P. No. EE523

Human metapneumovirus (HMPV): Systematic literature review of economic and humanistic disease burden in adults

Rachael McCool[1]*, Chris Bartlett[1], Sophie Beale[2], Anne Littlewood[1], Emma Bishop[1], Caroline de Courville[3], Antonio Robles[3]

[1]York Health Economics Consortium, York, UK; [2]Hare Research, Malton, UK; [3]Sanofi, Lyon, France

*Presenting author (email: rachael.mccool@york.ac.uk)

There is a lack of published data on the economic and humanistic burden of HMPV.

Evidence highlights the substantial humanistic and economic burden of HMPV.

OBJECTIVE

- A systematic literature review (SLR) was conducted to identify economic and humanistic disease burden data in adults with HMPV.

BACKGROUND

- Human metapneumovirus (HMPV) belongs to the same family as respiratory syncytial virus (RSV)[1]. It causes flu-like symptoms[1]. It is a significant cause of acute respiratory infections and is associated with substantial morbidity, especially in older adults with various health profiles[2].

METHODS

- Nine databases were searched, including MEDLINE, Embase and EconLit, to identify economic burden (direct and indirect costs) and humanistic burden data (quality of life (QoL), social and emotional impact, daily functioning) in adults (≥18 years) with HMPV. A date limit of 2004 was used.
- Two reviewers independently assessed records against eligibility criteria. Data extraction was performed by one reviewer and verified by a second reviewer.

