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Data linkage for public health research – the Fforestfach tyre fire

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Background

The Fforestfach tyre fire started on the 16th of June 2011 and continued to burn for 22 days.

Smoke from tyre fires contain a number of chemicals that might cause health problems, especially for people who already have long-term health conditions.

This research investigated whether people living close to the Fforestfach fire contacted their General Practice (GP) more often during the fire than they might have done otherwise. This is important both for the people living in the Fforestfach area and also for those living near similar fires in the future.

Aim

To use advances in mapping and data linkage techniques to assess associations between the Fforestfach fire incident and respiratory and cardiovascular health outcomes. The report focusses on the occurrence of respiratory and cardiovascular Read codes in patient's GP records.

Methods

Using data linkage, information provided by the Met office was used to identify households likely to have been exposed to above threshold levels of pollution. Residents from these households were linked to their GP records via the Secure Anonymised Information Linkage (SAIL) databank. Logistic regression models tested associations between above-threshold exposure to a specific type of pollution (PM10) and an increase in GP contact.

Results

Regression modelling demonstrated a small but significant increase in GP contact for respiratory conditions in patients with pre-existing asthma. The models did not demonstrate any affect in the general population.

Conclusion

The study demonstrated the value of linking health and environmental data using advanced data linkage techniques.

Findings support current health advice used in environmental incidents such as this, that individuals with certain chronic conditions may be more likely to experience symptoms when exposed to 24-hour mean concentrations of PM10 exceeding 50µg/m³; but the risk of significant symptoms as a result of such exposure in the general population is likely to be minimal.

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