

# Right patient, right device:

## a study comparing asthma control between inhaler device types

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### Aim

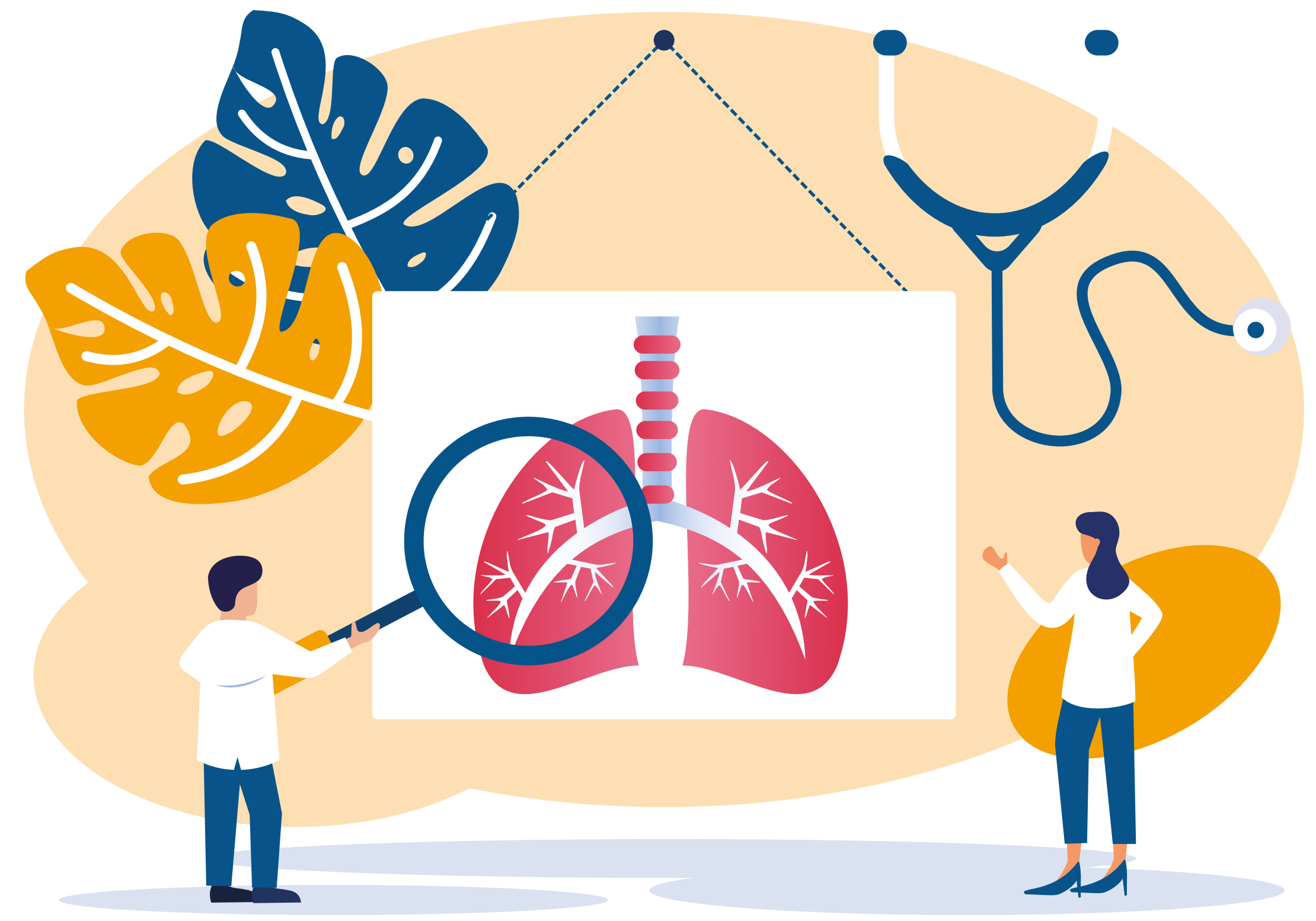
PCRS has long promoted patient preference and patient inhaler technique ability as an example of precision medicine. In contrast, prescribing formularies are often driven by acquisition cost and, increasingly, environmental factors. We investigated whether there is a difference in asthma control between patients prescribed dry powder inhalers (DPIs) or pressurised metered dose inhalers (pMDIs).

