March 24th, 2015

Nunavut Xpert Study Results

A lay summary of the journal article "**The feasibility, accuracy and impact of Xpert® MTB/RIF testing in a remote Aboriginal community in Canada"** published in the journal Chest in March 2015

Why did we do this study?

Remote Inuit communities face a higher burden of TB disease than the rest of Canada. Because of the remote location and shortage of health human resources, there is no laboratory testing for active tuberculosis (TB) disease in Nunavut. All samples need to be flown to the south of Canada for testing. It takes longer to get results back to patients than in the south of Canada. This means it can take longer for Nunavut patients to get treatment for TB. A new laboratory test, called Xpert® MTB/RIF, has been used successfully in other countries with high burdens of TB disease and lack of access to resources. We were interested in finding out if it would be possible to use this new technology at the hospital in Iqaluit, Nunavut and whether it would shorten the time it takes to diagnose TB patients so they can get treatment faster.

What did we find?

In Iqaluit, Nunavut, it was possible to implement Xpert testing and get accurate results. It had an impact on clinical care in a remote arctic region of Canada that does not have laboratory capacity for TB testing and has limited human resources. The accuracy of the Xpert test in Iqaluit was similar to other studies done other countries with high levels of TB and low resources. It worked better in Nunavut than in other high-resource areas without high levels of TB disease. The usual tests done in southern laboratories for active TB disease are smear and culture. In comparison with smear and culture, Xpert sped up diagnosis of TB especially for patients who are may not have a high level of TB bacteria so are not very sick yet. The time it took to treat patients with high levels of TB bacteria was shortened from 7.7 days to 1.8 days. Those with lower levels of bacteria had their time to treatment start time shortened from 37 days to 1.8 days. Delays in treatment could have caused them to become sicker and more contagious. We also found that this test was very useful for ruling out TB disease faster for people with TB-like symptoms but do not have TB and may need to travel on commercial airlines, be released from hospital, go back to work, or go to work at a camp or on a ship.

How will this benefit the health of Nunavummiut?

This technology could have an important role in improving health equity in TB diagnosis in remote, high burden regions of Canada.