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# Long-term Projections Of Pediatric Immune Thrombocytopenia Burden In The United States: Epidemiologic Insights From 2025 To 2050

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## INTRODUCTION

- Immune Thrombocytopenia (ITP) is a rare autoimmune disorder marked by isolated thrombocytopenia and bleeding risks<sup>1</sup>, typically presenting as bruising, petechiae, or mucosal bleeding<sup>2</sup>.
- As an orphan disease, it affects 2 - 7 per 100,000 children annually, with peak incidence observed in early childhood (ages 2–5) and adolescence<sup>3</sup>.
- The prevalence, incidence and natural history of pediatric ITP differ substantially from those observed in adults<sup>4</sup>.
- While the majority of pediatric cases are acute and self-limiting - often resolving within three months - approximately 25% of US patients transition to a persistent or chronic state, where the risk of life-threatening hemorrhage necessitates long-term clinical management<sup>5</sup>.
- Pediatric ITP differs clinically from adult disease, but long-term US burden data are limited; projecting future burden helps quantify the scale of disease, understand age-specific dynamics, and support planning for pediatric hematology care and policy.

## OBJECTIVES

- This study aimed to quantify the prevalent and incident cases of ITP over the period 2025–2050.
- Geographic scope: US
- Population: Pediatric (ages 0–17), distinguished by acute onset and high remission rates compared to adult chronic ITP.
- Projections: Annual incident and prevalent case estimates from 2025 to 2050.

