MEDINFO 2007
HISA Ltd Australia
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Use of Emerging Technologies in Healthcare: A future Vision For u-Nursing

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Abstract

The plethora of emerging technologies provide the impetus to consider a future vision of nursing that maximizes the benefits of technology supported health care for consumers. An international group of nurse informatics leaders at the International Medical Informatics Association – Nursing Informatics Working Group (IMIA-NIWG) Post Congress considered the potential trends in health informatics, with particular regard to technology and health care for the future, looking forward to 2020. The focus is on how technology could be used to provide health care in tomorrow's world and the impact this might have for nursing. Technology use will increase, be everywhere and part of everyday life – technology will be ubiquitous. This will impact significantly on nursing practice and we propose that ubiquitous nursing (u-nursing) will be the future trend.

Keywords:

nursing practice; diffusion of innovation

Introduction

This poster is a representation of the deliberations of an international group of nurses who were charged with contemplating the potential trends in health informatics. Due to the rapid developments in technology and the myriad of possibilities, the group looked forward to the year 2020. We predict that technology use will be ubiquitous and this will impact significantly on nursing practice and the future role of nurses.

Scenario for healthcare in 2020

A consumer with diabetes is discharged from the Clinical Care Facility after bypass surgery with personal sensors in a wristwatch and as most others, they live in a 'smart house'. The wristwatch has near infrared spectroscopy sensors (NIRS) monitoring blood glucose, peripheral arterial oxygen saturation and carbon dioxide, pH, electrolytes, ECG, BP and peripheral temperature. Sensors in chest and leg dressings send messages to the nurse when it is time to change them. The radio frequency identification (RFID) medication cabinet monitors prescribed medication use and need for supplies. The consumer's exercise program and diet for the day is scheduled and appears on screen and the consumer can log onto a chronic disease support / post operative education group Sensor data is forwarded to U-Health Center, processed and any values outside the range are returned to consumer with correctional suggestions. The consumer is supported by a communication system (voice activated - video phone) between home and the nurse at the community-based U-Health Center.

U-Nursing

Extending the current understanding of nursing to u-nursing in 2020 the authors decided on the following definition of U-nursing: "Provision of nursing for anyone or any organization, anytime, anywhere, through any networks and any devices". Further discussion identified many challenges and issues, as well as opportunities for nursing the future.

Nursing in 2020

The nurse of the future will have a key role as info-mediator to facilitate the consumers' use of technology. It is recognized that nursing education as it is currently provided will not adequately prepare the nurse we envisage for the future. Patients are redefined as consumers, as users and partners in health care. We are united in emphasizing that the focus should be on consumers and not the technology. Rather the consumers and health priorities should drive technology development. International trends of the aging population and the increase in chronic diseases indicate that the consumers of the future are likely to be older and many may have chronic diseases. Health services will be

needed to support these consumers. However, an additional important focus will be on health promotion and maintenance to reduce the burden on the health services.