

Healthcare resource use in uncontrolled hypertension: An observational study in England using electronic health records

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INTRODUCTION

Uncontrolled hypertension (uHTN) is a condition when blood pressure (BP) consistently stays above target despite taking antihypertensive treatments.

Persistent elevation of BP is associated with increased healthcare resource use and overall healthcare costs.

OBJECTIVE

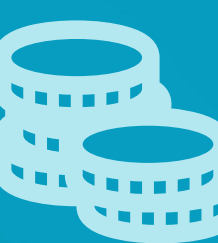
 This research aims to quantify healthcare resource utilisation (HCRU) among patients with uHTN in England.

METHODS

- A retrospective observational study using anonymised, linked data from:

Primary care 
(Clinical Practice Research Datalink [Aurum])

Secondary care 
Hospital Episode Statistics




- Included individuals newly diagnosed with hypertension from either primary or secondary care, between January 2018 and December 2023
- uHTN was defined as a first BP (index date) above 140/90 mmHg while receiving at least two antihypertensive medications concurrently for ≥30 days (“treated”)
- HCRU was assessed based on healthcare contacts from index date to end of follow-up
- Healthcare costs were calculated using Healthcare Resource Groups (HRGs) National Costs Grouper and NHS tariff for general practitioner (GP) prescriptions, reported as *per person per year (PPPY)*

RESULTS

Study population

- 130,105** treated patients → **89,291** (68.6%) had uHTN at index

Patient characteristics

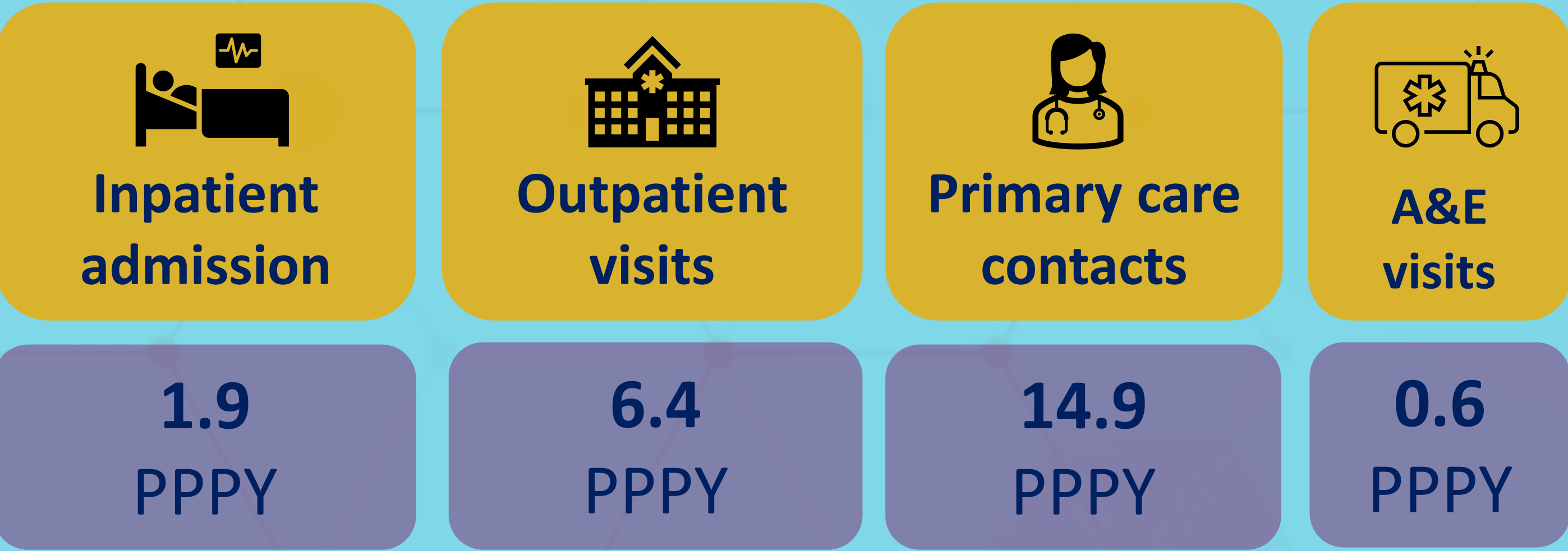
- Mean age:  **61.9** years (SD: 13.4)  **54.8% vs 45.2%**
- Mean body mass index: 30.9 kg/m²
- 59.9% current or former smokers
- Systolic BP and diastolic BP averaged 149.1 (SD: 13.6) and 86.9 (SD: 11.2), respectively

| Comorbidities, n (%) | | Antihypertensive medications, n (%) | |
|---|--|---|--|
| Heart failure | | Number of drug classes | |
| CKD stage 3-5 | | None | |
| Coronary artery disease/Ischaemic heart disease | | 1 | |
| Atrial fibrillation | | 2 | |
| Type 2 diabetes | | 3 | |
| Dyslipidaemia | | ≥4 | |
| COVID-19 | | Drug classes at index | |
| Mood disorders (depression and bipolar) | | ACEi | |
| Anxiety/Stress | | ARBs | |
| Rheumatic disease | | Beta blockers | |
| | | Calcium channel blockers | |
| | | Diuretics | |
| | | MRAs | |
| | | Concomitant treatments ¹ , n (%) | |
| | | SGLT2i | |
| | | Statins | |
| | | Aspirin | |

