

Chapter XIV

The Roles of a Nurse in Telemedical Consultations

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ABSTRACT

Telemedicine, or distant medical consultations using communication via electronic networks, is gradually becoming a standard of medical care delivery in distant areas worldwide, including both the most developed and the developing countries. For instance, in 2007, telemedical centres existed in 55% of the Russian regions (on average, about 4 centres in each region). In most of the cases, nurses are actively involved in the organization of various types of distant consultation. Main types of telemedical services include: (1) emergency consultations of patients by telephone, (2) telemedical consultations using videoconferences or store-and-forward systems, and (3) home telecare systems. Possible roles of nurses in different types of telemedical consultations are discussed.

INTRODUCTION

According to the definition of nursing suggested by The International Council of Nurses (ICN), nursing includes “the promotion of health, prevention of illness, and the care of ill, disabled and dying people” [1]. ICN also underlines that the scope

of nursing practice is “dynamic and responsive to health needs, development of knowledge, and technological advances” [2].

The development of so-called telemedicine can be referred to as one of such technological advances that might cause significant changes in the scope of nursing practice in the nearest future.

Telemedicine is a term which was coined only several decades ago. A number of somewhat contradictory definitions have been suggested for this term [3], but generally most of the authors now agree that the term 'telemedicine' represents *medical care provided to patients at a distance by using electronic means of communication*.

Some authors prefer to use the broader term *telehealth*, which mostly refers to administrative and educational use of telecommunications in healthcare [4].

The aim of this chapter is to demonstrate some examples of nurses' roles in contemporary telemedicine and to discuss in brief what could be the nurses' roles in telemedicine of the near-est future.

BACKGROUND

The first ideas of telemedicine were probably suggested at the beginning of the 20th century by Willem Einthoven, who made attempts to transfer electrocardiograms by telephone lines [5]. Later on, in the 1930s, radio communication was used to provide medical advice aboard ships and planes [6].

Distant medical consultants became important in the 1960s, when the Soviet Union and U.S. launched their space programmes [7] and it was necessary to have some control over the astronauts' health. For a long time, telemedicine remained 'an expensive toy', as it was based on rather unique expensive technologies (e.g. satellite communications) suitable until the 1990s mostly for astronauts and military applications.

Wide introduction of personal computers and, even more important, the Internet, made telemedicine much more 'democratic'. Since the 1990s, simple telemedical equipment can be installed virtually at any clinic. Using electronic mail, a doctor could request a 'second opinion' from a distant specialist who might have better

expertise for a specific case. Such communication was convenient, fast and reasonably priced.

Later on, video cameras, digital photo cameras, and scanners were successfully used to record important information about a patient in digital form. Such information could be sent to a distant consultant via electronic networks. At the same time, thousands of videoconferencing systems were installed worldwide, so that by the end of the 20th century, almost every large clinic had the possibility to organize live video connection with a number of other clinics throughout the world. Many clinics installed videoconferencing units which made intra-hospital telemedicine possible [8]. Also, a number of experiments have been done to install telemedical equipment at patient's home, so that patients could ask for medical advice without leaving their homes [9].

Now telemedicine provides a convenient means of communication between a patient (or a medical worker, representing his interests, e.g. a nurse or GP) and a highly qualified medical consultant, usually a specialist in a particular field. Normally, advice of such a consultant might not be available for a patient without special travel.

Such travel may not be feasible due to the following reasons:

1. A long time is required for such travel
2. Excessive cost of travel (compared to the cost of telemedical consultation)
3. Travel is not suitable for a patient due to the severity of his state
4. Travel is inconvenient for a patient, e.g. for a businessman with a tight schedule

Telemedicine is known to be most effective for those areas of medicine that do not require close personal interaction between a patient and a physician. In the case of teleradiology or telepathology, a consultant reviews only a radiography image or an image of some microscopic preparation; the consultant's actions do not differ much from

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