Update on the Development of the Community Health Call Centre

Purpose

This paper aims to update Members on the development of the Community Health Call Centre (CHCC) in the Hospital Authority (HA).

Background

2. The use of a call centre service to coordinate the appropriate use of healthcare resources, to reduce unnecessary use of emergency hospital services and to augment chronic disease management has been shown to be successful in countries such as the United Kingdom, Australia, New Zealand and the United States.

3. In Hong Kong, a HA corporate CHCC was established in 2009. The HA CHCC service entails a pioneering model integrating the application of information technology, communication technology, statistical modelling and the HA Electronic Patient Record (ePR) system to deliver professional and high volumes of telephone advice to target patients. All calls are made/handled by trained nurses. Unlike the call centre services in other countries which mainly involve patients calling in, the HA CHCC service adopts a proactive approach by emphasising outbound calls to target patients in the community, and therefore enables more effective tracking in order to provide them with the required support.

4. To date, under the CHCC, two dedicated facilities are established. One is the Patient Support Call Centre (PSCC) set up in Tang Shiu Kin Hospital (TSKH) in 2009 which provides support to high risk elderly patients discharged from HA hospitals and patients with diabetes mellitus (DM). Another facility is the Mental Health Direct (MHD) established in the Kwai Chung Hospital (KCH) in 2011 which provides telephone support to patients with mental illness. Services are provided all year round and available also on Sundays and Public Holidays.
System Integration for Telephone Support to Patient Care

5. In developing the service, a modernised user friendly and automated system was tailor made for the delivery and monitoring of the high volume, professional and coordinated services provided over the phone. Above all, an innovative Call-logging System was developed through joint input from the clinical and information technology teams of HA. The Call-logging System integrates the HA Clinical Management System (CMS), lists of target patients regularly generated, call and clinical protocols, algorithms for decision support as well as referrals to appropriate services. It also supports short message service (SMS), paging service and web/auto fax functionality. Moreover, management statistics, reports and records of calls can be generated by the Call-logging System for quality assurance, auditing and resource planning. Details of the integrated system are illustrated below in the service developed for high risk elderly patients.

Service for High Risk Elderly Patients

6. Elderly patients are the major and frequent users of HA hospital services as many of them have multiple chronic diseases and disabilities hence they have been the major target group of the CHCC service since its establishment in 2009. In the PSCC located in TSKH, a list of elderly patients just discharged from the hospitals with high risk of hospital readmission as identified by the Hospital Admission Risk Reduction Program for the Elderly (HARRPE) score will be auto-generated and integrated into the system every day for nurses’ phone follow-up. The calls will be made within 48 hours upon hospital discharge. Before making the calls, nurses will review individual patient’s clinical record via the HA ePR. Nurses will then assess and identify patients’ health problems over the phone, and provide advice on disease management as well as care support accordingly. Among the advice given, majority are related to medication management and care of common elderly problems. Advice given by nurses is guided by clinical protocols computerised in the Call-logging System and documented.

7. When indicated, nurses will coordinate and arrange referrals to appropriate services such as outpatient consultations, outreach services and social care. Cluster response teams comprising geriatric doctors and nurses are formed in each cluster to provide prompt professional advice and support to PSCC. Collaborative networks with local non-government organisations (NGOs) and community partners are also established for comprehensive care support.

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1 The Hospital Admission Risk Reduction Program for the Elderly (HARRPE) represents the predicted probability of emergency admission to hospitals within 28 days of discharge from a medical ward. It is computerised and developed through a statistical model based on patients’ socio-demographic, key clinical and health services utilization information available on the CMS. Reference can also be made to the published article viz. Tsui, E., Au, S.Y., Wong, C.P., Cheung, A. & Lam, P. (2013). Development of an automated model to predict the risk of elderly emergency medical admissions within a month following an index hospital visit: A Hong Kong experience. Health Informatics Journal, December 18, 2013. doi: 10.1177/1460458213501095.
8. Evaluation of the service for high risk elderly patients demonstrated its effectiveness in reducing emergency hospital readmissions and Accident and Emergency Department (A&E) attendances of target patients by more than 25%. The service was extended to all clusters in 2010/11, currently providing around 150,000 calls and supporting more than 46,000 high risk elderly patients a year. Among the calls, 70% are outbound calls made by CHCC nurses, and the remaining 30% are inbound calls made by the elderly patients or their caregivers seeking advice. The service has been strengthened to provide more comprehensive advice, e.g., during winter surge, call service is enhanced to include advice on vaccination and care of chronic diseases.

Service to Support Chronic Disease Management (Diabetes Mellitus)

9. It is evident that better self-management of chronic disease with support from healthcare providers can enable patients to remain in stable conditions and prevent complications. As such, the call centre service has been extended to empower DM patients on self-management since 2011. DM patients being followed up in the General Out-patient Clinics (GOPCs) with sub-optimal disease control and are unable to attend other structured empowerment programme (e.g., the Patient Empowerment Programme conducted by NGOs) will be referred to the PSCC. Based on individual patients’ conditions and needs, PSCC nurses will provide a series of telephone advice to improve the patients’ knowledge and self-care skills. Each patient will receive around ten calls over a period of nine months. The advice mainly focuses on medication management, diet, exercise, self-monitoring, risk factor management, problem solving and/or coping skills. On top of telephone calls, dietary advice will be sent to patients through SMS during festivals.

10. Besides using traditional channels to coordinate the works between the PSCC and GOPCs, electronic referrals and information sharing between the two services through the CMS and Call-logging System are developed to facilitate communication and continuity of care. When indicated, GOPCs will provide earlier follow-up for the patients.

