

A targeted literature review of economic evaluations, health-related quality of life, healthcare resource use and costs associated with polymyalgia rheumatica

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INTRODUCTION

- Polymyalgia Rheumatica (PMR) is an inflammatory rheumatic disorder characterized by muscle pain and stiffness, especially in the neck, shoulder, and pelvic girdle.¹
- Glucocorticoids (GC) are the standard of care; however, it is reported that up to 50% of people with PMR relapse during the first year and 25% require treatment for 4-8 years.¹
- There is a need for new GC-sparing treatments to sustain remission and reduce the risk of adverse events associated with long term GC use.
- Objective:** To identify, and summarize existing literature on economic evaluations, health-related quality of life (HRQoL), healthcare resource utilization (HCRU) and costs in adults with PMR, and subsequently identify relevant knowledge gaps to support future research activities.

METHODS

- A targeted literature review was conducted in July 2023. Search strategies were implemented in MEDLINE, EMBASE, Cochrane, HTA and NHS economic evaluation databases.
- Hand searches on HTA websites, clinical trial registries and key congresses were also performed.
- All records identified were screened against pre-defined PICO criteria (Table 1) during the initial (title/abstract) and second (full text) screening.
- All publications except case reports, case series, comments, narrative reviews, editorials, animal studies, and notes were included. Results were limited to those in the English language.
- Screening and data extractions were completed by one reviewer. Uncertainties were discussed with a second independent reviewer, who also performed quality checks of extracted data.
- Study selection, data extraction and summary of findings were conducted using current best practices.

Table 1. PICO criteria

Population	Adults (≥50 years age) with polymyalgia rheumatica		
Interventions/Comparator	Any interventions or comparators		
Outcomes	Economic Evaluations - Model parameters and aspects of model design - Description of model and cost assumptions - Summary health outcomes (e.g. QALYs, LYG) - Model results including ICERs	HRQoL and Health utilities - HRQoL data - Descriptive summary of health states, and/or change in health status/QoL results - Preference-based measures of utilities - Direct utility estimates - Mapping algorithms for utilities	HCRU and costs - Cost drivers (hospitalization and length of stay) - Assumptions underpinning resource use - Direct and indirect costs - HCRU - Methods of valuation

Abbreviations: HCRU, healthcare resource utilization; HRQoL, health-related quality of life; ICER, incremental cost effectiveness ratio; LYG, life years gained; QALYs, quality adjusted life years

