

Tele dermatology: Examining the future

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With the advent of modern technology newer therapies are being invented each day. Communication technology is developing at an extremely fast pace. This heralds the dawn of a new era in medicine. Telemedicine is the epitome of this technology. This, too, has proved beneficial for the medical industry. Telemedicine denotes 'the use of telecommunications to diagnose and treat disease and ill-health' due to its specific target of medical application, rather than the broader term 'tele-health' which includes 'surveillance, health promotion and public health functions.'¹

Several taxonomies have been proposed to describe the telemedicine applications being delivered, including the relevant clinical specialties, the connectivity technology being used and the care model supported.² With the evolution of ICT (Information and Communication Technology), the term now encompasses telemedicine (telehealth), networking of ICT (e-health) and personalization of e-health (m-health and u-health).²

Visualization of images in different fields of medicine has proved invaluable in formulating patient diagnosis and obtaining opinion from qualified personnel who, though might not be present at site, can still offer professional advice and/ treatment from far away.³ The two methods used are store-and-forward and live-interactive. The effectiveness of the approach depends

closely on the quality and acquisition characteristics of the imagery. Technical aspects, such as image resolution, focus, and depth-of-field, as well as lighting, position of camera relative to the subject, and colour are all important to ensure that there is enough information for accurate clinical assessment and judgment.³

In the developed countries, the uses are mostly consultation and access to population who are unable to avail healthcare facilities e.g. older populations. In developing countries with poor health infrastructure, non-availability of specialized healthcare personnel, no roads and lack of good tertiary care centers put the burden on primary care facilities to bear the brunt. In situations like these, telemedicine can be invaluable. Patients can be linked directly to qualified and highly trained professionals.

Among the fields that appear to have benefited the most, are tele dermatology and teleradiology; dermatology in particular because it involves visual examination. It can be applied in two ways: Real-time: Using video-conferencing equipment or by store and forward method. Recent advances include mobile tele dermatology using both store-and-forward and real-time with a new method, with a video-enabled smartphone.⁴

The legal aspects related to the introduction of tele dermatology in the health system have not been fully clarified yet and, unfortunately, at the moment, laws lack in clarifying responsibilities, jurisdiction conflicts and reimbursements of

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telemedicine consultations. They also lack in the need for a license, accreditation and registration of professionals dedicated to this medical discipline.⁵

In Pakistan, project taken up by The Telemedicine Project connecting major tertiary care centers with satellite centers in remote areas like DG Khan, Rahim Yar Khan, Sahiwal and Okara in Punjab. These centers did not have specialized healthcare personnel. In studies from countries like Egypt, teledermatology appeared to be a useful tool for diagnosing and treating patients in far-flung areas.⁶

These sessions reduced costs as one-on-one consultations that would have been too expensive for the patients. Diagnostic accuracy is comparable to real-time consultation if the right conditions are met: Effective pre-selection of patients, proper equipment for examination and prompt follow-up of the treatment given.

Further applications include teledermoscopy and earlier detection of the malignancy, patient education, vital in preventive medicine to home-based patients' health status monitoring. It is an ideal tool for developing countries which can be used simultaneously for treatment and health

education, used as a tool in far-flung communities to emphasize basic concepts in community like vaccination, proper sanitation etc.

There is vast potential in this technology to deliver in terms of health services and patient education and needs to be exploited further.

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