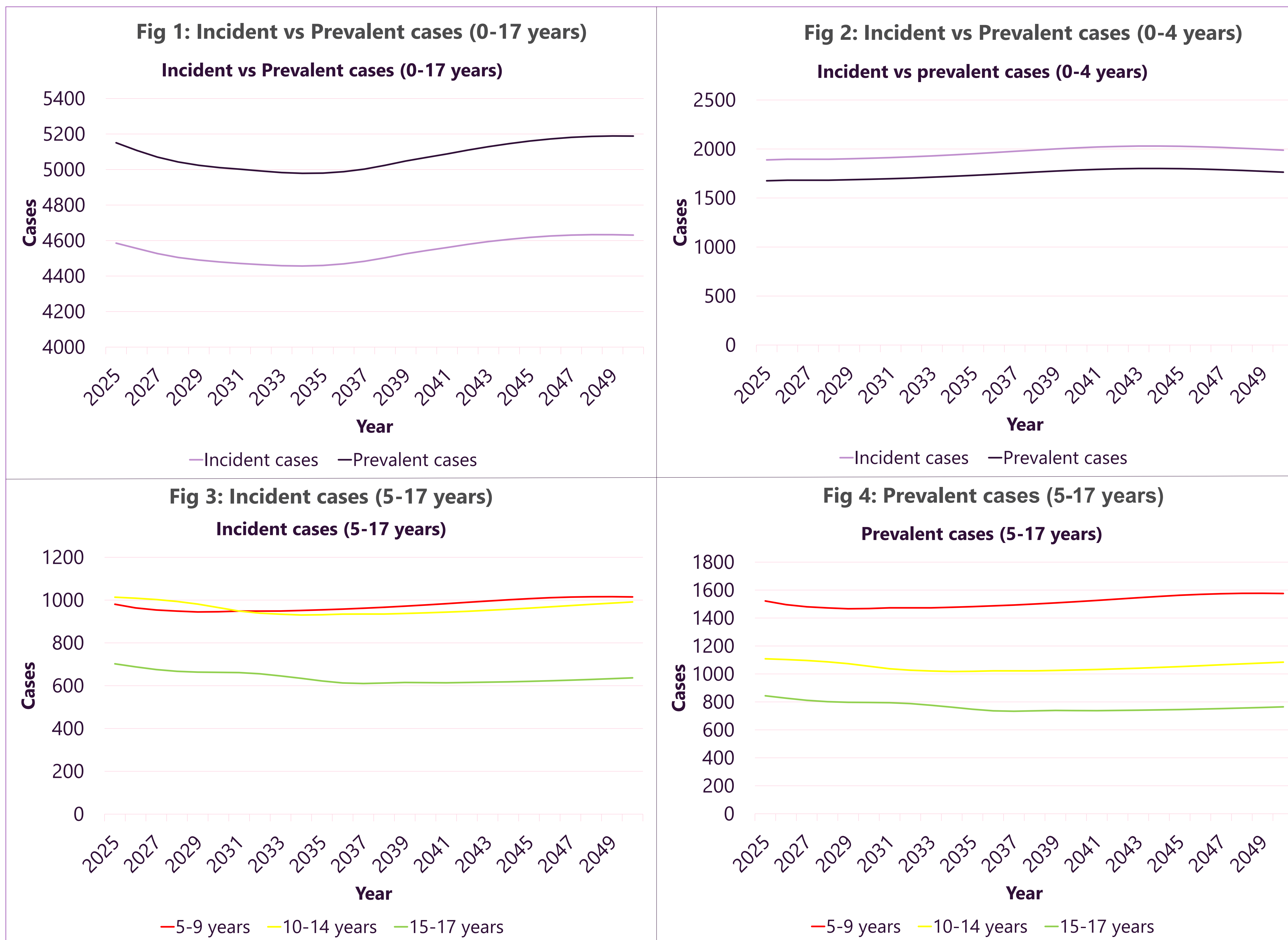
## METHODS

- Methodology – A targeted literature search was conducted to identify US-specific studies reporting epidemiological estimates of ITP
- Population – Pediatric population (0-17 years)
- Case definition – ITP cases were identified using ICD-9 and ICD-10 diagnostic codes reported in the literature.
- Population baseline – Age-specific incidence and prevalence rates were applied to UN pediatric population projections.
- Stratification – Analyses were stratified into four pediatric age groups: 0–4, 5–9, 10–14, and 15–17 years, to account for age-related variation.

