The Challenge
The main purpose of the electronic record in healthcare is to document a patient’s medical history; however, the rich data stored in the patient record are also a valuable source of information for research. Using natural language processing techniques it is now possible to discover patterns in large electronic datasets that may not otherwise be obvious or possible using traditional research methods.

The Research
One valuable use of this method is to be able to predict when people might suffer a bad reaction to prescribed drugs, known as an adverse drug reaction. A team of researchers from King’s College London and the South London and Maudsley Hospital developed a tool that they hoped would identify four unpleasant side effects associated with taking antipsychotic medication. Side effects, including severe and frequent muscle twitching, repetitive movements and restlessness, can be agonizing for patients, leading to social anxiety and embarrassment for patients. This may result in patients stopping their medication, leaving them at risk of relapse, and is costly for health care providers.

The Impact
The psychiatric database consisted of such large freetext information that meant it could not be analysed using traditional techniques. The new tool that was developed allowed researchers to accurately identify instances when an adverse drug reaction might occur, and can be used to help target treatments more effectively, leading to significantly better quality of life for patients and reduced cost to the NHS.

For more information about adverse drug reactions visit: cks.nice.org.uk/adverse-drug-reactions#topicsummary

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