

German Regional Variation of Acute and High Oral Corticosteroid Use for Asthma

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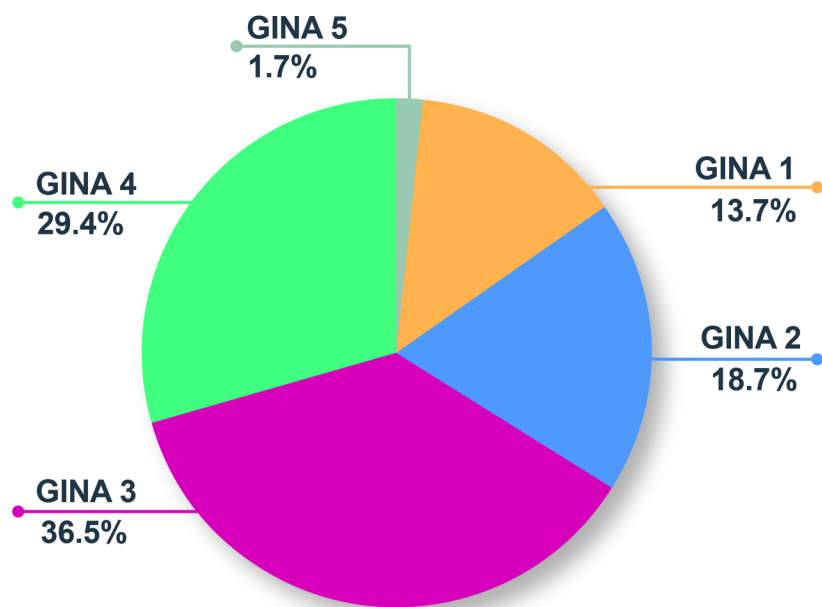
Abstract

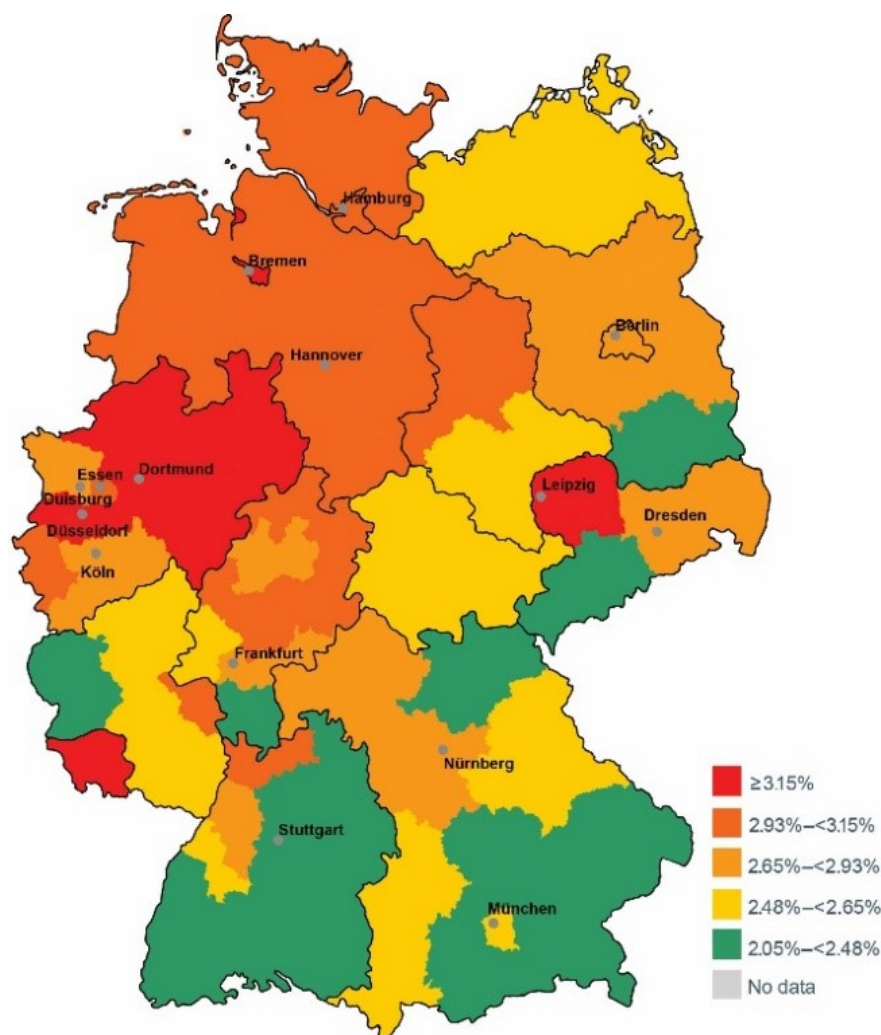
To improve understanding of real-world asthma treatment and inform physician education, we evaluated regional variation