PRESS RELEASE
For immediate release

LARGE DIFFERENCE IN ANTIBIOTIC PRESCRIBING BETWEEN SUMMER AND WINTER MONTHS AND BETWEEN DIFFERENT AREAS FOUND IN YORKSHIRE

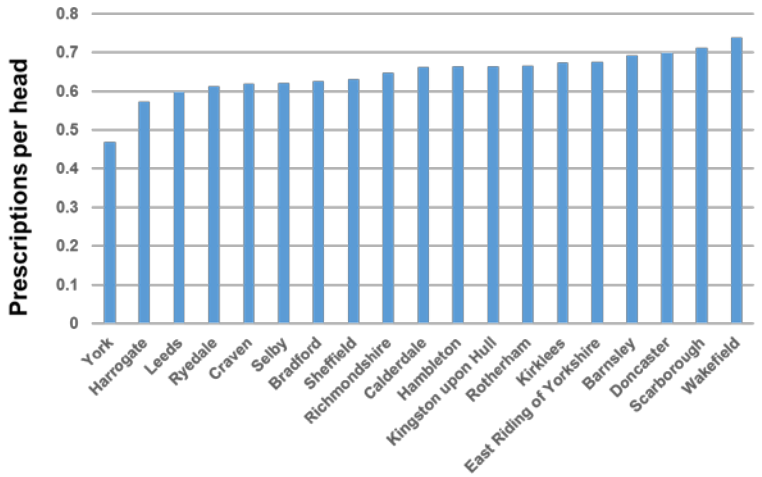
13 December 2015

Antibiotic Research UK, the York based national charity fighting superbugs, in collaboration with Exasol AG has analysed GP antibiotic prescribing data in Yorkshire. Key findings were;

- Average Yorkshire prescriptions per head are slightly above the average for all of England (Yorkshire = 0.6442 and England = 0.6052 – Yorkshire is 6% higher)
- There was wide variability in antibiotic prescribing across the County with York doctors prescribing almost 65% fewer antibiotic prescriptions compared with Scarborough and Wakefield
- Doctors prescribe 63% more antibiotics in December than they do in August in Yorkshire, despite the fact that illnesses treated by antibiotics are not seasonal.
- There were a few Yorkshire hot spots for antibiotic prescribing such as North Wakefield and central Kingston upon Hull.

New research by Antibiotic Research UK, the world's first charity created to develop new antibiotics in the fight against superbugs, and high-performance analytic database company EXASOL has discovered that while antibiotic prescriptions are coming down across Yorkshire, GP Practices in Scarborough and Wakefield are prescribing nearly twice as many antibiotic prescriptions as the lowest in the County, York.

