

# Algorithms for Identifying Immunocompromised Adults in Administrative Claims Data – a Targeted Literature Review

EPH51



References, disclosures and dditional information are available by scanning this QR-code

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# **BACKGROUND**

In the United States, vaccination with recombinant zoster vaccine is recommended by the Advisory Committee on Immunization Practices (ACIP) for herpes zoster (HZ) prevention:



in adults aged ≥19 years who are or will be immunodeficient or immunosuppressed because of disease or therapy



for immunocompetent adults aged ≥50 years

To identify published algorithms that can be applied to claims databases to identify immunocompromised populations



# **METHODS**



Design: Targeted literature review

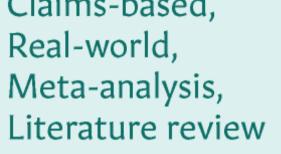


### **Key Terms:**

Immunocompromis\*
Herpes zoster Immunodeficien\* Immunocompetent Immunosuppr\*

claims,

Observational, Claims-based, Retrospective, Real-world, Administrative Meta-analysis,





**Inclusion:** Publications January 2016 to August 2022

# **Exclusion:**

(AND) vaccine

- publications with no algorithm defined to determine immunocompromised status or algorithms based on ≤3 immunocompromising conditions or therapies,
- publications that only include pediatric patients or adult patients aged >75 years,
- commentary, editorial, correspondence,
- opinion pieces, case reports

# Database:

PubMed and Cochrane Review databases, supplemented with a review of publications cited by and citing 8 key pre-specified publications 1-8



## Screening:

Manual title and abstract screening (10% sample reviewed by a second reviewer – abstract screening was against pre-specified criteria), with 25 articles selected for full text review and data extraction

Asterisks (\*) indicate multiple or no letters may be included following the root term (e.g. immunocompromis\* will be used to identify immunocompromise, immunocompromised, and immunocompromising)

# 1,011 PUBLICATIONS SCREENED 41 eligible for full-text screening, 25 priority publications selected

Literature search criteria N=999

Bibliographic review **N=8** 

"Cited by" review N=4

N=1,011

Articles excluded from abstract screening

25 articles were prioritized for full text review and data extraction, and 16 were excluded

# **ARTICLES REMAINING**

N=41

N=25

# **PRIORITIZED FOR DATA EXTRACTION**



# Diagnoses and medications used varied across publications:

All 25 publications used diagnoses from claims and/or clinical data to identify immunocompromised patients and 20 also used immunosuppressive medications

Conditions used to determine immunocompromised status included immunocompromising conditions, autoimmune, and chronic conditions

Medications used to determine immunocompromised status included **chemotherapeutic agents**, immunomodulators, and systemic steroids

# **ARTICLES EXCLUDED**

N=970

### **EXCLUSION MOTIVES**

**905** Population

- No algorithm
- Algorithm based on ≤ 3 conditions/therapies
- Commentary, editorial, correspondence, or opinion piece
- Pediatric (<18 years) patients only
- Case report
- Other
- Aged >75 years only

# Algorithms identifying immunocompromised status were used

to stratify analyses or as covariates in 12 publications as an exclusion criterion in 9 publications as an inclusion criterion in 4 publications



- **No publications** defined algorithms with multiple levels or degrees of immunocompromised status or which allowed for time-varying immunocompromised status
- Among the 14 publications including a citation for the algorithm used to determine immunocompromised status, **Greenberg et al.¹ (n=6) and** Tseng et al.9 (n=4) were most commonly cited

There are **several** published algorithms for identifying immunocompromised populations that **can** be applied in administrative claims data

Diagnoses and medications for determining immunocompromised status varied across algorithms

**Further research** comparing algorithms is needed to support future use in research or to identify immunocompromised populations for HZ prevention

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