

Socioeconomic status and economic burden of pertussis in adults: Post-hoc analyses of a retrospective database study in England

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Digital poster
Supplemental data



Narrated summary



Aims

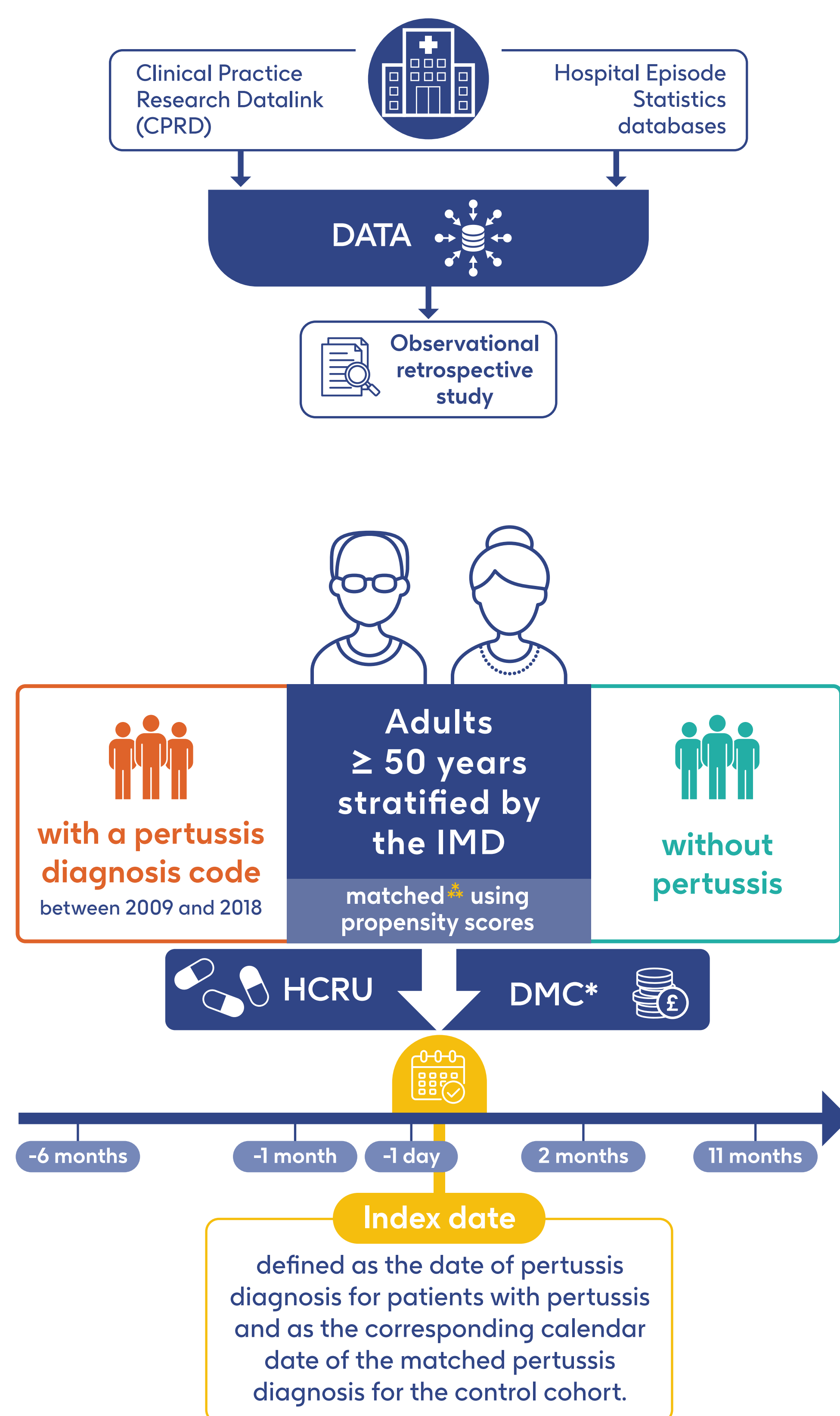


The objective is to estimate the economic burden of pertussis among ≥50-years-of-age in England, from 2009 to 2018, stratified by the index of multiple deprivation (IMD).*