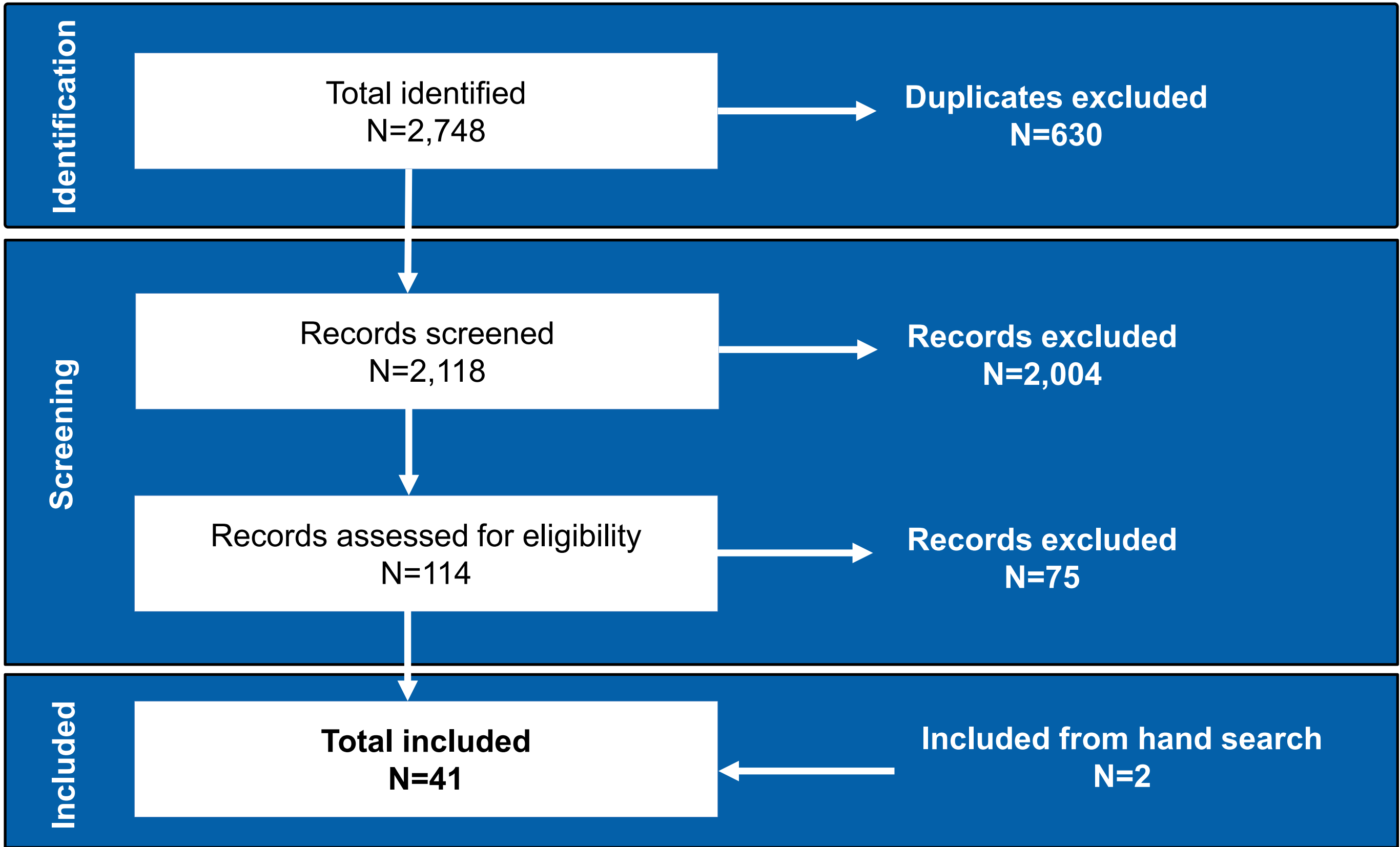
RESULTS

- A total of 2,748 publications were identified, of which 41 were included (Figure 1).

Economic Evaluations

- No economic evaluations of treatments for PMR were identified in the literature.

