

From Access to Collaboration

Four African Pathologists Profile Their Use of the Internet and Social Media

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KEYWORDS

• Internet • Social media • Telepathology • Pathology • Africa

KEY POINTS

- African pathologists use the Internet and social media in sub-Saharan Africa to communicate and collaborate with colleagues in the region and globally; to update knowledge and for continuing professional development; and to have positive effect on health, quality assurance, and safety because they can easily seek second opinions and share cases.
- The challenges include the cost of Internet service to individuals and institutions, fluctuations and unreliability of power, and lack of access to reliable sources of vetted information.
- Understanding and aiding colleagues in their technical constraints is to the benefit of pathologists globally.

Something new is happening on our planet. It is true that technological progress in modern times has linked people together like a complex nervous system. The means of travel are numerous and the communication is instantaneous. We are joined together like cells of a single body. But this body, as yet, has no soul.

Antoine de Saint-Exupery, 1939-1944 in Wartime Writings

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INTRODUCTION

In the early 1990s, the nascent Internet was enhanced by the World Wide Web to become a critical tool for scientific research and collaboration around the world. This tool was just as important in sub-Saharan Africa (SSA) as anywhere else, and perhaps even more so. In SSA, outside organizations initiated efforts to leapfrog aging telephone systems of copper wire directly into the invisible digital world, all in the service of health and medicine.

A small non-governmental organization called SatelLife pioneered HealthNet in SSA in 1990.¹ HealthNet comprised a single satellite, no larger than a stack of medical journals, ground stations that featured a ham radio connected to a computer via a terminal node controller, and send-and-receive antennae. In this rudimentary system, messages in ASCII (American Standard Code for Information Interchange) text were picked up and delivered via a low earth orbit satellite. One pathology image could easily have consumed nearly all available space, because the satellite carried only 16 MB.

From this modest beginning, telecommunications rapidly developed on the African continent from 1990 to the present with users across SSA quickly adopting digital communications solutions. They have used cellular and smartphone technologies to overcome the connection challenges of landlines and replaced them with a digital web of communication access.² In doing so, they have greatly expanded the communication network on the continent. In addition, African research sites have been able to experiment with bandwidth strong enough to support African researchers as they joined their colleagues in the international scientific community.²

In SSA there is approximately 1 pathologist for every 10 million people. Pathologists are not evenly distributed on the continent, as shown in [Fig. 1](#), which provides an overview of where pathology resources are needed most and where there is an oversupply.³ As elsewhere in the world, pathologists tend to be concentrated in major urban centers close to large teaching institutions where professional and career growth opportunities exist.⁴

In SSA, under ordinary circumstances, the turnaround time for receiving anatomic pathology results can be from 3 days to 12 months using ordinary mail. Access to the Internet, and importantly to social media, has changed this in some locations. The pooling of diagnostic resources and personnel has begun to improve the scope and quality of pathology services. It is now possible for pathologists to share clinical, cytologic, and histologic images for diagnoses and second opinions quickly and easily. Access to the Internet enables lone pathologists to practice with confidence because they can easily consult with colleagues. High-end techniques in pathology do exist in SSA but they are out of reach in many locations. However, using simple staining techniques and cheap digital images transmitted over the Internet, waiting times for biopsy diagnosis can be greatly reduced in low-resource settings.

New electronic tools have now been introduced at every level of health care and research in Africa. Some have proved useful and cost-effective, especially those supported by African ingenuity and buy-in. Some others, as everywhere else, have tended toward unsustainable gadgetry.

Pathologists have joined their colleagues in the conversation about the use of the Internet, but the particular image-based needs (for transmission and sharing) of anatomic pathologists, combined with their scarcity as a profession in SSA, have presented special challenges vis a vis infrastructure. Nonanatomic pathology laboratory data can be transmitted easily because the quantity of data is small; thus, even with a minimum of Internet access, clinical laboratory results (microbiology, chemistry, hematology, and transfusion medicine) can be transmitted in a timely fashion. Online

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