in asthma prevalence and oral corticosteroid (OCS) use across Germany. We developed a machine learning gradient boosted tree model with IMS® Disease Analyzer electronic medical records, which cover 3% of German patients. This model had a 91% accuracy in predicting the presence of asthma and chronic obstructive pulmonary disease. We applied the model to the IMS® Longitudinal Prescription database, with 82% national coverage, to classify patients receiving treatment for airflow obstruction from October 2017–September 2018 in 63 regions in Germany. Of 2.4 million individuals under statutory health insurance with predicted high OCS use for asthma (defined as 1 tablet per day for the duration of therapy), 13.7%, 18.7%, 36.5%, 29.4%, and 1.7% were categorised as receiving Global Initiative for Asthma (GINA) Steps 1, 2, 3, 4, and 5 treatment, respectively. Approximately 7–15% of those receiving GINA Steps 1–4 treatment, and 35% of those receiving Step 5 treatment received [?]1 acute OCS prescription (duration <10 days). Of patients receiving GINA Steps 1–4 and Step 5 treatments, 1–3% and 86%, respectively, received [?]1 OCS prescription defined as high OCS use. Cumulative OCS dosage and percentages of patients receiving OCS differed substantially across regions, and regions with lower OCS use had greater use of biologic therapies. Both acute and high OCS use varied regionally