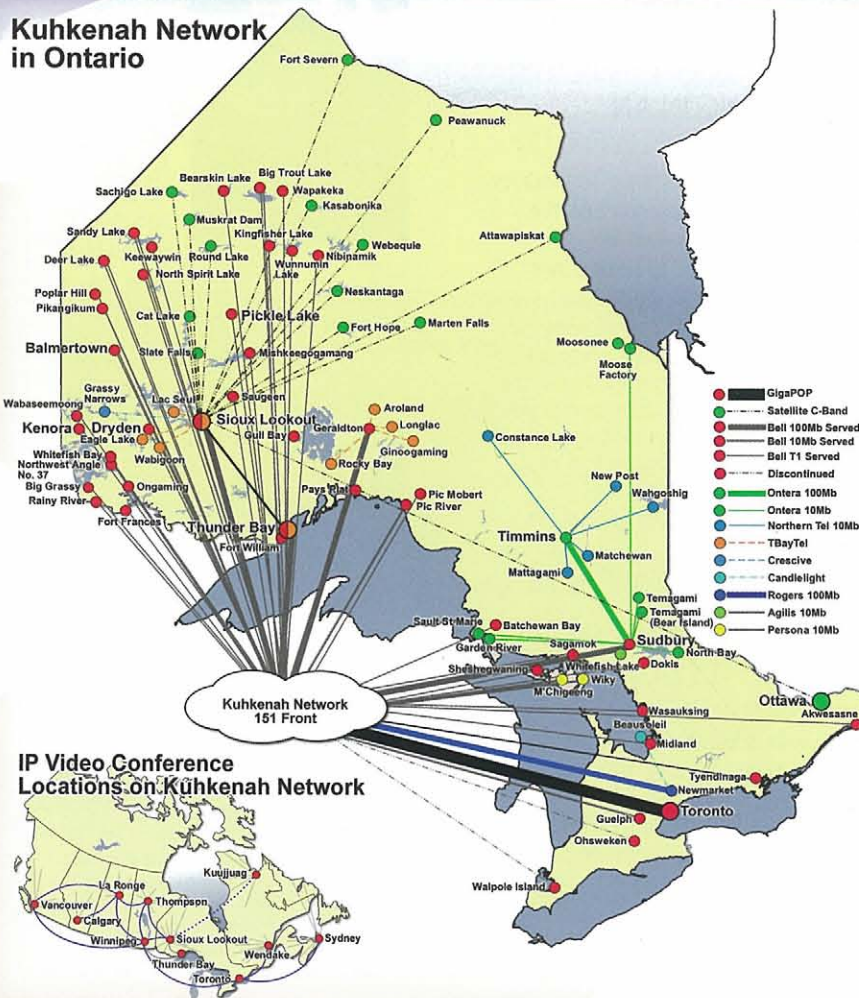


# IEEE Technology and Society MAGAZINE

Special Issue on ISTAS '08:  
CITIZENS, GROUPS,  
COMMUNITIES, AND ICT

A PUBLICATION OF THE IEEE SOCIETY ON SOCIAL IMPLICATIONS OF TECHNOLOGY  
VOLUME 28 | NUMBER 2 | SUMMER 2009



## K-Net and Canadian Aboriginal Communities

**IEEE**  
Celebrating 125 Years  
of Engineering the Future

# Enhancing Rural Healthcare in Rwanda through Clinical Decision Support

Africa bears one quarter of the world's disease burden, yet has barely three percent of all healthcare workers. Little attention is paid to the top three killers in most poor countries:

- maternal death around childbirth,
- pediatric respiratory infections leading to death from pulmonary failure, and
- intestinal infections leading to death.

At the same time, billions of dollars of assistance are sent to Sub-Saharan Africa to fight HIV/AIDS, malaria, and tuberculosis.

"... [F]ew women's rights groups put safe pregnancy near the top of their lists of priorities, and there is no dysentery lobby or celebrity attention given to coughing babies," according to Laurie Garrett in a recent edition of *Foreign Affairs*.

Rural healthcare in Sub-Saharan Africa is incredibly short-staffed. There are typically 25 000 people for one doctor in an entire country. Too little attention is devoted to development of primary health-care systems. Better approaches are needed to treat all patients without having to add doctors or expensive equipment.

## EDPS — A Solution

Edward A. Friedman of Stevens Institute of Technology has found a way to bring a tested and proven computer-assisted diagnostic system, developed in India, to Sub-Saharan Africa and/or any rural area. It was developed by Dr. Abraham George of the George Foundation. The system has been in use in rural India for eight years. Its use en-

ables people without extensive medical training to help diagnose illness, resulting in more people being cared for, prioritizing the most serious cases, getting patients most in need to the doctor more quickly, and establishing an electronic, portable medical record.

Early Detection and Prevention System (EDPS) Highlights include:

- EDPS functions effectively in rural clinics with only a nurse and technician,
- EDPS uses a standard PC computer without a network connection,
- Technicians can be 10<sup>th</sup> grade graduates without computer or medical training,
- The system has been found to successfully resolve 75% of cases at rural clinics in India,
- EDPS has a 94% accuracy record, equivalent to diagnoses of experienced doctors,
- The system provides a database that greatly facilitates pro-active preventative treatment,
- The database enables epidemiological studies.

## Most Critical Need

Dr. Friedman and his colleagues have established excellent working relationships with senior government officials in Rwanda and the United Nations. They have made significant progress in moving forward to bring this information technology system to rural Rwanda.

At this crucial phase, additional funding is needed to fully prepare the design for a two-year field test on the

use of Clinical Decision Support Systems in rural healthcare, through travel, further analysis and development planning in Rwanda.

For more information, please contact Dr. Edward Friedman at [friedman@stevens.edu](mailto:friedman@stevens.edu).

Too little attention is devoted to development of primary health-care systems in Africa.