ANTIBIOTIC PRESCRIBING PATTERNS IN YORKSHIRE TOWNS

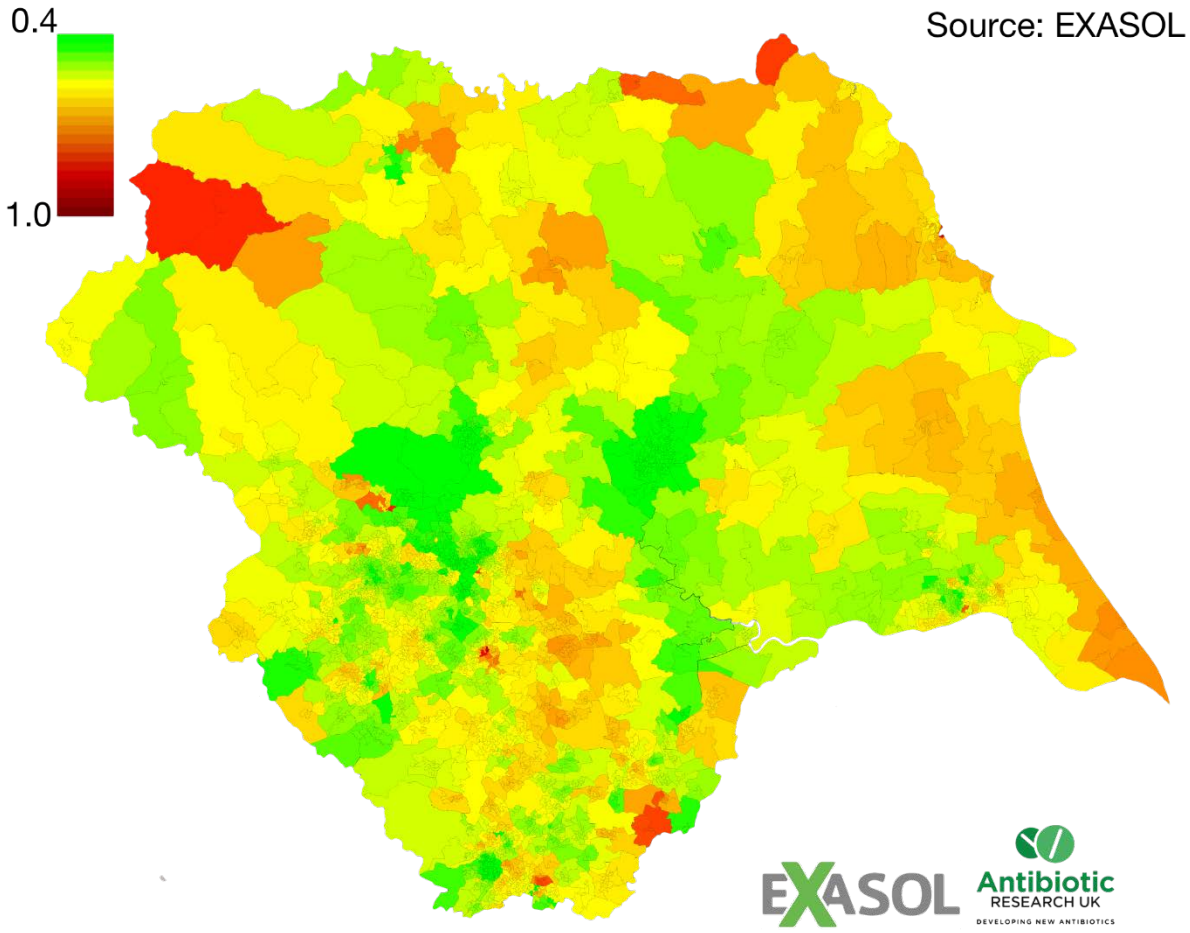


Antibiotic Research UK and EXASOL analysed data released by the Government's Health and Social Care Information Centre and sourced from the NHS Business Services Authority. The data runs over 5 years from August 2010 to July 2015 and contains 602 million rows of data. The data was analysed by a data scientist working for EXASOL, using its high performance in-memory analytic database. The data reveals antibiotic prescribing hotspots and interesting correlations against areas of deprivation and age. The data is grouped by Lower Layer Super Output Areas (LSOA)*.