across Germany, with overall use greater than recommended by guidelines for all degrees of asthma severity.

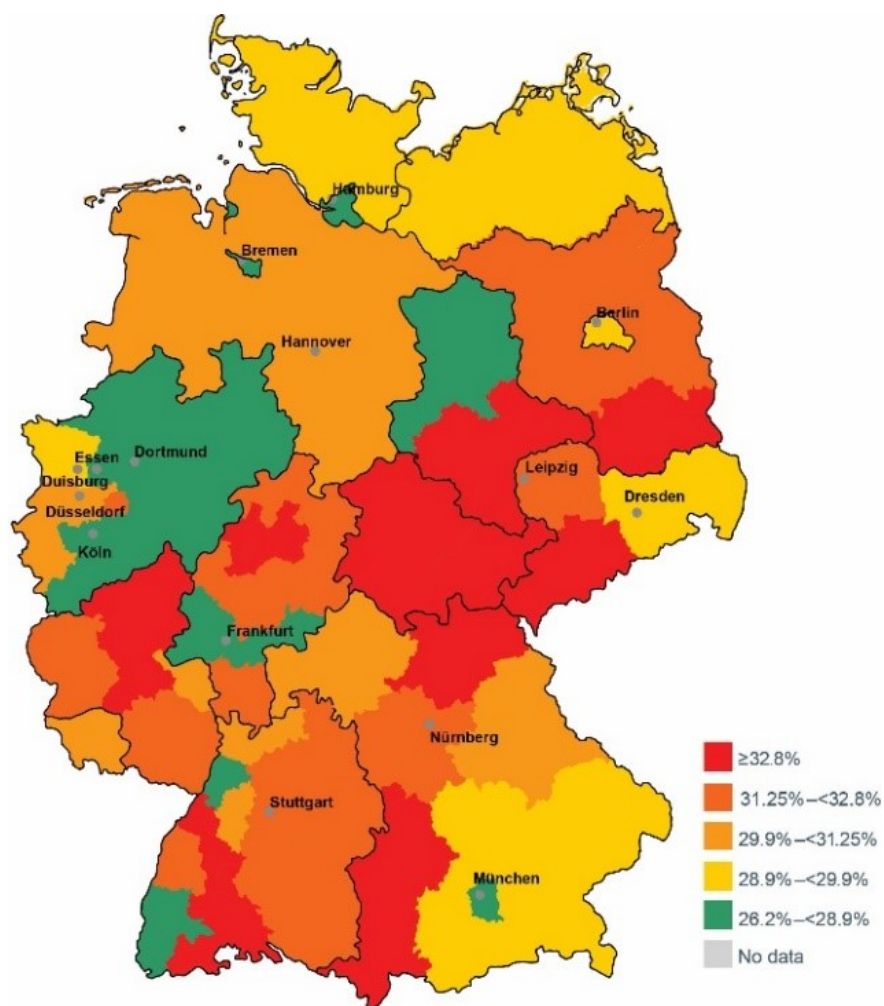
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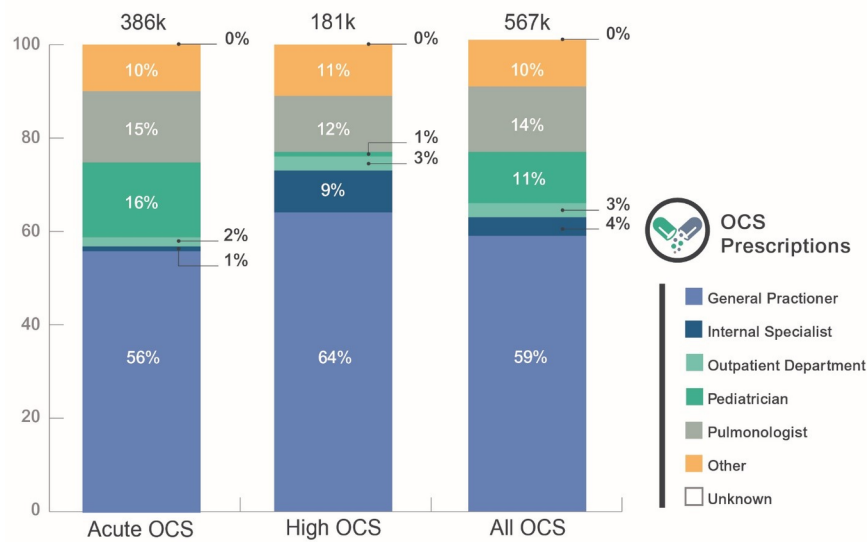
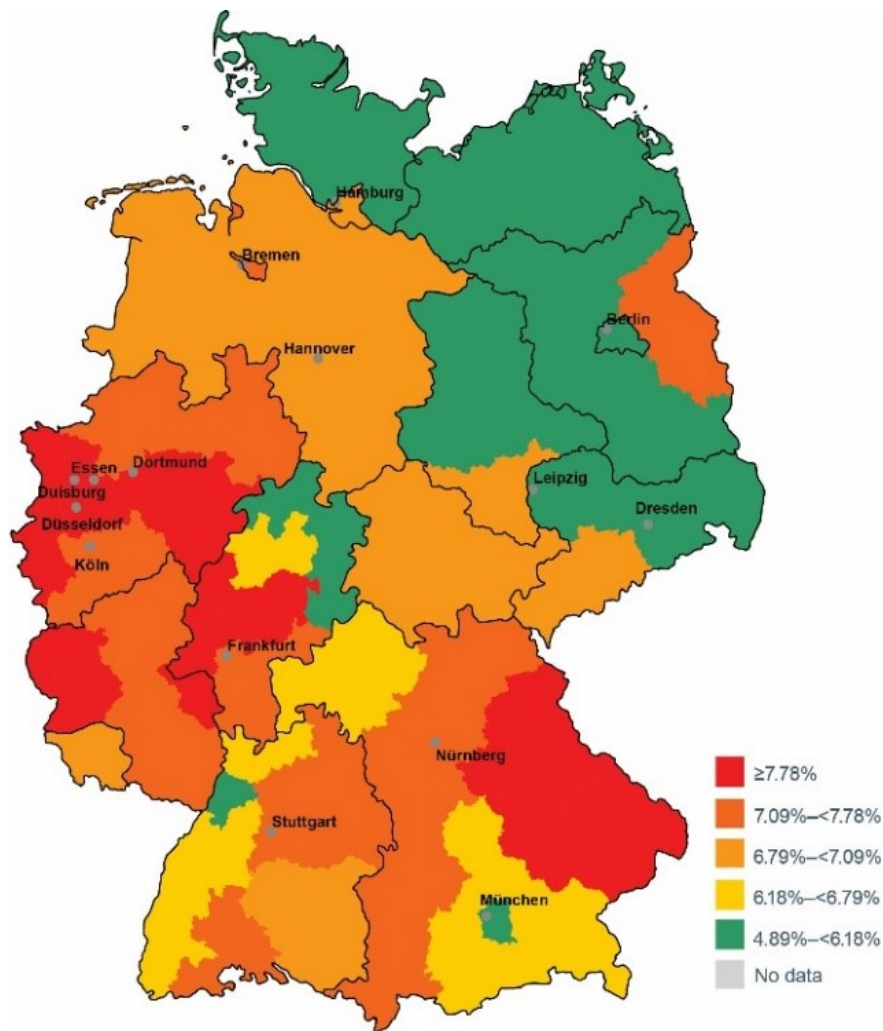
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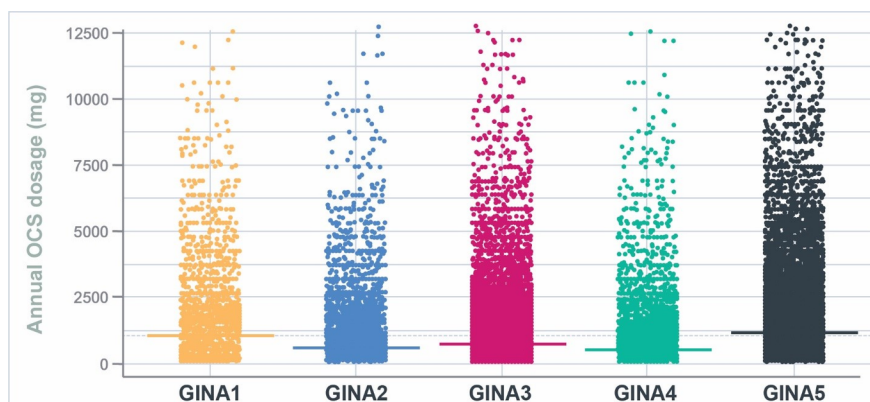
