

A telehealth and telecare initiative in Hong Kong

Thomas K.S. Wong

Abstract Over the past several years, health services delivery has undergone rapid expansion, and has developed a unique mix of education, research and service in the discipline of health sciences. The Team in the School of Nursing at The Hong Kong Polytechnic University thrusts forward a unique and novel initiative - Telehealth and Telecare. Central to Telehealth is the Telehealth System developed by the School. Using the Telehealth System as a means, the School initiated several community-based primary health care services such as the Telehealth Clinic, the Healthy Sprout School and the Adolescent Health and Development Curriculum. With the application of advanced health and information technologies, the Telehealth System provides primary health care through a multi-disciplinary approach and establishes a life-long health record system for local residents. With health data obtained through the System, a Health Statistics Centre was established to monitor and assess the health of the targeted community by providing a community health profile. Furthermore, based on the life-long individualized health records and the aggregate data from the Health Statistics Centre which is community oriented, the System forms the basis for development of health services to meet the health needs of both individuals and the community.

Key words Telehealth Telecare Hong Kong

Introduction

The School of Nursing of The Hong Kong Polytechnic University embarks on an initiative in setting up a Centre with a Telehealth and Telecare system. The mission of the initiative coincides with the goal of the HKSAR Government to strengthen the "quality of living environment and environmental protection"(HKSAR,2001) and "lifelong investment in health²". Thus, the mission of the Centre is:

"To assume a leading role to promote health in the community by providing community-based primary and rehabilitative and palliative health care services through its clinics, evidence-based practice and develop health care professionals for community focused integrated health care delivery. The Centre is a focal point of service and applied research, provide a training ground for the School's students, be a source expertise of health care provision and research on health care issues."

It is important to note that Telehealth means the provision of health-oriented services at a distance through telecommunications. Telecare refers to the provision of care to those with chronic disabilities (e.g. diabetes, stroke), high-risk groups (e.g. infants and

elderly) and life-style compromised populations (e.g. respiratory and heart problems) over a distance. Telehealth and Telecare are different from Telemedicine, which is the provision of medical consultation in remote areas. Thus, the initiative is basically designed to achieve the followings:

1. To provide a focus within the University for community-based primary, rehabilitative and palliative health care service — a one-stop comprehensive health service.
2. To provide training and education to professionals (e.g. nurses and nurse practitioners, optometrists) and to people in the community within the scope of the services provided by the Centre.
3. To enhance the application of Telehealth and Telecare in the community.
4. To transfer the necessary technologies to industrialists for the creation of innovative and consumer-friendly telehealth devices, which will be market competitive both today and in the future.
5. To provide a platform for research in community-based health promotion and protection programmes.
6. To foster local, national and international research collaborations in this new area.
7. To provide partnerships and to increase synergy across the domains of teaching, research, consultancy and service within various institutions such as the University, hospitals, clinics and companies.

8. To provide advice and consultancy to government and health care sectors on health service issues related to health statistics and health research.

Health data

The Telehealth Clinic, part of the Centre, began operation in July 2001 as a form of field trial. A total of 1,888 voluntary residents from 1,161 families have used the services. Among the 1,888 participants, 1,106 indicated that they had at least one health problem. Table 1 illustrates the number for co-morbidity.

Table 1 Frequency of co-morbidity by participants (n=1106)

Number of morbidity	Frequency (%)
1	544 (49.19)
2	294 (26.58)
3	161 (14.56)
4	66 (5.97)
5 or more	41 (3.70)

Co-morbidity listed in Table 1 included respiratory problems (asthma, bronchitis, pulmonary tuberculosis, emphysema), cardiovascular problems (rheumatic fever, hypertension), gastrointestinal problems (bleeding or ulcer over oesophagus, stomach), liver diseases (hepatitis, cirrhosis), gallstones, renal diseases (stones, failure), neurological disorder, endocrine problems (diabetes, thyroid related), arthritis, cataract, psoriasis, gout, cancer and tumour. Though lifetime prevalence results may inflate the severity of co-morbidity in the community, it does reflect the significant impact of chronic illness on individuals. Based on the frequency count of the problems reported (1,647 in total), hypertension was the most frequently reported problem, followed by arthritis (Table 2).

