100,000), and Midwest (2.98/100,000). PCP/Dermatologist ratios were highest in the Midwest (30.8 PCPs/dermatologists, Moran's I  $P = 0.05$ ), and this trend was stable throughout the study period. Additionally, the number of dermatologists practicing in rural areas grew by an annualized rate of 0.7% per year between 2006 and 2017, compared to 1.8% in urban/suburban areas. Our analyses show that supply of rural dermatologists is growing at less than half the rate of non-rural areas, which implies that geographic disparities worsened over the study period. While PCPs and APPs are helping to address a shortage of dermatology providers in rural areas and the Midwest, there is likely still an unmet need for higher level dermatologic care. Our findings suggest a need for new strategies to attract dermatologists to these areas and further studies to investigate the factors influencing these disparities.



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**Regional differences in cardiovascular risk factor screening for patients with psoriasis by dermatology providers**WB Song<sup>1</sup>, GM Peck<sup>2</sup>, DB Shin<sup>1</sup>, AB Fleischer<sup>2</sup>, SR Feldman<sup>3</sup> and JM Gelfand<sup>1</sup> *1 University of Pennsylvania Perelman School of Medicine, Philadelphia, Pennsylvania, United States, 2 University of Cincinnati College of Medicine, Cincinnati, Ohio, United States and 3 Wake Forest University School of Medicine, Winston-Salem, North Carolina, United States*

Psoriasis patients have an increased risk of cardiovascular (CV) events and mortality. Psoriasis treatment guidelines recommend counseling patients about CV risk and screening for modifiable CV risk factors. Regional differences in screening psoriasis patients for CV risk factors are not well characterized and could represent unmet screening needs. Using the most recent data from the National Ambulatory Medical Care Survey 2007-2016, a nationally representative sample of office-based ambulatory visits in the United States, we examined screening differences between 4 regions (Northeast, Midwest, South, West) for 4 CV risk factors (blood pressure, body mass index, cholesterol, glucose) for psoriasis patients visiting dermatology providers. For 15 million weighted patient visits, the screening rates in the Northeast, Midwest, South, and West were 12%, 10%, 2.3%, and 7.5% for blood pressure; 11%, 13%, 11%, and 8.7% for body mass index; 2.4%, 5.5%, 3%, and 10% for cholesterol; and 3%, 2%, 0.9%, and 1.3% for glucose, respectively. Using a logistic regression model, we found that regional differences in blood pressure screening persisted after adjusting for sex, age, race, ethnicity, and disease severity. Compared to the rate of blood pressure screening in the South (2.3%), the odds of receiving blood pressure screening were 5.90 (95% CI 1.34-25.92) in the Northeast, 4.87 (95% CI 1.59-14.97) in the Midwest, and 3.42 (95% CI 1.01-11.57) in the West. No statistically significant regional differences were found for body mass index screening. Regression analysis for cholesterol and glucose screening was not performed due to sample size limitations. CV risk factor screening in psoriasis patients by dermatology providers is very low across all regions and lowest in the South. Interventions to improve and standardize CV screening for psoriasis patients across all regions are needed.



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**Is social media spreading misinformation on the COVID-19 vaccines within the psoriasis community?**D Yee<sup>1</sup>, C Zagana-Prizio<sup>2</sup>, S Khan<sup>1</sup>, S Khan<sup>4</sup>, N Maynard<sup>1</sup>, MD Mehta<sup>1</sup>, R Reddy<sup>3</sup> and AW Armstrong<sup>1</sup> *1 University of Southern California Keck School of Medicine, Los Angeles, California, United States, 2 University of Colorado Denver School of Medicine, Aurora, Colorado, United States, 3 The University of Texas Southwestern Medical Center Medical School, Dallas, Texas, United States and 4 The University of Texas Health Science Center at San Antonio Joe R and Teresa Lozano Long School of Medicine, San Antonio, Texas, United States*