### Methods

Between 1st January 2022 and 30th April 2023, National Services for Health Improvement (NSHI) conducted audits of people with asthma in 447 practices across 111 CCGs / Health Boards / ICBs in the UK. Permission was obtained from participating practices to conduct research from anonymised aggregated data. Sequential patients aged 20 to 69 years with a clinical diagnosis of asthma, as identified by a READ code, were eligible for inclusion. Data collected included inhaler prescriptions, RCP3 score, courses of oral steroids and asthma hospital admissions.

### Results

From the 116,841 asthma patients in the database, 96,074 were using either a single DPI or a single pMDI as a preventer medication. Patients on a pMDI were statistically more likely to have a lower RCP3 score than a DPI ( $p < 0.001$ ), use less oral steroids ( $p < 0.001$ ) and be associated with less hospital admissions ( $p = 0.042$ ). Details are shown



in Figure 1. The statistical significance observed is likely to have been influenced by the large sample size, as the percentage differences were numerically small between device types. These small differences are unlikely to result in clinically relevant differences between the devices.

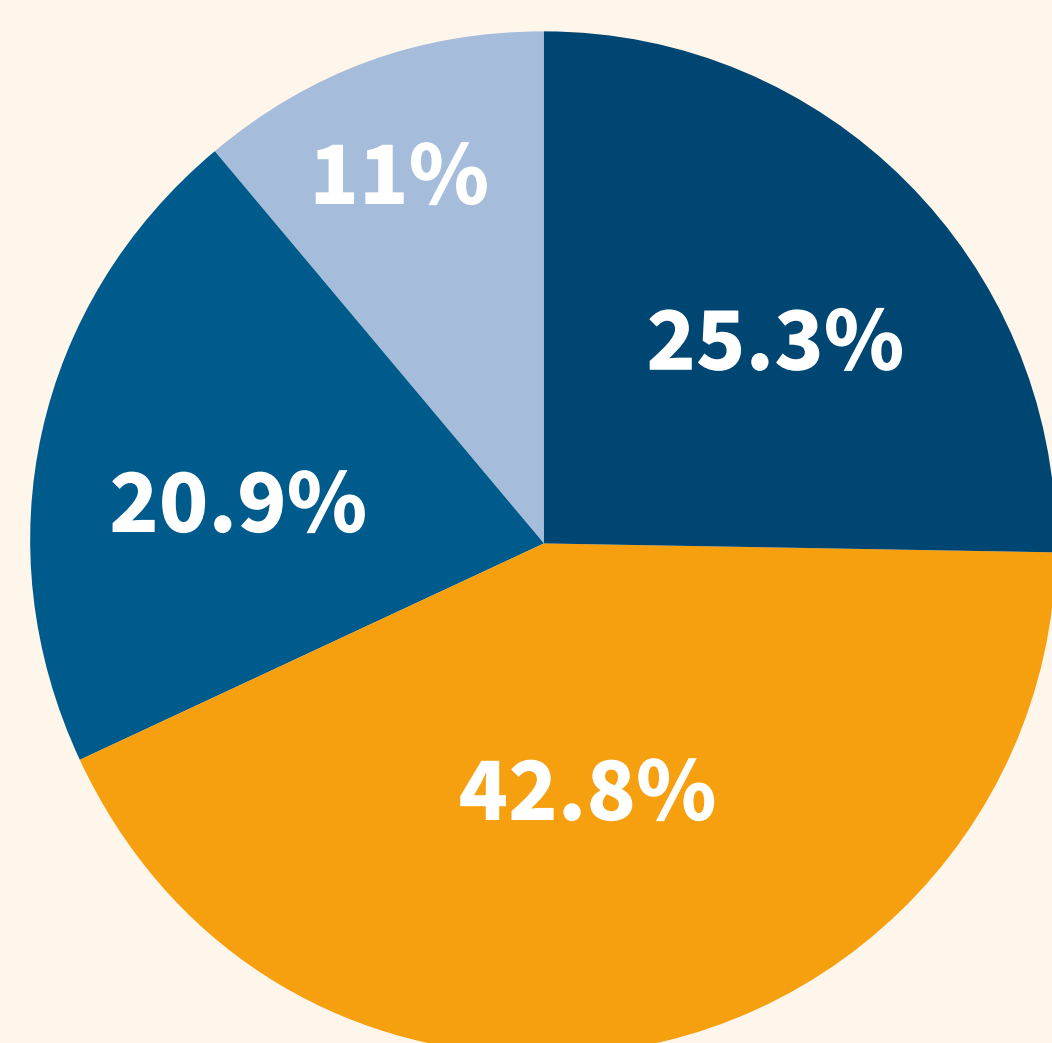
### Conclusions

Overall, the choice of device type does not appear to influence asthma control. It remains appropriate to choose the right device for the right patient.

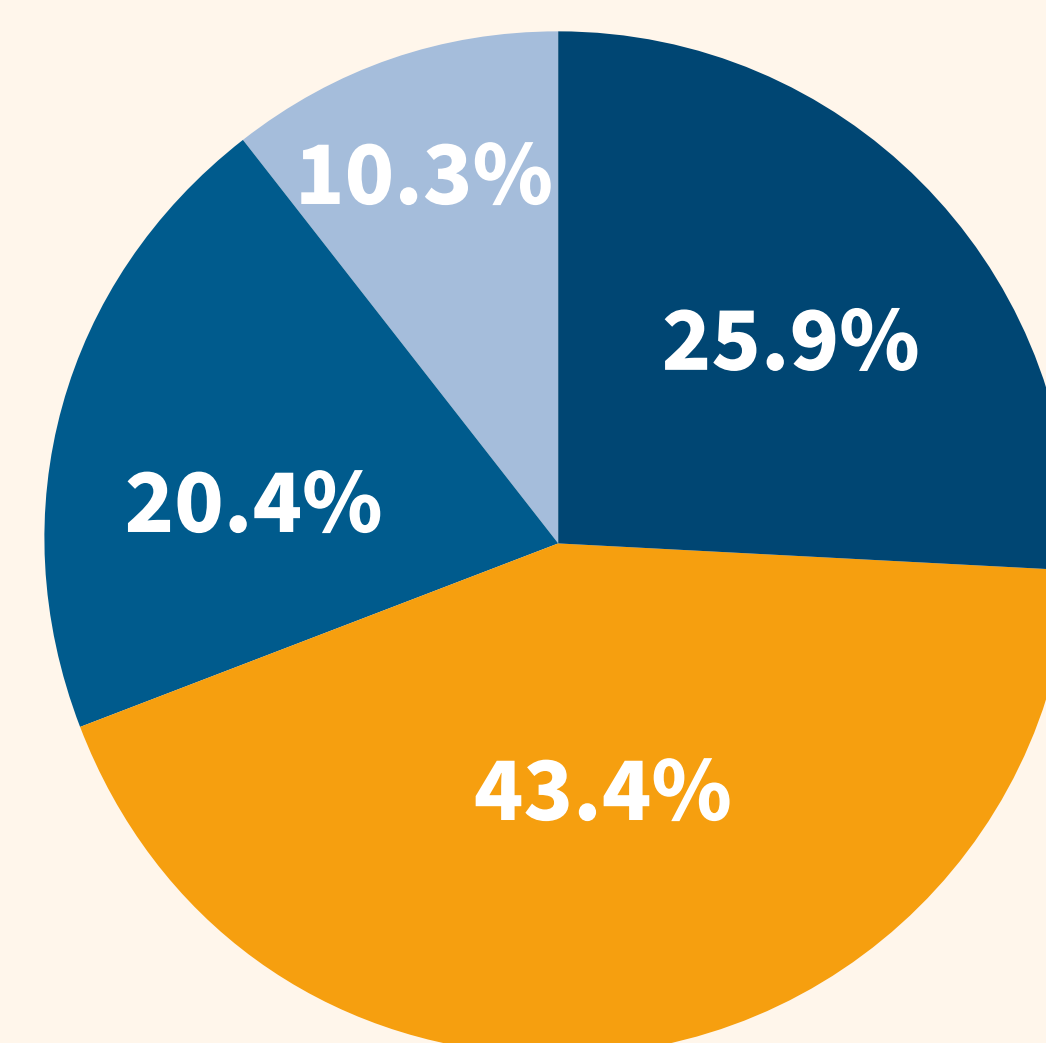
**Figure 1.** Measures of asthma control by device type

Statistically significant differences were observed between device types for RCP3 score ( $p < 0.001$ ), number of courses of oral steroids in the last 12 months ( $p < 0.001$ ), and the number of asthma hospital admissions in the last 12 months ( $p = 0.042$ ).