50+

2009 → 2018

Methods



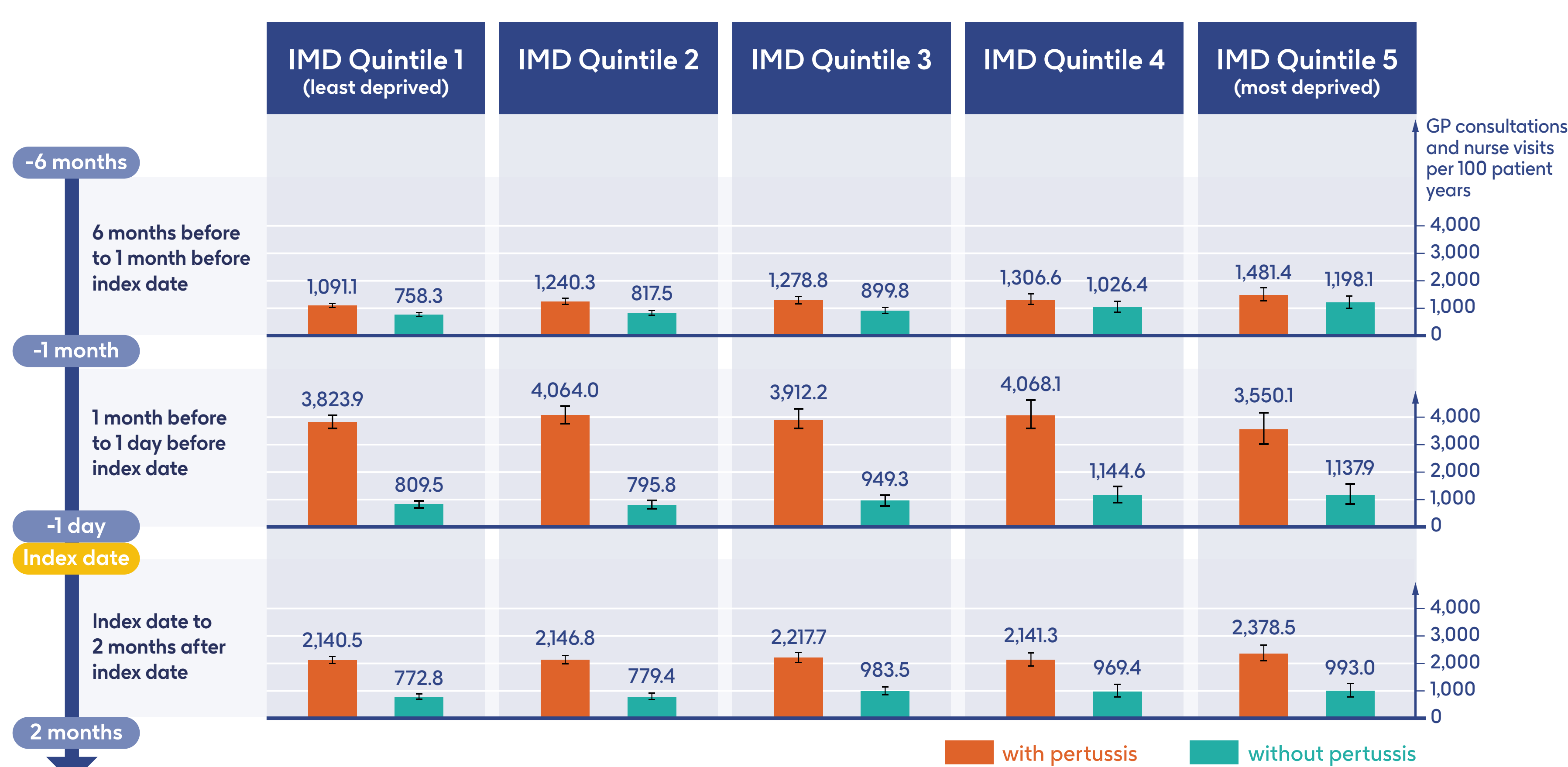
* A generalised linear model (GLM) compared DMC from 1 month before to 11 months after pertussis diagnosis. Costs were calculated by adjusting for inflation.

