London-wide Variation in Ambulance Activity for Paediatric Asthma

Dr D Razon, Dr K Pike GOSH, Institute of Child Health, UCL, Dr I Wolfe, King's College London, Dr R Iles, Evelina Children's Hospital, GSTT, Ms J Nevett, London Ambulance Service

Introduction
Understanding temporal and geographical variation in asthma attacks is important in service planning. Moreover exploring this variation might increase understanding of risk factors associated with increased attack rates. This study aims to explore sociodemographic and environmental factors that are associated with emergency ambulance calls for children with asthma in an urban environment.

Method
Data was obtained from London Ambulance Service regarding emergency activity for asthma during 2012 – 2017, in children aged 2-17. Stata and mapping software (QGIS) were used for statistical and geospatial analysis. Population metrics including Index of Multiple Deprivation (IMD), population density and mapping shape files were obtained from the UK’s National Statistics and London Datastore.

Results
During 2012 – 2017, 15,736 ambulance runs were made and 92% of these were conveyed to hospital. September to November was the busiest season for asthma (Figure 1), Monday and Tuesday were the busiest days and most ambulance calls were made between 2000-2200. Most children were between 2-5 years and males comprised 60%. Whereas population density clusters centrally and deprivation clusters regionally, "hot-spots" for LAS paediatric asthma activity is dispersed across the whole of London, demonstrating intra-borough variability (Figure 2).

Conclusion
Understanding the determinants of ambulance use in children with asthma will help improve local and London-wide service planning in anticipation of seasonal peaks and identification of at risk environments/communities.