

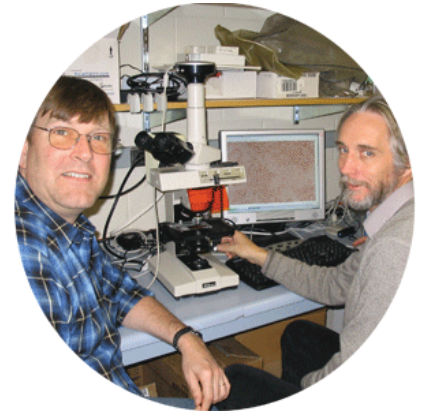
When advanced networks can help save lives

The Challenge

When expertise is concentrated in one particular region, it is difficult to gain accurate diagnoses by non-specialists in more remote areas. This was the case with identifying and diagnosing cases of malaria.

Background

Malaria can kill within 72 hours. It's important to be able to access diagnostic resources and expertise very quickly so that malaria can either be ruled out or treated before disaster strikes. Malaria is relatively rare in Canada, and most physicians or researchers are not trained in what to look for. Using network-enabled collaborative diagnostic tools allows health practitioners with expertise to assist others in a real time consultation.



ORION and CANARIE Make a Difference

Using their ORION connection, Access Grid collaboration software and generic PCs, researchers at the University of Toronto's Laboratory for Collaborative Diagnostics (LCD) have introduced an IP-based application which provides Canada with a new national, collaborative malaria diagnostic capability. While malaria is the initial target, the goal is to provide a national, collaborative parasite diagnostic capability.

Their project, nicknamed "Malaria TV", allows physicians and clinical lab workers anywhere in Canada to link their lab's digital microscope to an on-line microscopy network and facilitate consultation with colleagues in determining if any malaria parasites are present in suspect blood samples. All of this content is made globally accessible via the use of Access Grid client software and the lab's Access Grid Venue Server all running on inexpensive personal computers. This means that a pathologist's conclusions in Ontario can be easily checked by a pathologist in Vancouver, London or New Delhi. Timely diagnostic services are possible because if a micro-biologist is not available in Toronto, a micro-biologist in Vancouver can provide the needed services. Ubiquitous diagnostic services are possible because diagnostic services become available anywhere there is a network connection.

Results

Reducing the cost of delivering diagnostic services is made possible because equipment costing \$20,000.00 can be replaced by equipment costing \$1,000.00. This innovative research has demonstrated that collaborative diagnostics enabled by high-capacity networks like ORION can not only help save lives, and can bring meaningful impact to the health care system by reducing the cost of delivering diagnostic services, helping ensure accurate, timely and ubiquitous diagnostic services.

The Impact

"Having access to ORION helps make this possible. The network's multicast capabilities allow us to take this idea even further, on a global scale. This is a powerful new tool that can make a genuine difference in the way we diagnose and confirm the presence of infectious disease, when speed and time is of the essence."

- Dr. West Suhanic, Laboratory for Collaborative Diagnostics, University of Toronto