Figure 1. PRISMA flow diagram



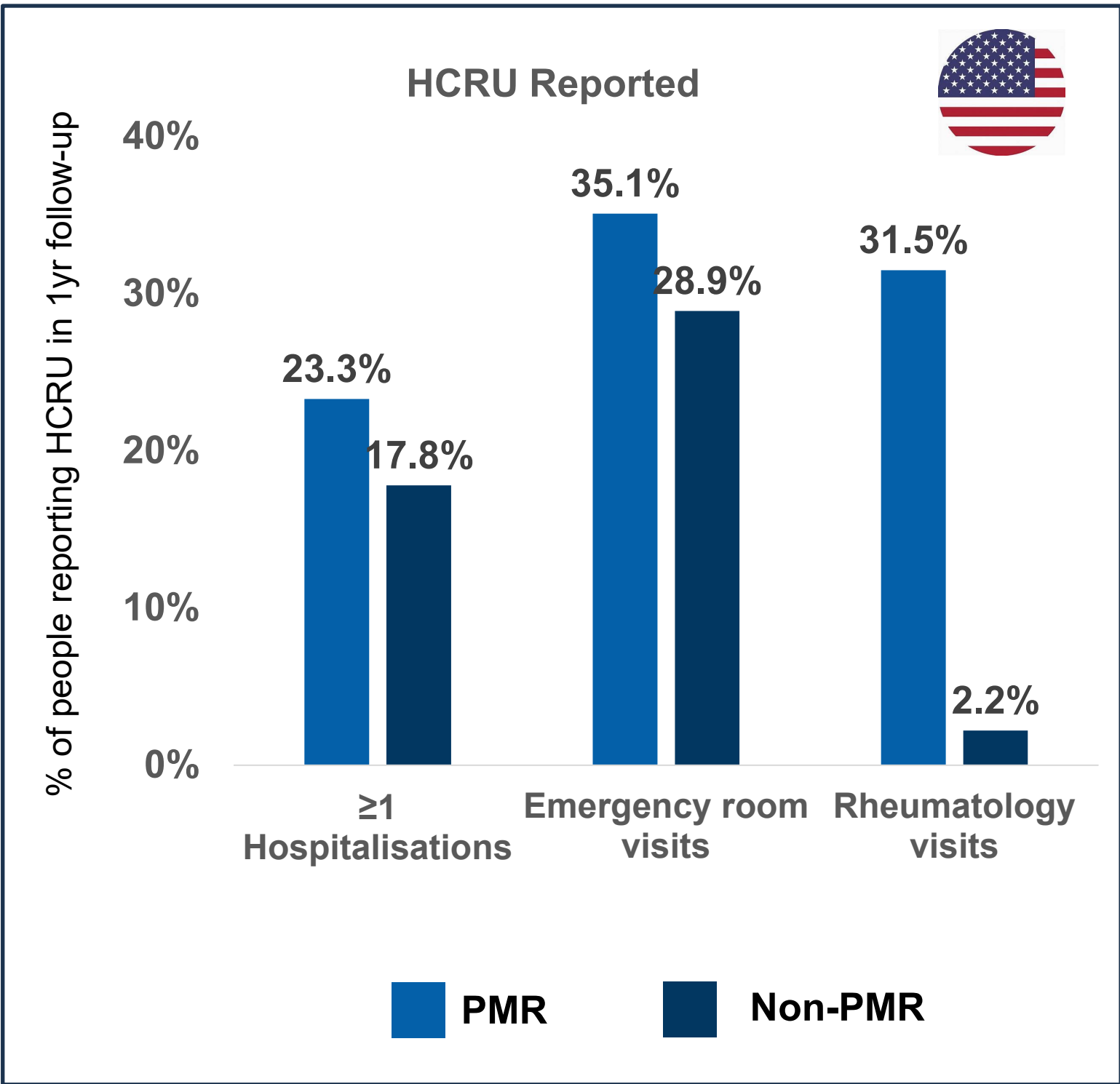
HRQoL/utility publications

- Thirty publications, across 12 countries, reported HRQoL outcomes for people with PMR, of which 10 also reported utility values. Majority of the publications were from the UK (n=8).
- Visual analogue scale (VAS) (n=20) and The Health Assessment Questionnaire (HAQ) (n=20) were the most common HRQoL tools. The EQ-5D was the most common utility instrument (n=10). All utility studies used generic preference-based measures.
- PMR is associated with a significant impact on HRQoL, both physically and mentally. Two publications reported a baseline physical component summary score of 35.^{1,2} Matteson et al 2012 also reported a baseline mental component summary score of 46 (0-100 score, higher scores indicating better QoL).²
- Treatment with sarilumab, tocilizumab or rituximab showed mixed results with regards to HRQoL/utility outcomes.^{1,3-6}
- Evidence gaps:** No HRQoL nor utility data on individuals in different disease states were identified. Lack of data on the impact on HRQoL among caregivers and/or family members.

HCRU and cost publications

- Eleven publications were identified [costs & HCRU (n=5); HCRU only (n=4); costs only (n=2)], majority were from the US (n=7).
- The percentage of individuals requiring rheumatology visits, within a 1-year period, was found to be significantly higher in people with PMR compared to non-PMR (Figure 2).⁷
- Similarly, people with PMR relapse reported a significantly higher mean number of rheumatology visits versus those without relapse (Figure 3).⁸
- Among those requiring hospitalization for PMR the average length of stay ranged between 3 and 6.1 days.⁹⁻¹³
- The total direct medical cost of PMR is reported to be highest in the first year and continues to be higher in subsequent years compared to community-based controls (Figure 4).¹⁴
- Inpatient stays, medications, and paramedical procedures were the main additional cost drivers among people with concomitant PMR and Giant Cell arteritis (GCA) diagnosis compared to GCA only.¹⁵
- Muller et al 2016 reported that 80% of people with PMR counted on someone to provide practical support and 85% counted on someone to provide emotional support.¹⁶
- Evidence gaps:** Direct cost data was limited and dated. No indirect costs or impact on work productivity and/or caregivers' impact was identified. There may be a need for additional data outside of the US.