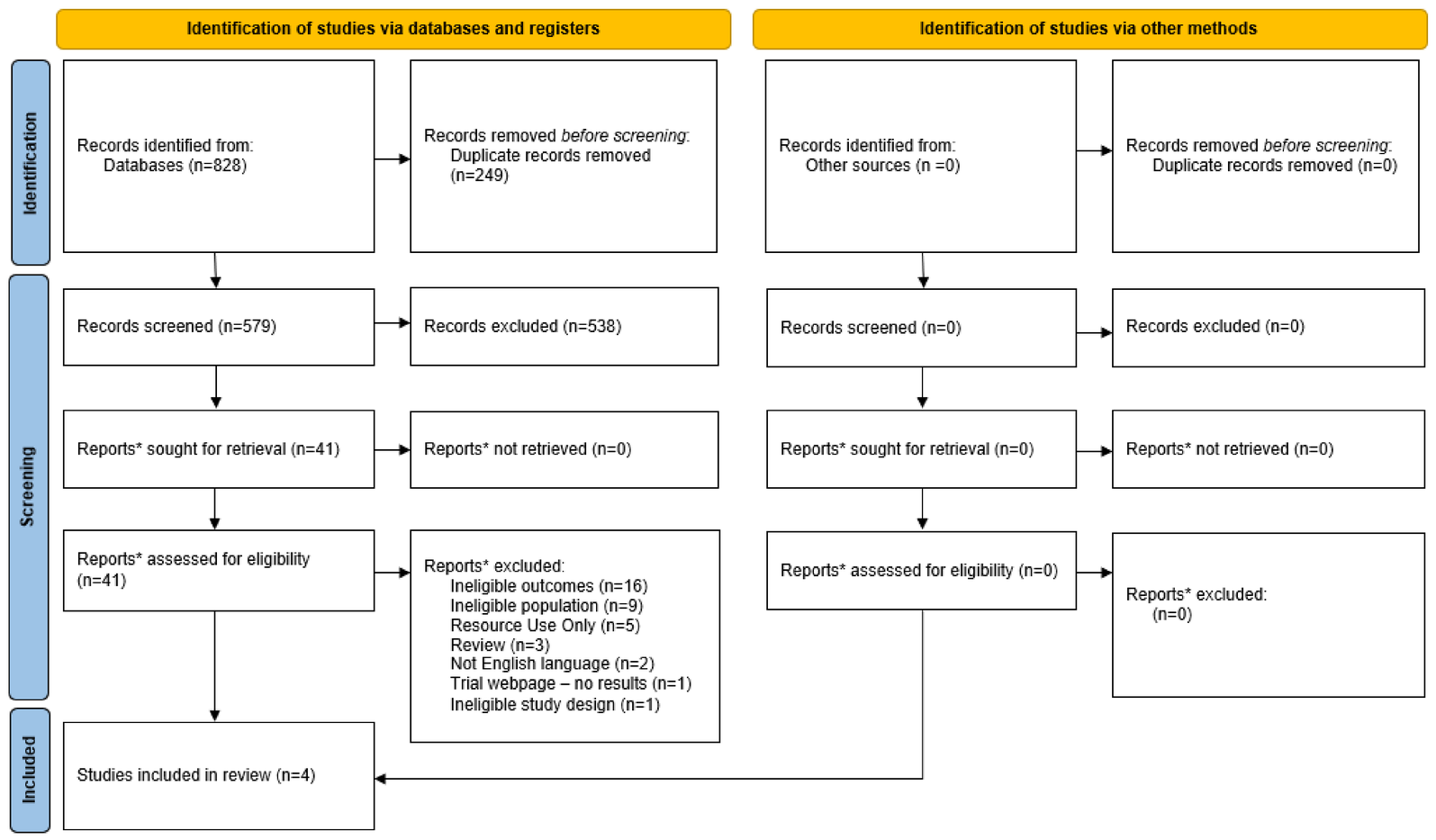
RESULTS

The SLR included 4 studies **(Figure 1)**.

CONCLUSIONS

- **Results from this SLR suggest that HMPV is associated with high healthcare costs and a substantial impact on patients' quality of life.**
- **Evidence is sparse and largely derived from hospital-based populations.**
- **Recovery may be incomplete, with residual symptoms and quality of life burden persisting months after discharge.**
- **In some studies, patients with HMPV were reported only as subgroups within broader respiratory infection cohorts; future research should focus specifically on HMPV populations across diverse healthcare settings to better characterise burden.**

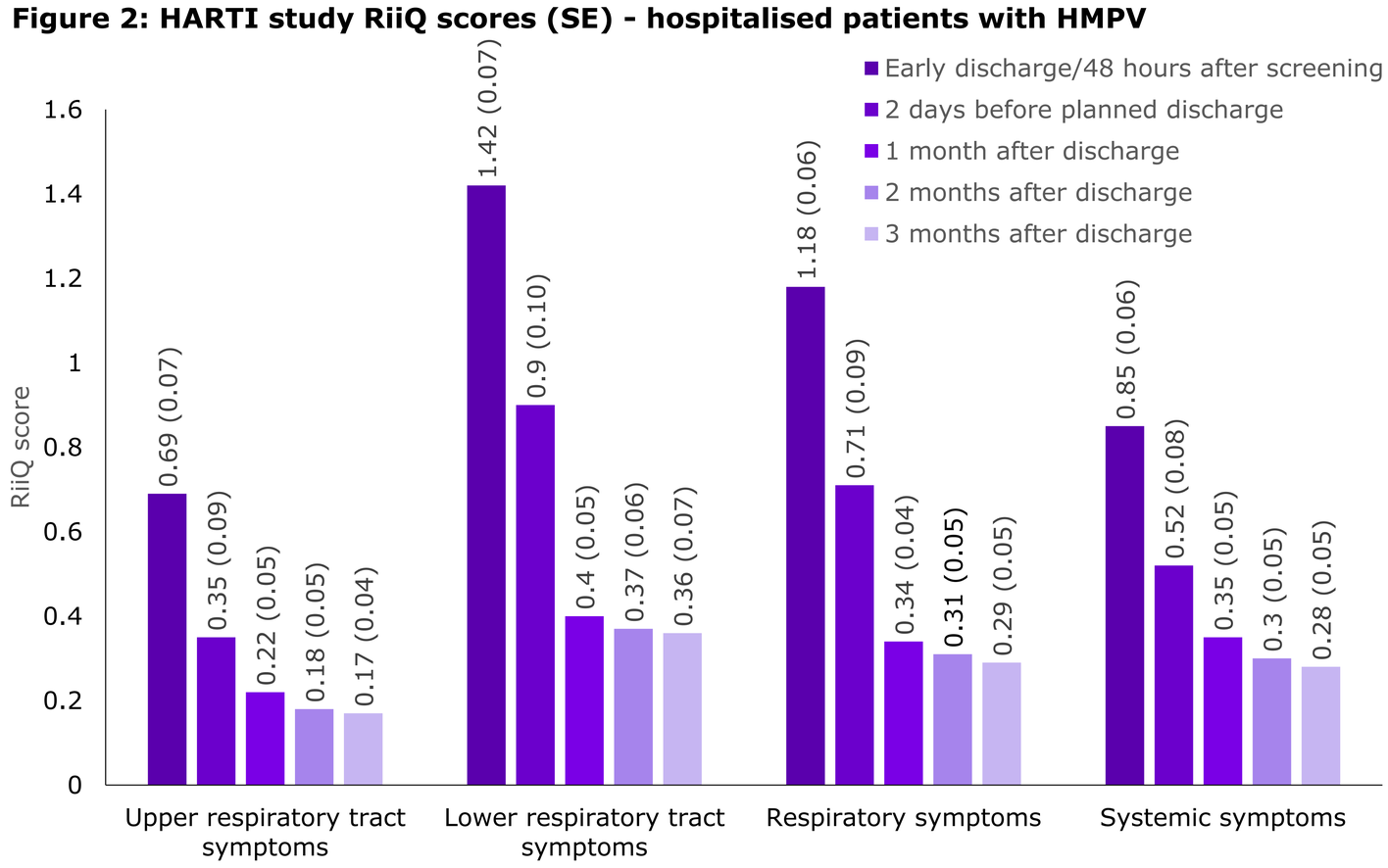
Figure 1: PRISMA 2020 flow diagram[3]