\*Rates were held constant due to absence of longitudinal trend data

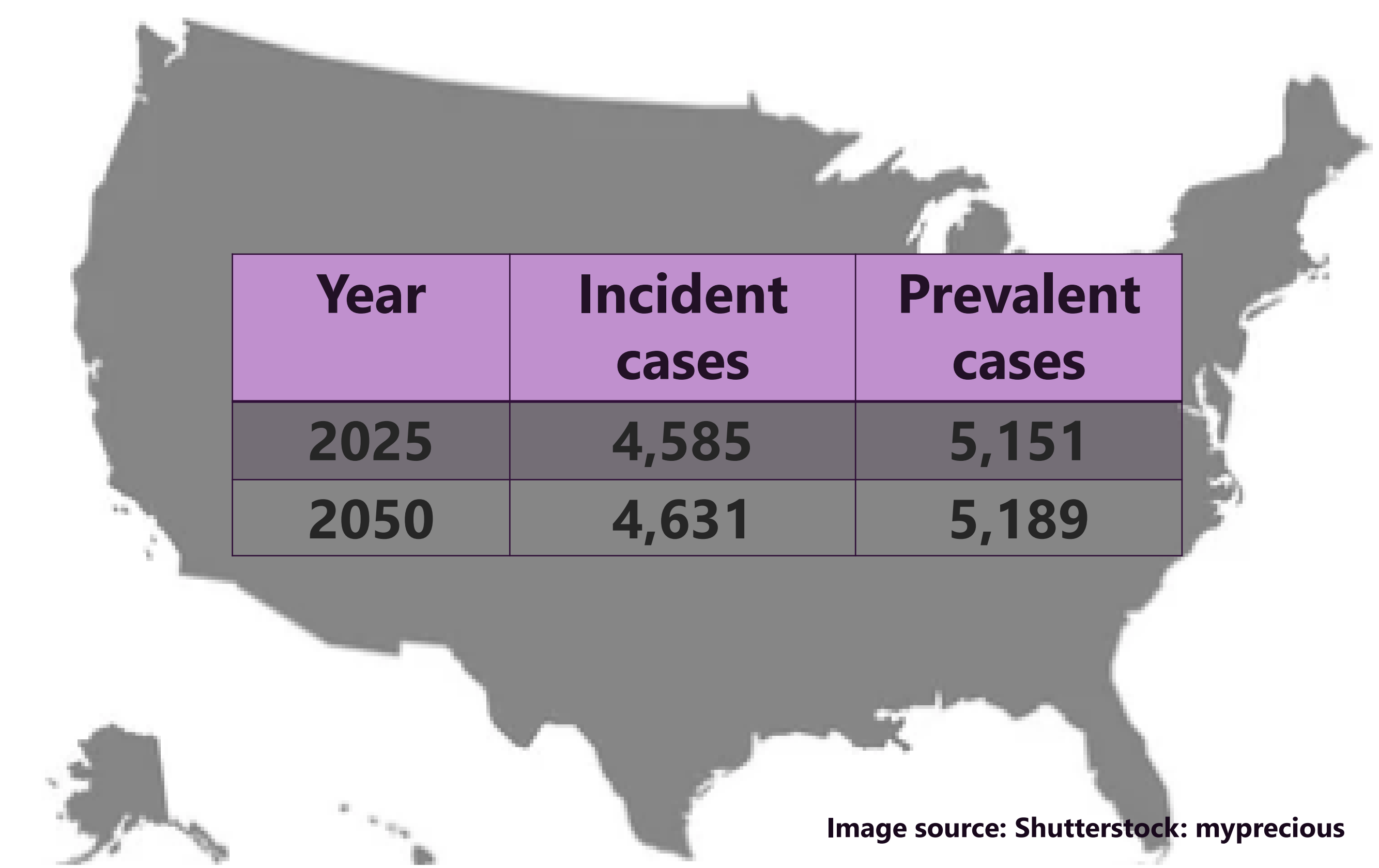
## RESULTS

- This study identified six US-specific studies meeting the inclusion criteria.
  - In 2025, pediatric ITP prevalence was **7.1 per 100,000** and incidence **6.3 per 100,000**, corresponding to 5,151 prevalent and 4,585 incident cases nationally.
  - Under constant rates, projected case counts remain stable through 2050 (5,189 prevalent and 4,631 incident cases).
  - Disease dynamics by age:
    - Ages 0–4 (High Turnover): Incidence exceeds prevalence, confirming that the disease is primarily acute and self-limiting in early childhood.
    - Older Cohorts (Increased Persistence): Prevalence exceeds incidence, indicating that the disease becomes more chronic/persistent as children age.
- The overall narrow margin between incidence and prevalence is driven by an approximately 80% one-year recovery rate.



## KEY TAKEAWAY

Given its unique epidemiology and variable course, pediatric ITP was analyzed separately in this study. Projections through 2050 indicate a stable US disease burden, marked by rapid remission in young children and increasing chronicity with age.



## CONCLUSION

- While the total number of US pediatric ITP cases is expected to remain steady, high case turnover due to rapid recovery highlights the need for efficient acute-care management over long-term intervention.
- Reliance on limited data sources may introduce bias and uncertainty, warranting cautious interpretation of findings.
- Additionally, variability in diagnostic coding practices and healthcare utilization may have affected case identification.
- The scarcity of contemporary, age-stratified epidemiological data highlights a critical need for robust longitudinal studies and improved registry-based surveillance to better characterize disease burden, guide resource allocation, and inform evidence-based pediatric hematology policy.

## ABBREVIATIONS

- ICD – International Classification of Diseases
- ITP – Immune thrombocytopenia
- US – United States
- UN – United Nations

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