



detect other viruses early to prevent epidemics.

"This allows viruses to be detected early before large numbers of people get sick," said Prof. Suresh Neethirajan, head of the BioNano Laboratory in Guelph's engineering school.

"It's moving from reacting to predicting."

Neethirajan and researchers in Korea and Japan worked with various flu strains to develop a system with gold nanoparticle films that can detect viruses at a much lower level than conventional methods.

"It could be 500 times more sensitive," Neethirajan said. "We can detect samples that are much, much smaller."

That means test results are faster, aiding in speedy manufacture of targeted flu vaccines to reduce the annual global impact of the bug. In Canada, there are more than 12,000 flu-related hospitalizations each year, according to Health Canada statistics.

And it's useful for detecting other viruses, enabling earlier treatment for those who get sick and "possibly predict the outbreak even before it can happen," Neethirajan said

Plus, the researchers designed an inexpensive and portable tool that uses paper strips coated with sensing material that can quickly show with a colour change if a virus is present in a sample.

That could prove especially helpful with food-borne illnesses, such as Norwalk and hepatitis, to quickly identify the virus in order to contain outbreaks. Or even before that, it could detect contamination on produce from handling.

Also, it could be used to detect the influenza strains in birds and pigs.

"This can be found in the live animal before it reaches the food chain," Neethirajan said

The discovery is described in a paper this month in Scientific Reports, published by Nature.

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