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Psoriasis and Psoriatic Arthritis:

A Public Health Agenda

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Introduction

Robust clinical, biomedical, and public health efforts currently address chronic conditions such as heart disease, diabetes, and cancer. However, similar efforts are less common for nonfatal conditions such as psoriasis, which is estimated to affect between 1% and 3% of the adult population,^{1,2} and psoriatic arthritis, an inflammatory arthritis found in up to one third of adults with psoriasis.³ Both diseases present a substantial public health burden in terms of healthcare costs (\$650 million in 1997)¹; employment and ability to work⁴; and quality of life.^{5,6}

In 2008, the National Psoriasis Foundation (NPF) approached the CDC to explore how a public health perspective could be incorporated into existing clinical and biomedical perspectives. In 2010, the U.S. Congress included funding for the CDC

... to support the collection of epidemiological and longitudinal data on individuals with psoriasis and psoriatic arthritis, including children and adolescents, to better understand the co-morbidities associated with psoriasis, examine the relationship of psoriasis to other public health concerns, and gain insight into the long-term impact and treatment of these two conditions.⁷

In other words, the funding was to begin developing and addressing a public health agenda for psoriasis and psoriatic arthritis.

The current paper highlights the steps taken in collaboration with clinical, biomedical, and public health experts to begin developing a public health agenda for the assessment of psoriasis and psoriatic arthritis. The full report, entitled *Developing a Public Health Agenda for Psoriasis and Psoriatic Arthritis*, can be found on the CDC and NPF websites (www.cdc.gov/psoriasis and www.psoriasis.org/CDCagenda).

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The Process

As a first step to creating a public health agenda, the CDC sought input from clinical and public health experts to identify and discuss issues pertinent to addressing these diseases from a public health perspective. A steering committee led the deliberations of experts from federal agencies, nonprofit organizations, universities, hospitals, and clinics (Table 1). During an initial teleconference and an in-person meeting in the spring of 2010, public health experts learned about the important issues relating to clinical psoriasis and psoriatic arthritis, and clinical experts learned about the important issues relating to public health.

These deliberations resulted in six public health focus areas:

1. Describe burden of disease (age of onset, direct/indirect costs, employment/work, healthcare utilization, health-related quality of life, and prevalence);
2. Identify disparities (focused on age, gender, and race/ethnicity);
3. Determine validity of existing case definitions;
4. Describe severity of the diseases;
5. Analyze comorbidities (e.g., cardiovascular disease and obesity); and
6. Describe natural history.

Then, over the course of three teleconferences in August 2010, the experts discussed the validity of available population-based data for each of the six focus areas. A review of the peer-reviewed, public health literature informed these discussions. The literature review included a PubMed search from January 1990 to May 2010; key articles provided by the expert consultants (including a catalog of literature compiled by the NPF); and a review of reference lists. A total of 198 original research articles were identified, of which 68 had been conducted on populations in the U.S. In all, only 14 of 68 U.S. articles were population-based. This review helped to identify needs and gaps during subsequent teleconferences with the expert consultants.

Public Health Agenda

The expert consultants, using the results of the literature review, developed an agenda of 11 topics to drive public health activities. The agenda focuses on the populationbased research needed to more fully describe the problems of psoriasis and psoriatic arthritis from a public health perspective.

Priorities for Public Health Research

Based on the public health agenda, the CDC proceeded to develop a list of four priorities that could be undertaken as time, opportunity, and resources permit. This list considered both feasibility (e.g., availability of existing data sources) and relevance to public health and included the following:

1. Validity of psoriasis and psoriatic arthritis case definitions for population-based research;

2. Prevalence, disparities, and comorbidities associated with psoriasis and psoriatic arthritis;
3. Healthcare utilization, costs, and employment/work burden associated with psoriasis and psoriatic arthritis; and
4. Impact of psoriasis and psoriatic arthritis on quality of life and of disease severity on the previously stated measures.

With the remainder of the 2010 funding, CDC addressed some of these priorities, especially those that would validate potential case definitions to be used in an ongoing surveillance system.

Priority 1: Validity of Psoriasis and Psoriatic Arthritis Case Definitions for Population-Based Research

With the national move toward electronic medical records, healthcare systems–based surveys may provide an avenue for considering national surveillance of psoriasis and psoriatic arthritis. These surveys include healthcare provider–assigned ICD-9-CM codes; offer reasonable timeliness; and, with some mathematical manipulation, can estimate the number of people with psoriasis and psoriatic arthritis who affect the healthcare system. The validity of using case definitions based on ICD-9-CM could not be addressed using existing, population-based data. Therefore, the CDC is funding a validation study with an HMO population to determine the validity of such definitions for psoriasis and psoriatic arthritis surveillance.

Priority 2: Prevalence, Disparities, and Comorbidities Associated with Psoriasis and Psoriatic Arthritis

The issues of prevalence, disparities, and obesity are being addressed through two studies using nationally representative data. The first uses 2003–2006 and 2009–2010 National Health and Nutritional Examination Surveys (NHANES) interview and mobile examination center data for participants who self-reported a psoriasis diagnosis by a doctor or other healthcare provider.

The second combines National Ambulatory Medical Care Survey (NAMCS) and National Hospital Ambulatory Medical Care Survey (NHAMCS) outpatient department (OPD) visit data to estimate the prevalence of psoriasis and psoriatic arthritis among patients in the U.S. ambulatory healthcare system. At the time of analysis, the most recent data available for the NAMCS/NHAMCS surveys were from 2009; therefore, the current study includes 2004–2009 NAMCS and NHAMCS-OPD data using ICD-9-CM Codes 696.0 (psoriatic arthropathy) and 696.1 (other psoriasis and similar disorders).

Priority 3: Healthcare Utilization, Costs, and Employment/Work Burden Associated with Psoriasis and Psoriatic Arthritis

The issue of healthcare utilization is being addressed through a study using the NAMCS, NHAMCS-OPD, and National Hospital Discharge Survey (NHDS) data sets. The NAMCS and NHAMCS-OPD data sets were analyzed together; however, psoriatic arthritis was excluded due to its small sample size. The NHDS data set was analyzed separately from

NAMCS and NHAMCS-OPD and included both psoriasis and psoriatic arthritis. At the time of analysis, the most recent data available for all three surveys were from 2009; therefore, the current study includes 2004–2009 NAMCS, NHAMCS-OPD, and NHDS data using ICD-9-CM Codes 696.0 (psoriatic arthropathy) and 696.1 (other psoriasis and similar disorders).

Priority 4: Impact of Psoriasis and Psoriatic Arthritis on Quality of Life and of Disease Severity on the Previously Stated Measures

The issues of quality of life and severity are being addressed through a study using the 2003–2006 NHANES interview and mobile examination center data for participants who self-reported a psoriasis diagnosis by a doctor or other healthcare provider.

Next Steps

Both psoriasis and psoriatic arthritis present a substantial public health burden⁸; however, additional, population-based research is required in each of the six focus areas (burden, disparities, case definition validity, severity, comorbidities, and natural history). In particular, research is needed to analyze age of onset, cardiovascular disease as a comorbidity, employment and/or work-related burden, and direct and indirect costs. Other areas that would be beneficial to examine from a public health perspective include burden of disease in the pediatric population, prescription drug use, and treatment and control.

The CDC has begun to address the public health agenda for psoriasis and psoriatic arthritis through its research on a subset of the six focus areas. To successfully address all needs identified during the expert consultation, the engagement of the larger dermatologic and public health communities is needed and welcomed.

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Table 1

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