Results

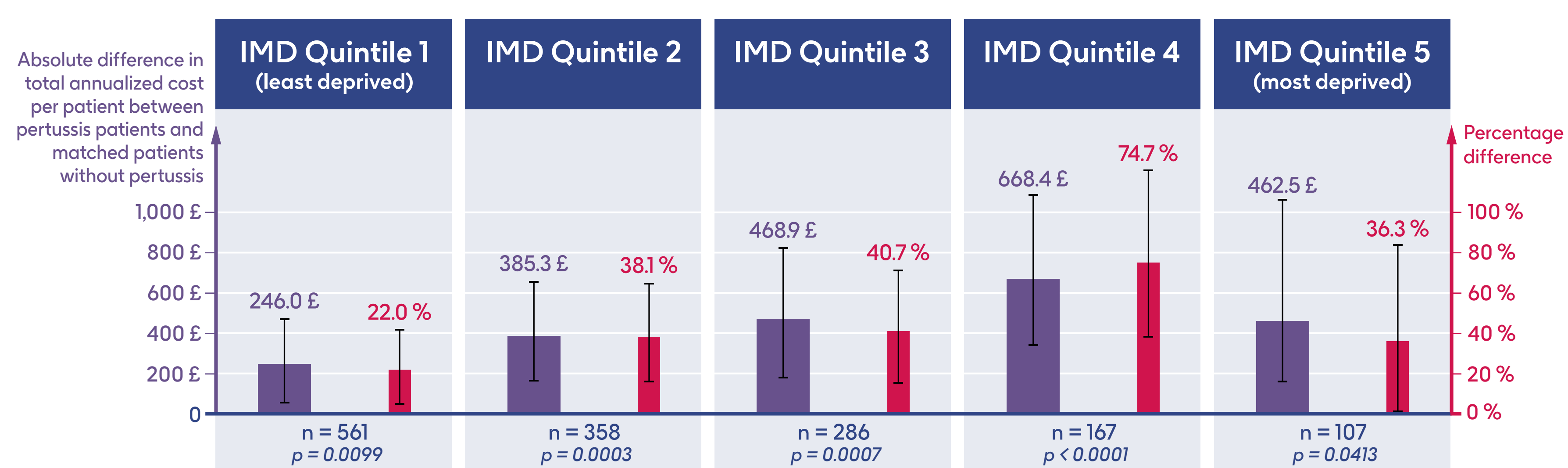
- All pertussis patients were matched to controls in each IMD quintile except for 1 patient in IMD quintile 5.
- The baseline characteristics were well balanced across all quintiles after propensity score matching (SMD <0.2 for all characteristics).
- The figures below compare HCRU and annualized cost per patient between the pertussis group (n=1,479) and the matched control cohort (n=1,479).



1. HCRU was higher in the pertussis groups compared to the matched control cohort in primary care settings between 6 months before the index date, up to 2 months after



2. The total annualized cost* per patient (calculated using GLM) tended to increase with IMD quintile from 1 month prior to 11 months after index date



Black bars: represent 95% confidence interval;
p-values: derived using the Wilcoxon rank-sum test to compare annualized medical costs between the 2 groups

Background

- The ageing global population may increase the health and economic burden of pertussis due to the increased risk of disease among adults ≥50-years-of-age.¹⁻³
- Besides age, socio-economic status is a known determinant of access to healthcare.⁴ It is important for understanding the impact of health inequity on a specific disease.⁵
- The impact of socio-economic status on the economic burden of pertussis remains unexplored.

Conclusions



- Economic burden of pertussis was higher among the pertussis cohort compared to non-pertussis cohort within all IMD categories.



- Economic burden of pertussis tended to increase with declining socioeconomic status (from least to most deprived).



- Additional studies are required to understand the link between IMD status and pertussis economic burden.

Abbreviations

DMC: direct medical costs;
GP: general practitioner;
HCRU: healthcare resource utilisation;
n: total number of patients in each cohort;
SMD: standardized mean difference.

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Disclosures

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Supplementary information

Background

The **index of multiple deprivation (IMD)** is an area-based measure of relative deprivation. The IMD is a proxy for socioeconomic status, approximated using small level measures of relative deprivation that are available for linkage through the patient code. The data are provided in the form of quintiles of deprivation and are based on 38 different indicators across seven different domains. Linkage to IMD is available for all practices consenting to participate in the Clinical Practice Research Datalink linkage scheme,⁶ and was used in this study to describe patients' socioeconomic status.

Methods

Matching: pertussis and non-pertussis patients were matched on a propensity score model including age, gender, baseline healthcare resource utilisation costs, smoking status, number of baseline comorbidities, history of asthma, history of chronic obstructive pulmonary disease, history of hypertension, history of depression and history of diabetes.

Results

Total annualized cost: total cost in primary and secondary care was used as the dependent variable, with log-years as an offset. The total cost per patient included the total cost in primary care (general practitioner consultations and nurse visits, five most common prescribed medications and clinical values for pertussis patients between 1 month prior to index and 11 months after index) and the total cost in secondary care (all-cause accident and emergency visits, all-cause hospital inpatient admissions, all-cause outpatient specialist visits) incurred between 1 month prior to index date and 11 months after index. No additional covariates were included in the model. The model used a log link and Tweedie distribution.

Authors information and disclosures

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