Many patients turn to social media for support and medical advice. This study analyzes social media interactions among patients with psoriasis and psoriatic arthritis regarding the COVID-19 vaccine to determine the misinformation circulating and the apprehension to receiving the vaccine. Relevant posts uploaded between March 1, 2021 and July 31, 2021 from publicly accessible Facebook and Reddit groups were analyzed. Higher-order and lower-order themes, as well as sentiment and engagement scores, were assigned to each post. 345 posts contained content pertaining to vaccination decision, and 1379 posts contained content pertaining to vaccine reaction. 37.4% of vaccination decision posts reported refusing the vaccine, and 18.3% reported being unsure about getting the vaccine. Common reasons for refusing included fear of psoriasis flare up, fear the vaccine was dangerous, and fear the vaccine was experimental; the first two of which received the most engagement. 41.4% of vaccination decision posts contained positive sentiment, and 38.3% contained negative sentiment. 72.2% of vaccine reaction posts reported no change to psoriasis, 16% reported skin/joint flare up, and 3.7% reported skin/joint improvement. Posts pertaining to skin/joint flare up and skin/joint improvement received the most engagement. 77.8% of vaccine reaction posts contained positive sentiment, and 6.2% contained negative sentiment. Our study identified common COVID-19 vaccine concerns within the psoriasis community which should be used to guide education efforts. It is crucial that clinicians address reasons for vaccine hesitancy and inform patients of evidence-based recommendations to combat the pandemic.



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**Getting candid with CAM: Complementary and alternative medicine use among eczema patients**S Khan<sup>1</sup>, S Khan<sup>2</sup>, MD Mehta<sup>1</sup>, N Maynard<sup>1</sup>, R Reddy<sup>3</sup>, D Yee<sup>1</sup>, C Zagana-Prizio<sup>4</sup> and AW Armstrong<sup>1</sup> *1 University of Southern California Keck School of Medicine, Los Angeles, California, United States, 2 The University of Texas Health Science Center at San Antonio Joe R and Teresa Lozano Long School of Medicine, San Antonio, Texas, United States, 3 The University of Texas Southwestern Medical Center Medical School, Dallas, Texas, United States and 4 University of Colorado Denver School of Medicine, Aurora, Colorado, United States*

Complementary and alternative medicine (CAM) use is common among those with skin diseases. However, little is known about the nature and extent of CAM use among adults with eczema in the United States. This study sought to describe CAM use among those with eczema and compare CAM use in adults with and without eczema. We conducted a population-based, cross-sectional analysis using the 2012 National Health Interview Survey. Among 7,513,156 adults (weighted) with eczema, 3,265,350 (43.5%) reported using at least one CAM modality. Compared to non-CAM users with eczema, a greater percentage of CAM users with eczema were younger (47.72±0.58 vs. 49.38±0.58,  $P = 0.031$ ), female (69.9% vs. 58.3%,  $P < 0.001$ ), white (84.1% vs. 79.2%,  $P < 0.001$ ), of non-Hispanic origin (92.4% vs. 88.0%,  $P < 0.001$ ), and higher educated (61.6% vs. 57.6%,  $P = 0.036$ ). Compared to adults without eczema, adults with eczema had 69% higher odds of using CAM when controlling for age, sex, race, Hispanic origin, household income and education attainment (aOR [95% CI], 1.69 [1.50-1.91],  $P < .001$ ). Among adults with eczema, herbal supplements were the most common modality used for health and for the treatment of eczema. In conclusion, CAM use is common among adults with eczema. It is important for dermatologists to have candid conversations with patients regarding CAM use to optimize care and prevent potential adverse events.