### RCP3 score

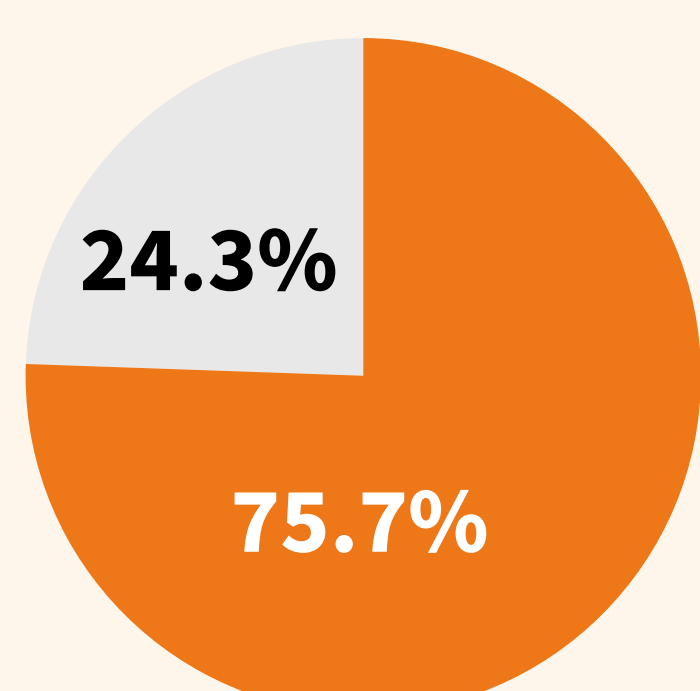


DPI % (n)	
0	25.3 (7,408)
1	42.8 (12,556)
2	20.9 (6,125)
3	11.0 (3,235)

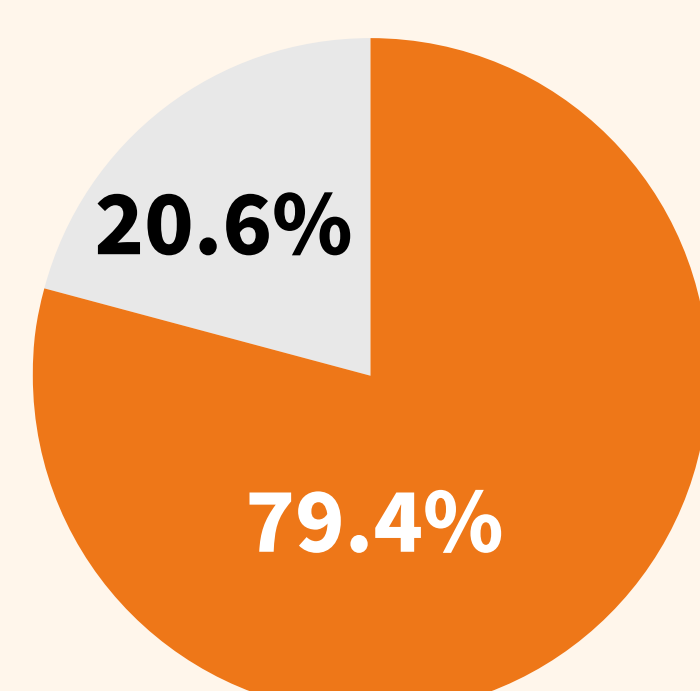


pMDI % (n)	
0	25.9 (17,278)
1	43.4 (28,976)
2	20.4 (13,618)
3	10.3 (6,878)

