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Analyses patient records without accessing sensitive information

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Researchers have developed an IT tool which can extract information from patient records without disclosing sensitive patient information.

This new IT tool will make it easier to carry out ongoing quality assurance throughout the health service. It also solves one of the three key challenges identified in the white paper entitled "One Citizen – One Record" (Én innbygger – én journal). The technology can help to realise the intention behind the national solution for patient records, even if data is spread across numerous systems.

Unique method

In the past, researchers have had to retrieve patient records from GPs and other sources, and then review them and extract the information they need almost entirely manually. This leads to a risk of adding error sources and of sensitive information concerning individuals going astray. In addition, the process has been circuitous and very time- and resource-intensive. All these issues have now been eliminated. The IT tool extracts information and produces a report in just 22 seconds.

The tool can be applied to all electronic patient records, regardless of where in the health and care services the record is stored securely, whether it be by a GP or dentist, at a nursing home or at a hospital. Not even the researchers involved will be able to identify which patient record the information comes from. The tool is based on a data protection

It is difficult for researchers to get access to electronic patient records today. But now senior researcher Kassaye Yitbarek Yigzaw has developed an algorithm that give researchers access while obfuscating any patient data.. (Illustration: Colourbox).

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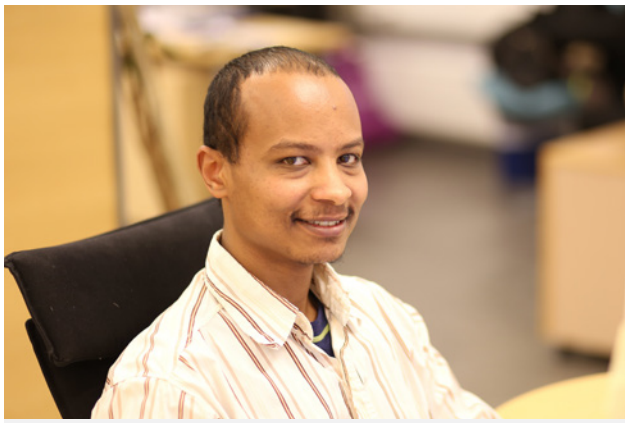
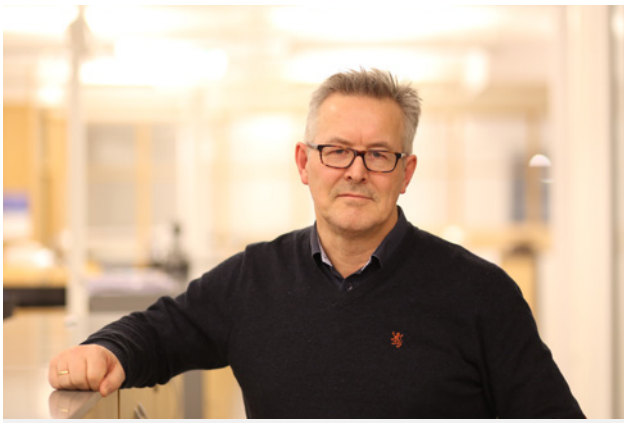


The data tool is based on a privacy policy algorithm that Kassaye Yitbarek Yigzaw developed in 2017.
(Photo: Norwegian Centre for E-health Research)



– We hope that researchers, planners and decision makers see the potenitial and starts using this method, says Professor Johan Gustav Bellika.
(Photo: Norwegian Centre for E-health Research)

algorithm which Kassaye Yitbarek Yigzaw developed and studied for his PhD in 2017.

Tested in GP centres

In order to test the tool in practical everyday use, researchers have examined the prescribing of antibiotics by GPs. The tool and its special algorithm were installed on the servers of three Norwegian GP centres. During the test, researchers searched for specific diagnoses and prescriptions in the records of 20,245 patients, split between 21 GPs.

The tool enables research to be conducted on data from the primary health service to a completely different extent than has been possible so far. Research based on such data has previously been a scarce commodity.

Norway has already provided for the introduction of the new method, through Section 6 of the Patient Records Act. Internationally, there is strong interest in the tool developed by the team at the Norwegian Centre for E-health Research.

Reference:

Kassaye Yitbarek Yigzaw mfl: Privacy-preserving architecture for providing feedback to clinicians on their clinical performance, BMC Med Inform Decis Mak. 2020. https://doi.org/10.1186/s12911-020-01147-5

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