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**Biologics gone viral: Perceptions of biologics within online psoriasis and psoriatic arthritis communities**N Maynard<sup>1</sup>, MD Mehta<sup>1</sup>, R Reddy<sup>3</sup>, D Yee<sup>1</sup>, C Zagana-Prizio<sup>2</sup>, S Khan<sup>1</sup>, S Khan<sup>4</sup> and AW Armstrong<sup>1</sup> *1 University of Southern California Keck School of Medicine, Los Angeles, California, United States, 2 University of Colorado Denver School of Medicine, Aurora, Colorado, United States, 3 The University of Texas Southwestern Medical Center Medical School, Dallas, Texas, United States and 4 The University of Texas Health Science Center at San Antonio Joe R and Teresa Lozano Long School of Medicine, San Antonio, Texas, United States*

Limited analyses of social media content among psoriasis (PsO) and psoriatic arthritis (PsA) patients exist. These patients may turn to social media to gain insight on treatments such as biologics. This study aims to analyze the content, sentiment, and engagement of social media posts regarding biologics for PsO and PsA. Posts and comments discussing biologics were extracted from publicly accessible PsO and PsA Reddit groups. Posts were assigned higher and lower order themes (HOTs and LOTs, respectively), sentiments, and engagement scores. Of 1141 posts extracted, 705 posts were classified under the HOT general/efficacy. 12 lower order themes (LOTs) were identified: hoping to start biologics (7.1% of posts), general hesitancy (17%), advice/experience (10.2%), symptoms improved (36.6%), symptoms not improved/worsened (5.7%), switching biologics (10.5%), time to results (13.4%), benefits outweigh risks (0.4%), stubborn areas (2.7%), biologics stopped working (4.9%), biologics mask the problem (1.0%), and other (5.4%). 61.3% of content was of positive sentiment, 24.0% was neutral, and 14.7% was of negative sentiment. The mean sentiment score, defined as the average of all posts' sentiment scores (where negative=-1, neutral=0, and positive=1), was overall positive at 0.47, 95% CI [0.41-.52]. Mean sentiment scores between LOTs were significantly different ( $p < 0.001$ ). Information regarding biologics on Reddit is mostly positive; however, there remains a significant number of users expressing dissatisfaction with their efficacy or with biologics in general. Many users sought anecdotal advice. These findings can help guide educational efforts to anticipate concerns and appease hesitancy regarding biologic efficacy and use.



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**The patient perspective on vaccine uptake in adults with psoriasis and eczema**M Archila, N Goldman, L Perez Chada and MH Noe *Dermatology, Brigham and Women's Hospital, Boston, Massachusetts, United States*

Previous studies in the United States and Europe suggest adults with chronic inflammatory skin diseases are not receiving all recommended adult vaccinations. In the general population, age >65 years and having a chronic disease are the most consistent factors associated with receipt of the influenza vaccine, but these factors have not been explored in dermatology patients. The objective of this study was to explore factors associated with vaccine uptake in adults with eczema and psoriasis. A qualitative study using virtual, semi-structured interviews was conducted in a convenience sample of adults who self-identified as having psoriasis or eczema for at least 1 year, recruited from the National Psoriasis Foundation, the National Eczema Association and dermatology clinics at Brigham and Women's Hospital. Each interview was transcribed, edited for clarity, and independently coded by 2 study team members. Thematic analysis was used to analyze the data. Of 34 study participants, 25 participants (74%) were female and 9 (26%) were male, with a mean age of 50.8 years (SD: 16.4). Half of participants ( $n = 17$ ) had psoriasis and half ( $n = 17$ ) had eczema. Themes around healthcare decision making, perceived risks/benefits to vaccination, vaccine knowledge, and vaccine administration were explored. Most patients described how their skin disease impacts their lifestyle and personal decision making. Participants recognized both personal and societal benefits to vaccines. The most common barriers to vaccination identified were access to appointments and concerns about side effects. Patients most frequently reported receiving vaccine information from physicians, internet resources and friends, family, or colleagues, but no participant was able to correctly identify all vaccines recommended for adults in the United States. These results summarize the unique dermatology patient perspective around vaccine uptake and can be used to design patient-centered intervention to increase vaccination rates and decrease infectious complications of chronic inflammatory skin diseases.

