

# Researchers call for better quality and consistency of electronic health record studies

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We need improved quality of recording asthma diagnosis and events if the UK is to effectively use the very considerable potential locked within electronic health records to promote improvements in asthma care and catalyse research.

Researchers from Swansea University Medical School and the Asthma UK Centre for Applied Research have today cautioned that improved and consistent reporting of studies is needed to ensure that we answer important questions about [asthma](#), one of the commonest chronic conditions.

Nearly 10% of the UK population has a recorded diagnosis of asthma, accounting for almost 100,000 hospital admissions and over £1 billion annual healthcare expenditure.

In a study published today in the *European Respiratory Journal*, one of the world's leading respiratory journals, Al Sallakh et al. examine international approaches used to define asthma, asthma severity, control and exacerbation from [electronic health records](#) (EHR) in the recent academic literature.

The researchers found wide variations and inconsistencies in these methods across studies and little evidence to support the validity of algorithms used.

These variations reflect not only the differences in the data used, but also, a fundamental lack of consensus on the clinical definitions of asthma and its outcomes. There is a growing number of studies internationally that use EHR data to study conditions including asthma, but no standard methods for identifying and assessing [asthma patients](#) from EHR exist. The researchers caution that validity, transparency and reproducibility of research is compromised unless action is taken.

Given the substantial growth in research that uses EHR data, the authors emphasise the need for reaching scientific consensus on asthma clinical definitions and algorithms, and adoption of reporting standards to improve the validity and reproducibility of research using these data.

Dr Gwyneth Davies, Respiratory Consultant and senior researcher at Swansea University Medical School, said, "If we are to learn about asthma, it's absolutely crucial that we have better and more consistent reporting of the data."

The newly established Health Data Research UK will be well placed to harmonise the underlying definitions and algorithms used in research using EHR data as it is very likely that similar issues will also be found in other disease areas.

Professor Andrew Morris, Director of Usher Institute, University of Edinburgh, said, "The UK has an opportunity to provide an international leadership role to develop and agree standards for health and biomedical data science. This research highlights the need for agreeing standards for both methodologies and reporting as we accelerate the pace and scale of data science in the UK."

Dr Samantha Walker, (Director of Research & Policy and Deputy Chief Executive, Asthma UK): "This study highlights a long known problem and one that desperately needs to be resolved. The data held on

electronic health records has the potential to be of great value to asthma research, our overall understanding of asthma development, and development of new treatments. However, wide variations in how asthma is defined and recorded mean that these data sets are difficult to use for these purposes.

"As electronic health records become more widely used, it is vital to ensure all the information is defined and collected in a consistent manner so that we can have confidence in it. Until this happens we are missing opportunities to understand asthma fully and make improvements in [asthma care](#)."

The study and its recommendations, which will be essential reading for researchers, NHS leaders and policy makers, has been published in *European Respiratory Journal* today.

**More information:** *European Respiratory Journal* (2017). [DOI: 10.1183/13993003.00204-2017](#)

Provided by Swansea University

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