KNOWING WHEN COLD WINTERS AND WARM SUMMERS CAN REDUCE AMBULATORY CARE PERFORMANCE IN LONDON

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CONTEXT
As part of a climate change risk assessment, Public Health England took the initiative to analyse the impact of cold winters and warm summers on the number of ambulance call-outs and ambulance response times in London. This study is the first of its kind in the United Kingdom. Initial findings show that there is a clear relationship between air temperature and emergency ambulance calls. Further research shows that as well as developing operational adaptation methods for ambulance trusts using real time incident modeling, it will be possible to use real-time ambulance response data to feedback timely emergency warnings. For example, the percentage of respiratory or cardiac ambulance calls that are considered life threatening can provide valuable early morbidity information for cold-related or heat-related illnesses.

Within England there are currently 11 National Health Service (NHS) organizations that provide ambulance services and more than 9 million emergency calls were received in the year ending March 2013, of which 77% required an emergency response. In 2012/13 there were 2.95 million Category A (CatA - life threatening) incidents with a response rate (such as arriving at the scene of the incident) of 75.5% within 8 minutes (NHS target 75% within 8 minutes). That is close to 25,000 emergency calls per day of which more than 8,000 are triaged as CatA. The total number of emergency patient journeys was 5.02 million and 1.99 million patients were treated at the scene. The total cost of the NHS ambulance service is close to £2 billion per year, of which about £1.5 billion is spent on emergency services and the rest on ambulatory (pre-arranged) services.

The London Ambulance Service employs more than 5,000 staff serving the Greater London population of more than 8 million people. In 2013, over 1.7 million emergency ambulance calls were received of which 1.1 million were responded to (on average 3,000 incidents/day), of which nearly half a million were considered life threatening. This level of activity is increasing year by year (increasing elderly population, additional tourists, more people with mobile phones, etc.), which puts additional pressure on shrinking resources. It was known that hot and cold weather put additional stress on the system but it was not known to what extent.

NEW APPROACHES
Daily data was obtained from the London Ambulance Service for 2003–2012, including the number of responded calls, the number of CatA calls, the % of responses within 8 minutes (target 75%) and illness codes. This data was then compared to mean daily temperature data from St James Park (SJP) in London, accessed via the UK Meteorological Office. The heatwaves of 2003 and 2006 plus the very cold December of 2010 are included in the dataset, which gives a good cross-section of weather events.
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BENEFITS AND LESSONS

The weather impacts directly on day-to-day operations, while the climate contributes to the level of service required (e.g. the number of staff and ambulances). As the climate changes and/or the frequency of hot and cold weather changes, so too must the ambulance service become more resilient and better prepared with bespoke weather forecasts and climate predictions.
REFERENCES

LONDON


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