Figure 2. HCRU in PMR vs non-PMR group⁷



Abbreviations: PMR, polymyalgia rheumatica; HCRU, healthcare resource utilization; yr, year

Figure 3. HCRU in people with PMR with and without relapse⁸

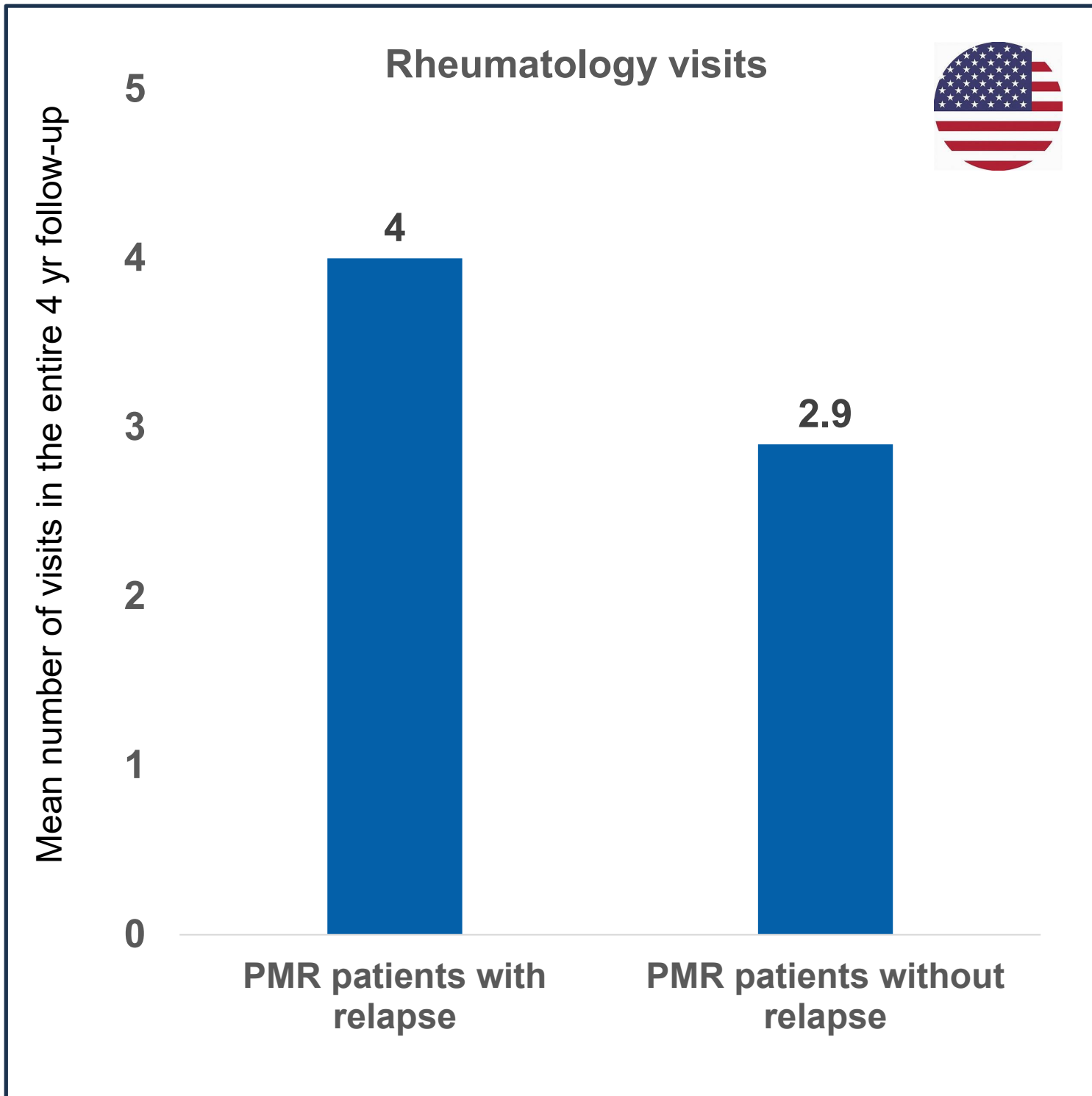
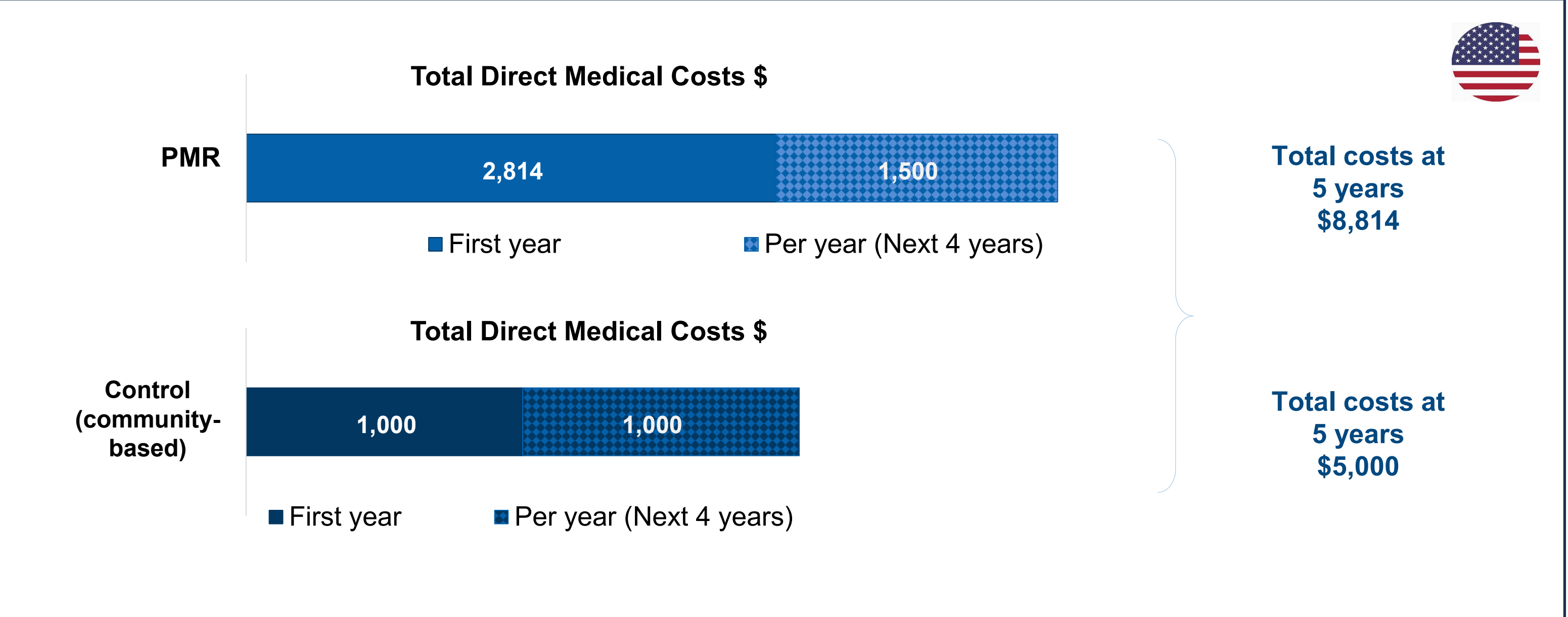


Figure 4. Direct costs for people with PMR¹⁴



CONCLUSION

- People with PMR had impaired HRQoL, significantly higher number of rheumatology visits, and almost three times higher direct medical costs, within the first year of diagnosis, compared to non-PMR/control.¹⁴
- Though the literature is limited, the findings suggest there is a high impact on people with PMR. Further research is required to understand the extent of the economic, humanistic, and caregiver burden associated with PMR.

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Acknowledgments & Conflict of interest

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