### Number of courses of oral steroids in last 12 months

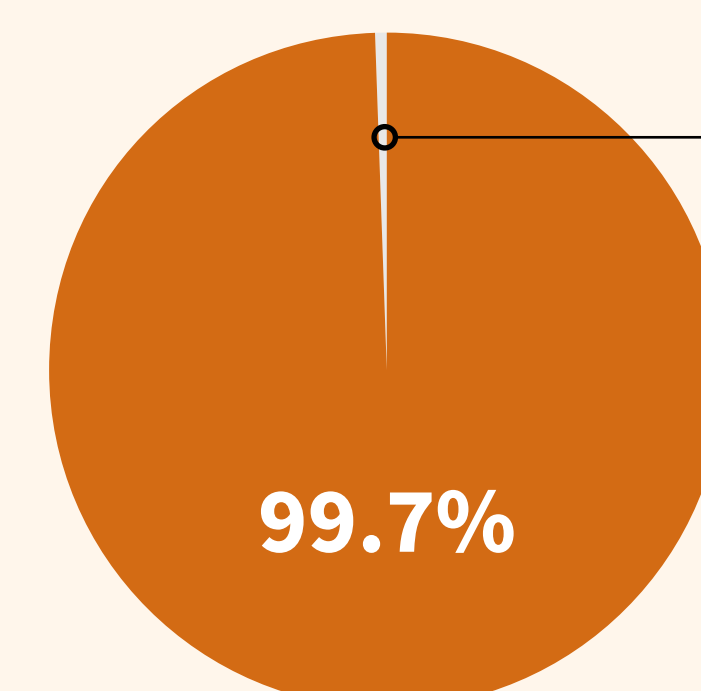


DPI % (n)	
None	75.7 (22,192)
1 or more	24.3 (7,132)

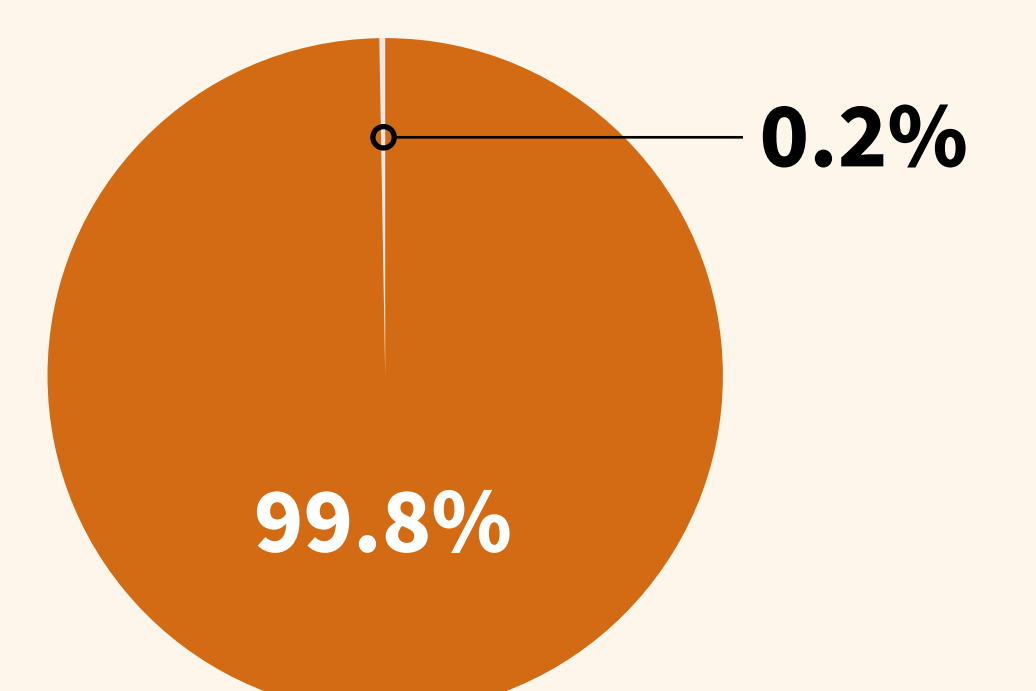


pMDI % (n)	
None	79.4 (53,029)
1 or more	20.6 (13,721)

### Number of asthma hospital admissions in last 12 months



DPI % (n)	
None	99.7 (29,247)
1 or more	0.3 (77)



pMDI % (n)	
None	99.8 (66,619)
1 or more	0.2 (131)

**Total n**      **29,324 (DPI)**      **66,750 (pMDI)**

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