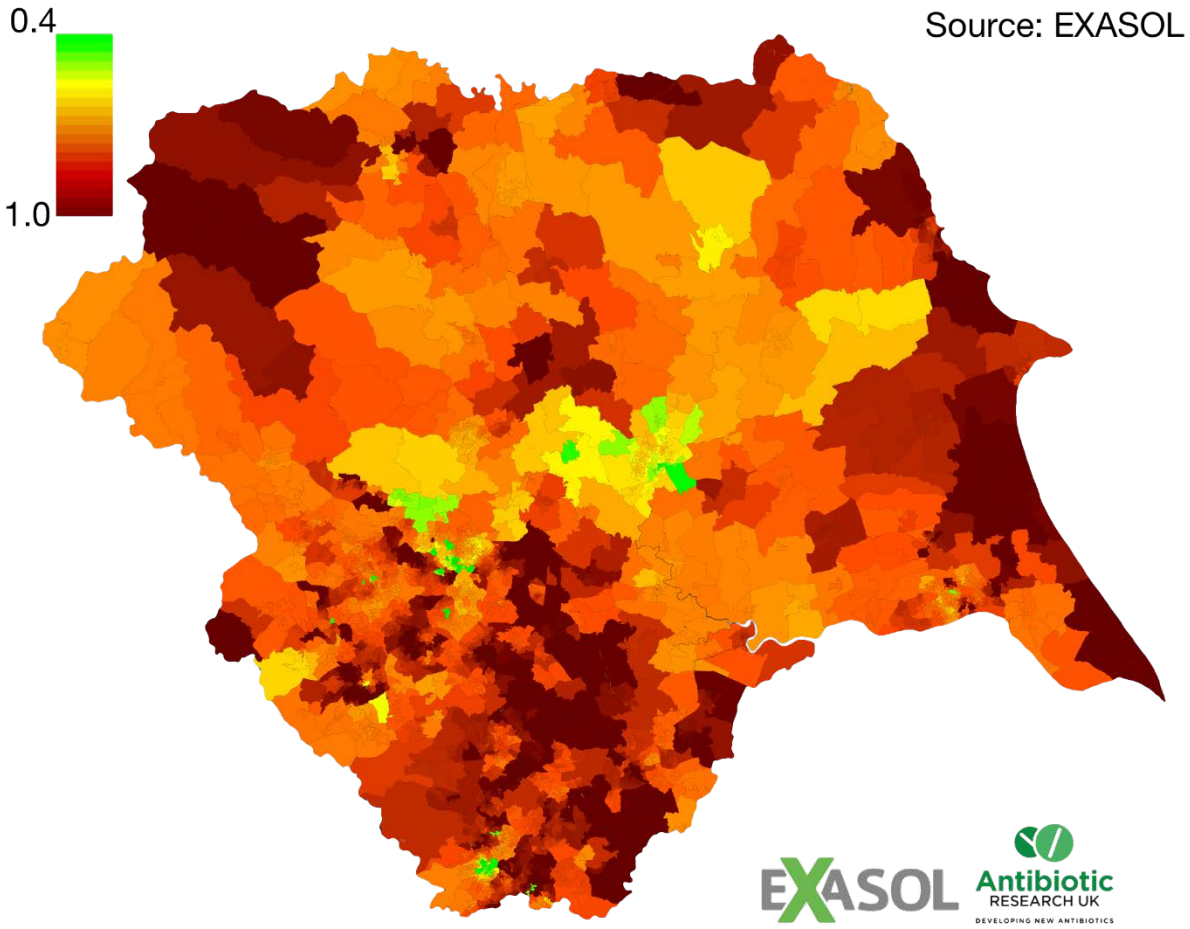
Sean Jackson, Chief Marketing Officer, EXASOL says: "When analysing the data we are seeing a wide gap in antibiotic prescriptions across Yorkshire with York prescribing 65% fewer antibiotic prescriptions compared with Scarborough and Wakefield."

Professor Colin Garner, chief executive of Antibiotic Research UK Says: “These results are very surprising but some of the data seems to reflect that seen in other parts of England. For example Scarborough seems to mirror the high prescribing pattern seen in many seaside towns across England. Clacton-on-Sea in Essex has the highest level of prescribing in England”.

The data also highlighted seasonal variation in prescription levels with 63% more prescriptions in December than in August with no logical reason. Professor Colin Garner of Antibiotic Research UK says: “It is true that colds and flus sometimes lead to bacterial infections due to suppressed immune systems and so we would expect a minor increase in antibiotic prescription in the winter months, however the data shows us a 63% jump in four months and this is far too high. The only explanation is that antibiotics are being overprescribed in the winter when patients demand them. Focus group surveys have shown that 97% of patients who demand antibiotics from their GP get them. Professor Colin Garner says *“This is unacceptable. The public should not be demanding antibiotics from their doctors and doctors should not be prescribing them. Public Health England is engaged in a large educational campaign to persuade the public not to demand antibiotics since many winter infections are virus related where antibiotics have no action”.*



Antibiotic prescribing heat map for Yorkshire – August 2014



Antibiotic prescribing heat map for Yorkshire – December 2014

Professor Garner says: *"An increased resistance by bacteria to antibiotics could change surgery as we know it today. As a consequence, new hips, knees, organ transplantation and many cancer treatments will become high risk. It is estimated that there are 400,000 cases of reported antibiotic resistant infections with 25,000 deaths each year in the European Union; in the UK the figure is close to 5,000 deaths per year. 35,000 people die each year from sepsis of which a proportion can be directly linked to infection with antibiotic resistant bacteria. Even a simple scratch can kill without effective antibiotics."*

Sean Jackson, CMO, EXASOL says: "*Awareness of antibiotics overuse is critical. As an analytic database provider, we firmly believe in the power of data analytics in helping unlock valuable insights that can address any problem or issue. With the right data and the right technology, you can turn any problem into a data problem and uncover information to help address it. We worked with Antibiotic Research UK to find information that is useful in their quest to reduce antibiotic use and find new antibiotics in the fight against the superbug. To analyse such enormous data-sets fast requires the right tool and we hope the findings help to further reduce this serious issue."*

Ends

Contact Information

Email: colin.garner@antibioticresearch.org.uk

Tel: 01904 468719

Notes to editors:
*LSOA: Lower Layer Super Output Areas are built from groups of contiguous Output Areas and have been automatically generated to be as consistent in population size as possible, and typically contain from four to six Output Areas. The Minimum population is 1000 and the mean is 1500. There is a Lower Layer Super Output Area for each POSTCODE in England.