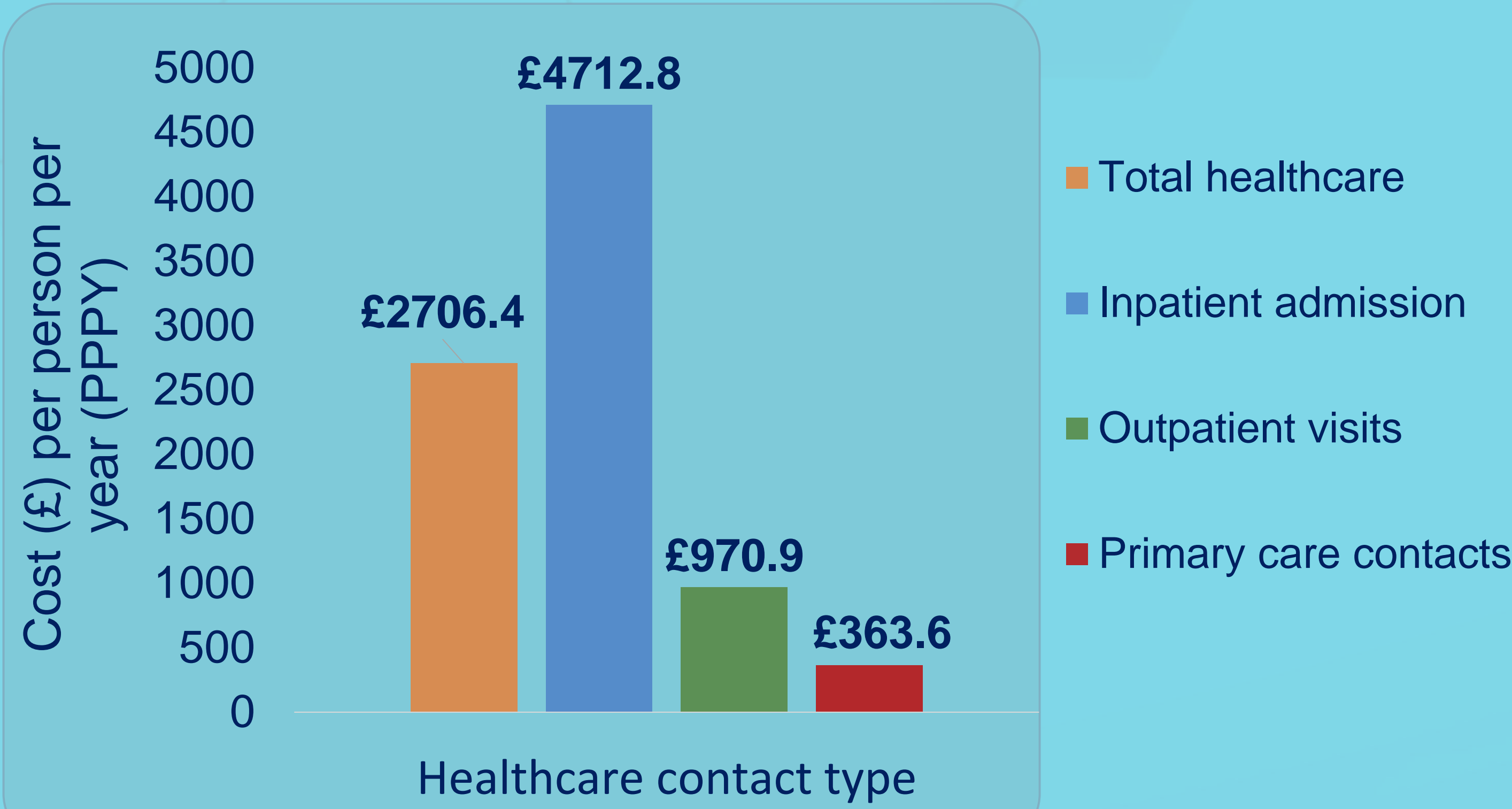
¹ At study index
ACEi, angiotensin-converting enzyme inhibitor; ARBs, angiotensin II receptor blockers; CKD, chronic kidney disease; MRAs, mineralocorticoid receptor antagonists; SGLT2i, sodium-glucose cotransporter 2 inhibitor

Healthcare contacts & costs

- During follow-up, 34.9% of patients had at least one hospital admission (mean 1.9 PPPY), with an average length of stay of 5.7 days PPPY
- Average number of patient healthcare contacts PPYY:



- Total and categorised healthcare costs²:



² For patients with non-zero costs for each specific component. Total healthcare cost is averaged across all patients with any healthcare cost.

CONCLUSIONS

- **Uncontrolled hypertension remains common among treated patients and is linked to high healthcare resource utilisation and costs, largely due to hospital admissions**
- **These results underscore the need for improved blood pressure management to reduce both clinical and economic burdens**

Funding & acknowledgements

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