HUMANISTIC BURDEN (n=3)

Two studies[4 5] reported Respiratory Intensity and Impact Questionnaire (RiiQ) Symptom Scale data from the Hospitalized Acute Respiratory Tract Infection (HARTI) study. The HARTI study enrolled patients hospitalised with HMPV across 12 countries. Respiratory and systemic symptom domain scores following screening (n=88) were 1.18 and 0.85 respectively, falling to 0.29 and 0.28, 3 months after discharge (n=69)[4] **(Figure 2)**.

Figure 2: HARTI study RiiQ scores (SE) - hospitalised patients with HMPV



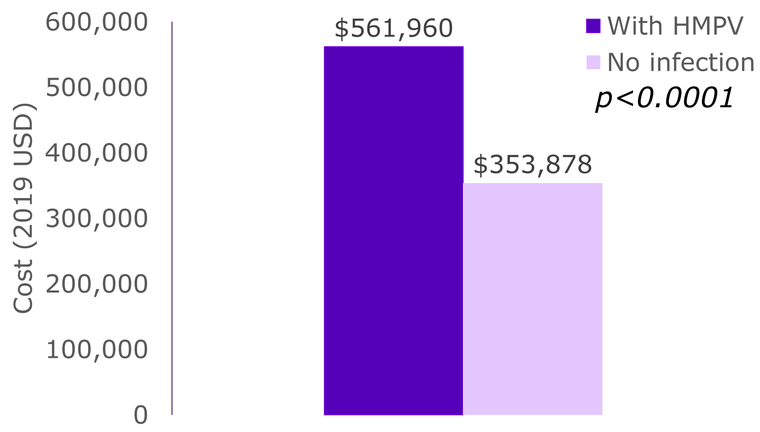
HARTI study EQ-5D visual analog scale (VAS) scores increased from 52.44 following screening (n=88) to 74.88 at 3 months (n=68)[4].

One study[6] estimated 2.1 disability adjusted life-years (DALYs) lost per 1,000 patients (aged >65 years) hospitalised with hMPV.

ECONOMIC BURDEN (n=1)

In a US study[7], mean total healthcare reimbursement within 1 year of allogeneic hematopoietic cell transplantation (allo-HSCT) in 2019 was significantly higher among patients with HMPV infection ($561,960) compared with those without infection ($353,878; p<0.0001; n=181) **(Figure 3)**.

Figure 3: Total healthcare reimbursement in allo-HSCT



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FUNDING STATEMENT: This systematic review was funded by Sanofi.

CONFLICTS OF INTEREST: Antonio Robles and Caroline de Courville are employed by Sanofi who sponsored this review. Chris Bartlett, Anne Littlewood, Emma Bishop and Rachael McCool are employed by York Health Economics Consortium, which received funding from Sanofi to conduct this review. Sophie Beale served as a consultant to York Health Economics Consortium.