Introduction and Objectives Socioeconomic deprivation is known to be associated with adverse asthma outcomes, but the mechanisms of this have not been determined. We aimed to investigate the associations between adverse asthma outcomes (hospitalisations, rescue prednisolone courses, and excessive short-acting $\beta_2$ agonist [SABA] use), socioeconomic deprivation and ICS adherence, at a population level in England.

Methods We obtained data for the 106 English Clinical Commissioning Group (CCG) regions from publicly available data sources: Office for National Statistics (median age), Public Health England Fingertips (asthma prevalence, hospital admissions), Ministry of Housing, Communities & Local Government [Index of Multiple Deprivation [IMD] and its seven subdomains of Income, Employment, Education, Barriers to housing and services, Health, Crime and Living environment), and NHS Business Services Authority Respiratory Dashboard (ICS non-adherence, excess SABA use and total prednisolone courses). Pearson’s correlations were used to investigate relationships between exposure and outcome variables. Multivariable linear regression models with stepwise entry of predictors were used to determine significant predictors of asthma outcomes. Statistical analysis was performed using IBM SPSS V28, with a p value of < 0.05 as the threshold for statistical significance.

Results IMD was positively correlated with excess SABA use ($R = 0.709$, $p < 0.001$), hospital admissions ($R = 0.620$, $p < 0.001$) and prednisolone courses ($R = 0.438$, $p < 0.001$). ICS non-adherence was negatively correlated with excess SABA use ($R = -0.723$, $p < 0.001$), hospital admissions ($R = -0.241$, $p = 0.013$) and prednisolone courses ($R = -0.519$, $p < 0.001$). In multivariable linear regression models, independent predictors of excess SABA use were the Employment and Living environment components of IMD. Independent predictors of hospital admissions were the Income, Employment, Living environment, and Health components of IMD. Independent predictors of prednisolone courses were the Health component of IMD and median age.

Conclusions Socioeconomic deprivation appears to be a primary driver of regional variability in asthma outcomes in England. Low income, and poor quality work and housing may play a particular role. Populations with worse asthma outcomes appear to adhere better to ICS therapy on average.

P47 AN OBSERVATIONAL STUDY ON THE CARBON FOOTPRINT FROM INHALER USE IN PEOPLE WITH ASTHMA

Introduction and Objective Inhaled asthma therapy contributes to global warming but is currently a non-negotiable element of patient care. The carbon footprint of inhalers has previously been described. Pressurised metered dose inhalers (pMDIs) may have a higher carbon footprint than dry powder inhalers (and soft mist inhalers), but the volume of inhalers is also an important contributor. Those with poor asthma control may have higher numbers of inhalers prescribed. We sought to determine whether people with self-reported poor asthma control (Royal College of Physicians 3 Questions for Asthma (RCP 3 questions)) contributed a different carbon footprint to those with better control.

Methods National Services for Health Improvement (NSHI) staff conduct primary care clinical assessments of people with asthma. Permission has been obtained from participating practices for NSHI to hold anonymised aggregated routinely collected data. Between 1stJanuary 2022 and 30th April 2023, NSHI conducted respiratory audits in 447 practices across England.

Results Data collected from 199 respondents between February and June 2023 showed that they were prescribed pMDIs (47.7%), dry-powder inhalers (25.6%) or both (26.1%); 85.4% were using at least one inhaler with a dose counter. Of 29 respondents using devices without a dose counter, 55.2% were not confident in identifying when their inhaler is empty. When all respondents were asked how they knew when their inhaler was empty, 24.6% reported that it was when they no longer received a dose; 22.6%, when it felt empty when shaken, and 19.1%, when it stops ‘puffing’. Of 170 respondents with an inhaler with dose counter, 77.1% reported starting a new inhaler when the dose counter indicates zero; however, 20.6% carried on using the device beyond zero. When considering disposal of old/unwanted inhalers, 52.8% of respondents disposed of them irrespective of whether they were empty; 41.7% disposed of them in household waste and 27.1%, in household recycling. Many respondents reported a limited knowledge of recycling schemes.

Conclusion Most respondents using devices without a dose counter were not confident in identifying when their inhaler was empty. Furthermore, many respondents who used inhalers with a dose counter continued to use them beyond ‘zero’; this has implications for disease control and patient safety. There was a limited awareness of appropriate recycling mechanisms for inhalers. Taken together, there is a clear opportunity for educational initiatives for optimising device use and disposal.

Please refer to page A289 for declarations of interest related to this abstract.