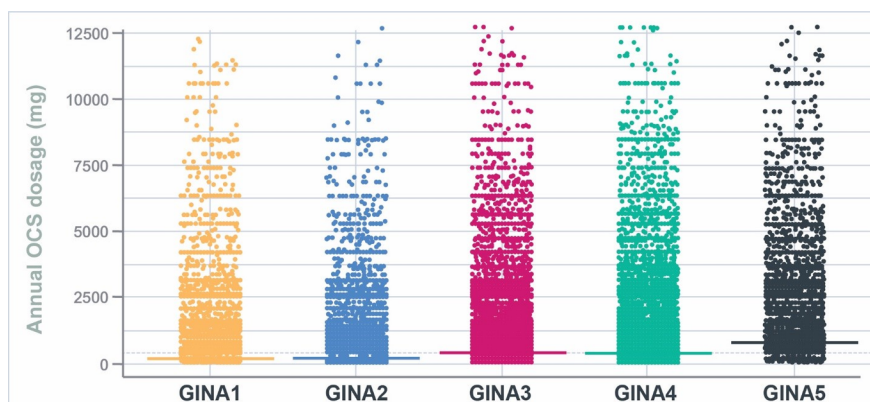
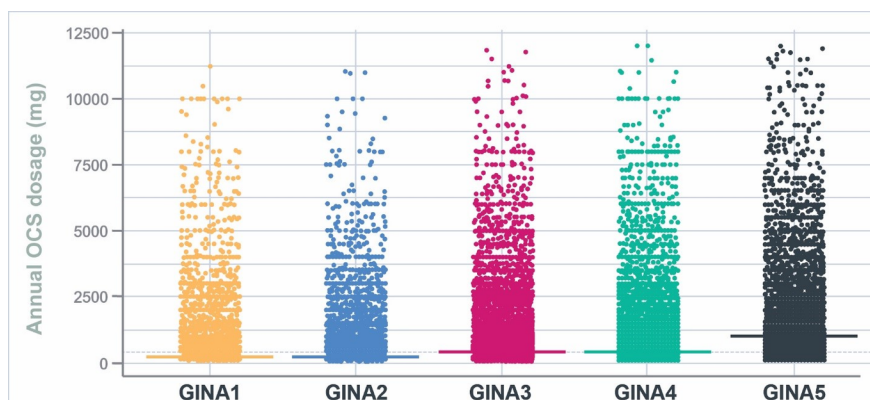


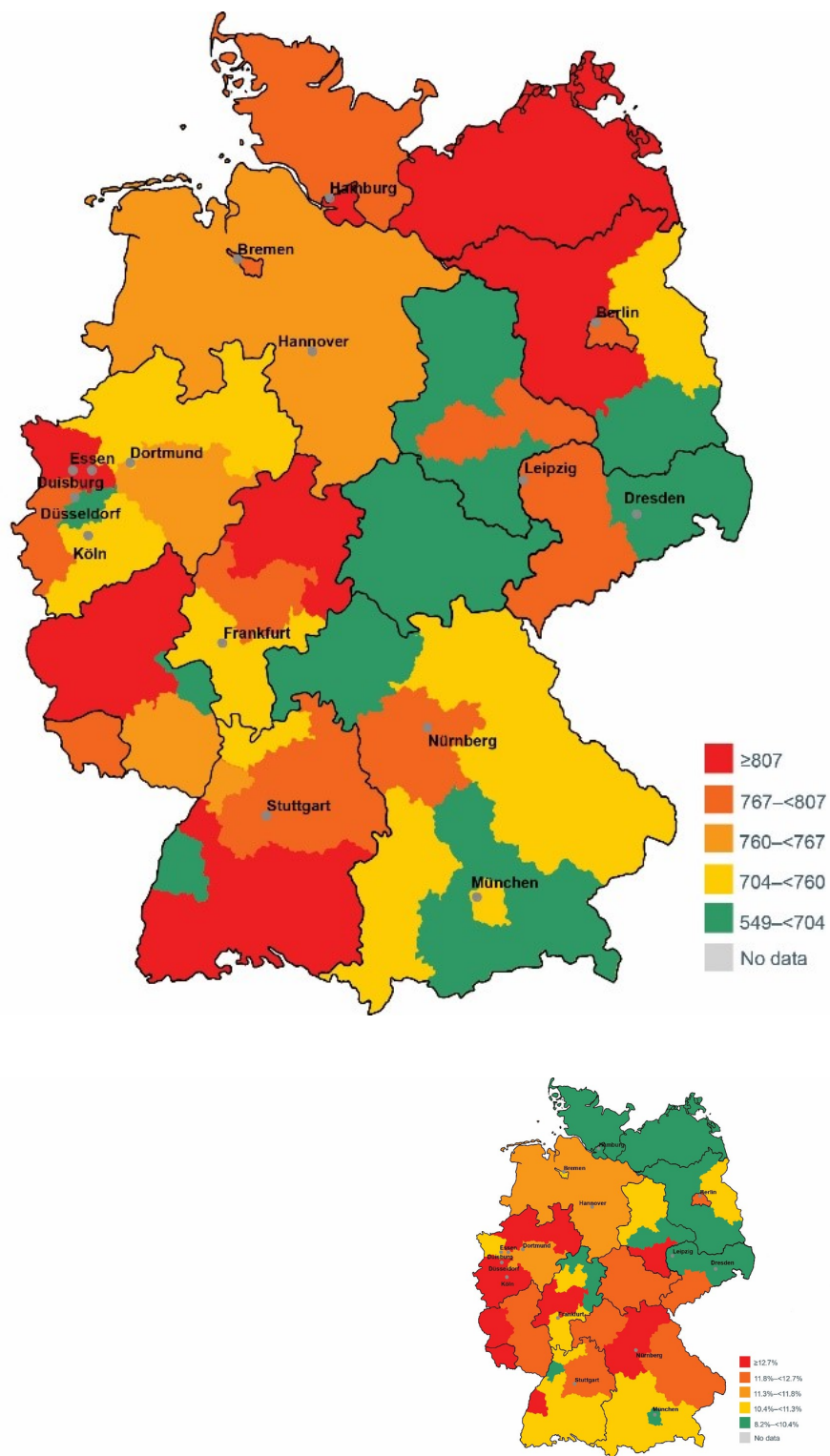


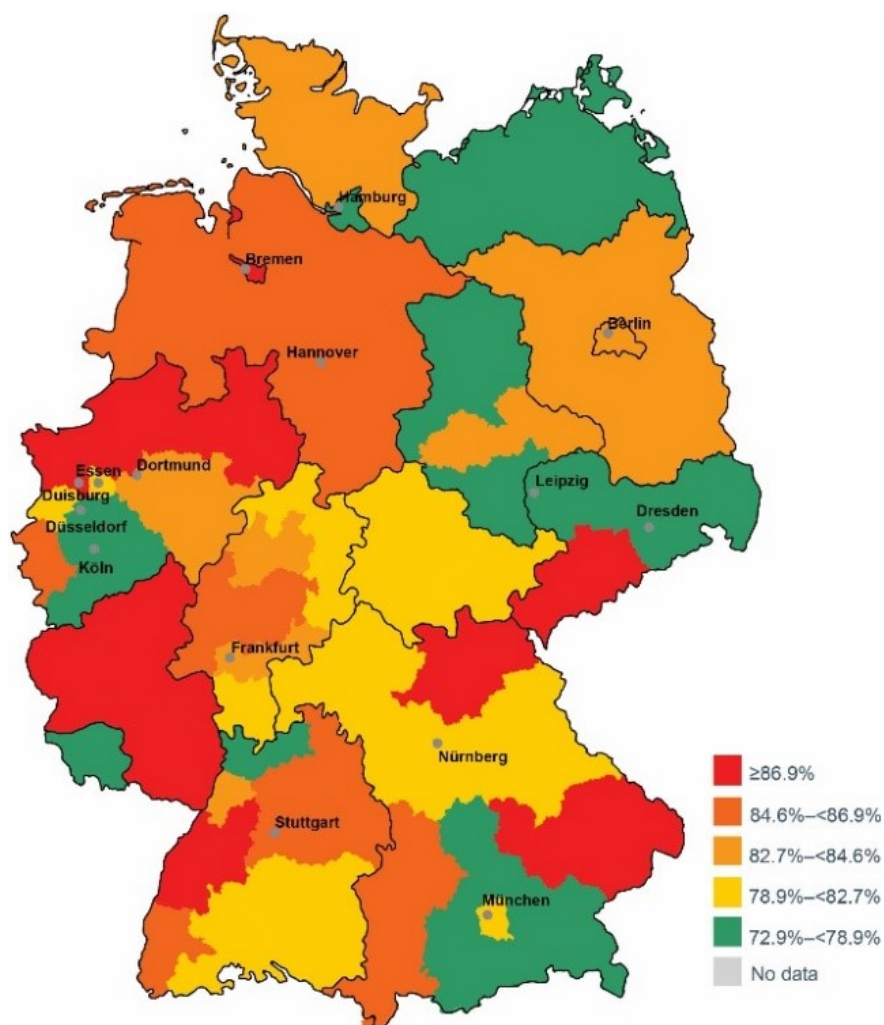


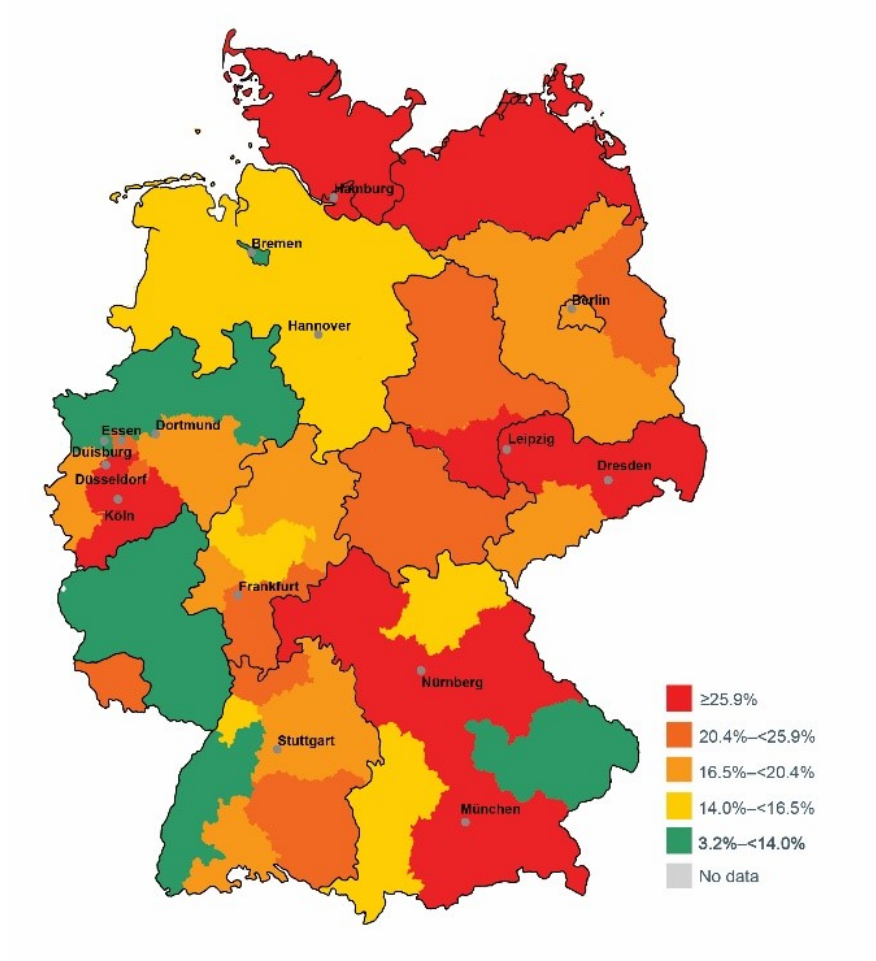


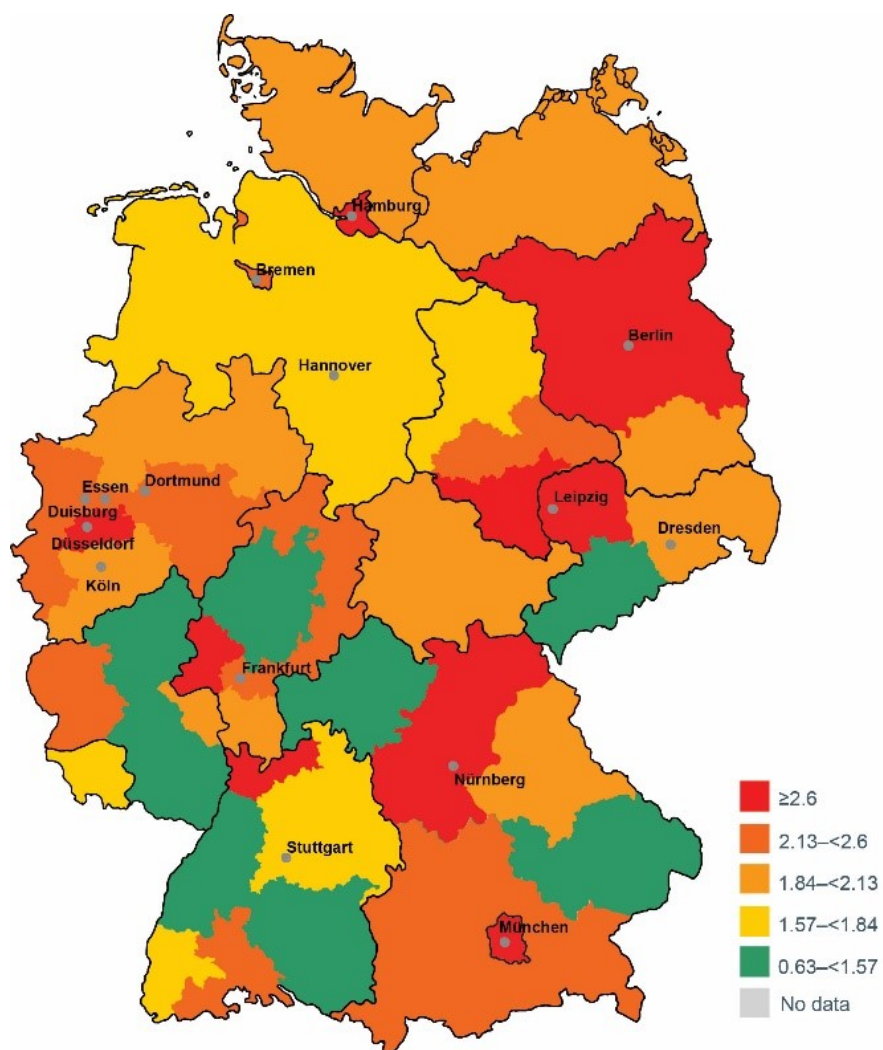












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