It is also interesting to note that 50.1% of the participants complained of pain and 52.2% needed visual aids. One hundred and forty-five of them requested for information on health maintenance. Most problems were resolved through individual health counselling (49.0%) or by attending health education classes. Only 4.0% were referred to other health care professionals such as optometrists, social workers and

family doctors. These results provide the School with a direction for the focus of its clinic service in the future and are evidence of community needs. It is obvious that the Centre provides another health consultation choice for people in the community. After all, health is the concern of every health professional, not only doctors.

Table 2 Frequency of problems

Problems	Frequency (%)
Hypertension	314 (19.10)
Arthritis	190 (11.54)
Stomach ulcer	176 (10.69)
Dizziness	106 (6.44)
Cataract	98 (5.95)
Diabetes	98 (5.95)
Bronchitis	93 (5.65)
Prolonged headache	91 (5.53)
Asthma	79 (4.80)
Thyroid related	79 (4.80)
Cancer	78 (4.74)
Others	245 (14.80)

Apart from the cross-sectional data above, the Telehealth System also allows longitudinal measurement of health status. This is important for identifying the course of health problems and the critical points when evidence of such problem becomes apparent. There are many health problems for which medical scientists do not know the cause. They could result from a series of events that occur during life. Through longitudinal measurements, the Telehealth System will be able to keep track of most parameters that may lead to health problems. It is believed that some interventions could be used to correct problems when they were detected at an early stage.

Implication for practice

For Hong Kong's predominant Chinese population, many normative values of health parameters are not available, e.g. body mass index, child's growth and development. Western values have long been adopted as the norm. Although some research efforts in this

area have begun, the methodology has yet to be validated. The Centre will provide the School with the necessary resources and expertise to address this need.

Another aspect of health that is not well understood in the community is people's health seeking behaviour and its relationship with the family dynamics. The Green Paper on Health Care Reform suggests further investigation (HKSAR, 2001). The simple assumption that people go through a decision making process before they visit their doctors or the accident and emergency department has yet to be challenged. Many factors influence their decisions. Through the data captured by the Centre and the associated services subsequently delivered, the School would be able to examine this aspect of health and health seeking behaviour.

Challenges ahead

Despite many institutes have conducted research in the area, Telehealth and Telecare are relatively new themes for research, service and commercial venture. Most research has concentrated on one or two aspects or a special application (e.g. wireless technologies) and has been carried out under the umbrella of general telecommunications rather than by the adoption of a comprehensive approach. The Centre is the first of its kind in this region, if not in the world, dedicated to Telehealth and Telecare. It has enormous potential for applied research, teaching and learning and business in health science and health care. The Centre operationalizes

the concept of Telehealth and Telecare to the fullest extent possible. The Centre *not only* maximizes the use of present technologies *but may also* provide desperately needed research evidence on the effectiveness of many interventions yet to be tested. The challenge never ends, but is limited by people's imagination.

References

- HKSAR (2001). HKSAR 2001 Chief Executive Policy Address & Objective. Hong Kong: Printing Department HKSAR.
- HKSAR (2001). Green Paper: Lifelong Investment in Health. Hong Kong: Printing Department HKSAR.

香港的遙距健康與照護系統

汪國成

摘要 近年衛生服務急速發展，從而在健康科學中發展成一個以教育、科研、服務為一體的獨特體系。香港理工大學護理學院的團隊開創了一個嶄新的項目－遙距健康與照護。遙距健康的中心是護理學院所建立的遙距健康網絡。通過該網絡，護理學院開展了以社區為基礎的健康照護服務，例如，遙距健康站，幼兒健康學校及青少年健康與發展課程。透過先進的健康與資訊技術，遙距健康網絡提供了多領域合作模式的基層健康照護並為當地居民建立終身的健康記錄戶口。因此，一所健康記錄統計中心就此成立以評估及監測特定社區的健康狀況，提供了社區的健康面貌。此外，健康統計中心是一個以社區為中心的單位，其綜合的健康記錄戶口資料可作為健康服務發展的依據，從而滿足社區及個人的健康需要。

關鍵詞 遙距健康 遙距照護 香港