Lists of datasets used:
1.Prescribing data from http://www.hscic.gov.uk/gpprescribingdata - a list of all prescriptions given by GPs and subsequently dispensed in England (5 years – from August 2010 to July 2015). This is the largest dataset, amounts to about 602 million rows or 83 GB of uncompressed data. The data is grouped by month, roughly 1 million prescriptions per month.

2.Practice codes, names and addresses (June 2015) – http://www.hscic.gov.uk/article/2021/Website-Search?productid=18541 - a lookup for the addresses of the practices listed above. In total 9,897 practices are listed (England only).

3.Numbers of Patients Registered at a GP Practice (July 2015) http://www.hscic.gov.uk/catalogue/PUB17927 – gives a breakdown of the patients registered with each practice by age, sex, LSOA (lower level super output area – small geographic areas with a maximum population of 1000).

About EXASOL

EXASOL is passionate about helping companies to run their businesses smarter and drive profit by analyzing data and information at unprecedented speeds.

The company develops the world‘s fastest database for analytics and data warehousing, and offers first-class know-how and expertise in data insight and analytics. The in-memory analytic database is the first database to combine in-memory, columnar compression and massively parallel processing, and is proven to be the world‘s FASTEST, topping the list in the TPC-H Benchmark tests for performance.

Companies that depend on EXASolution to analyze their data in real-time include Adidas Group, GfK, IMS Health, King, Olympus, myThings, Sony Music and Xing.

For more information visit us at www.exasol.com and follow us on twitter, facebook, xing, linkedin or on our Blog.

About Antibiotic Research UK

Antibiotic Research UK is the world’s first charity to tackle the problem of antibiotic resistant infections. We aim to develop one new antibiotic therapy by the early 2020’s with further antibiotics being introduced over the next decade. **To reach our goals we need to raise £30 million over the next 5-7 years.** Antibiotic Research UK has the support of some of the United Kingdom’s leading scientific and clinical experts in antibiotic resistance, drawn from 14 of the country’s top universities and 12 specialty pharmaceutical or support companies.
The problem of antibiotic resistance (superbugs) has been highlighted by the World Health Organisation, the UK Prime Minister, the President of the USA, the UK Chief Medical Officer Dame Sally Davies and Lord Jim O’Neill, chair of the Government’s Review of Antimicrobial Resistance. David Cameron talked about medicine going back to the ‘dark ages’ if we didn’t tackle this impending health disaster. Antibiotic Research UK is a registered charity (no 1157884) and is uniquely placed to develop new therapies which would be made available to all affected by antibiotic resistant infections throughout the world. It’s first scientific programme has been developed by the charity’s Scientific and Technical Advisory Committee and further details can be found here - http://www.antibioticresearch.org.uk/for-the-public/
In 2015 the chief highlights for the charity were;

- Raised nearly £300,000 towards funding our innovative research programme to develop one new antibiotic therapy by the early 2020's
- Developed a research strategy including our first project on Antibiotic Resistance Breakers
- Greg Beckett ran the New York City marathon and raised over £600 for us
- Ben Blackwell ran the Rock Solid Run in Milton Keynes and got extremely muddy!
- The charity was chosen by the BIA to be their charity of the year and over £23,000 was raised at their Gala Dinner at the Natural History Museum in London
- The newly elected MP for Morley and Outwood, Andrea Jenkyns, whose father died from an antibiotic resistant infection, endorsed us
- We organised the Great British Tea Party on European Antibiotic Awareness Day on the 18 November; please put 18 November 2016 in your diary for next year's Great British Tea Party
- We had a lot of media coverage during the year including being on the BBC News, Sky, ITV, Channel and multiple national and local radio slots – our Press Releases can be seen at http://www.antibioticresearch.org.uk/press-releases/
- We published, in collaboration with Exasol AG, heat maps of antibiotic prescribing patterns throughout England (http://www.bbc.co.uk/news/health-34790038) (no other regions of the UK have the same prescribing information) and finally
- The Archbishop of York agreed to become Patron

A charity registered in England and Wales; Number 1157884
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