11. The PSCC service for DM patients has been rolled out to support GOPCs of all clusters. In 2013/14, around 70,000 calls were made to support target DM patients. Service evaluation has shown that the Chronic Disease Management (Diabetes Mellitus) [CDM(DM)] programme was effective in improving DM patients’ knowledge and practices on areas like dietary control, being physically active, medication management and self-monitoring. It was also revealed that compared with DM patients who have not received the CDM(DM) telephone support, DM patients completed the CDM(DM) programme showed further reductions in HbA1c level by an average of 0.23%.
Services to Support Patients with Mental Illness

Advisory Service

12. Mental illnesses such as psychotic disorders are disabling and chronic in nature. There is increasing recognition that providing better support to patients with mental illness outside the hospital setting is an important element for patient care. Developing upon the CHCC model, a designated call centre, the Mental Health Direct (MHD), manned by psychiatric nurses who provide 24-hour professional and coordinated mental health advice, was set up in KCH in January 2012. Around 80% of the callers are HA patients with mental health problems or their caregivers.

13. In MHD, all calls are received or delivered by experienced and trained psychiatric nurses, guided by clinical protocols and supported by psychiatrists. Upon receiving the calls, MHD nurses will identify the immediate mental health issues, assess the imminent risks, provide prompt advice and arrange referrals as appropriate. Emphasis is also placed on collaboration with other HA psychiatric services as well as community partners and NGOs. In 2013/14, the advisory hotline supported around 12,000 calls and it is shown that the Advisory Service can reduce the need for referring callers to attend the A&E consultation services.

‘Psychiatric Telecare Service’ for Patients with Severe Mental Illness

14. To strengthen support to patients with severe mental illness (SMI) and their caregivers, MHD started the Psychiatric Telecare Service by phases since April 2012 to support SMI patients who are in relatively stable conditions and living in the community. The service is now expanded to support SMI patients of all clusters. Community psychiatric nurses or case managers refer patients to MHD for continual psychiatric telephone support upon completion of their home visit services. Psychiatric nurses from MHD will give regular calls to these patients and provide assessment, advice on disease and medication management as well as physical and social wellbeing. If deterioration of mental health conditions is observed through the calls, the patients will be referred to the appropriate psychiatric services. Regular reviews of patients’ conditions will be made and patients who remain stable would have the Telecare Service completed. Moreover, these patients and their caregivers can also contact MHD at any time for advice. In 2013/14, the service has provided about 30,000 calls to support 2,000 SMI patients.

Governance of CHCC

15. The CHCC service is under the governance of the CHCC Steering Committee chaired by the Chief Executive (CE) of HA. Composition of the CHCC Steering Committee is listed in the Annex. Under the Steering Committee, Working Groups are set up and led by senior clinicians from the relevant specialties to provide
guidance on clinical service development and quality assurance. The governance structure is shown below:

**Governance Structure of CHCC**

![Governance Structure Diagram]

**Quality Management**

16. The CHCC is currently delivering more than 260,000 calls a year, hiring around 70 nurses working on full-time or part-time basis in the PSCC and MHD. To ensure the provision of professional and client-oriented telephone advice services, the CHCC has all along put a lot of emphasis on staff training and quality assurance measures, including:

- structured and comprehensive orientation programmes would be arranged for all nurses joining the service before they are allowed to handle the calls independently;
- regular training and continuous mentoring and monitoring are provided by experienced nurses;
- assessment, advice and referrals made by the CHCC nurses are guided by protocols and recorded in the Call-logging System for record and review;
- services development, including the development of protocols, are under the clinical governance of the respective Working Groups and specialties; and
- Quality Management Manual is formulated to set the standards and guide the workflows to ensure the quality of service.
17. In addition, other quality assurance measures have also been implemented, e.g., Privacy Impact Assessment was conducted and contingency plans are developed. These measures will be regularly reviewed to continuously improve the CHCC services.

Achievements

18. Since its establishment, the CHCC has received commendations by patients and their families through appreciation letters to the CHCC from time to time. The CHCC service model was also appreciated by senior health officials inside and outside Hong Kong (e.g., the Mainland, Australia, Japan, New Zealand, Singapore) who visited the CHCC and have taken reference to our service model and system support in developing health call centre services. In addition, the innovative approach adopted in the CHCC services has gained recognition beyond HA. The CHCC service won three prizes in the category of Best Innovation and Research in the Hong Kong Information & Communication Technology (HKICT) Awards 2012, namely, the Grand Award, Gold Award and Award in Special Mention (Commercial Value).

Future Service Development

19. After several years of operation, it is observed that the CHCC service model can contribute most by supporting HA patients with chronic diseases living in the community. PSCC will continue to explore the development of services to support other patients with chronic diseases under the care of HA so as to optimise its role.

20. Furthermore, the MHD will continue to develop services to better support patients with mental health problems living in the community. For instance, since default follow-up at Psychiatric SOPCs is a key issue of concern for HA mental health services, the MHD will develop telephone support service to assist in tracing the defaulters of Psychiatric SOPCs. It is envisaged that MHD can contribute in the earlier re-engagement of defaulted patients back into mental health services, which in turn may help reduce their risk of relapse and hospitalisation to psychiatric wards.

21. With the built-in systems that combine information and communication technology with the HA ePR, CHCC has the potential to play a role in supporting HA contingencies (e.g., provide telephone advice to target groups or help in recall exercise). The CHCC will coordinate with the Head Office Major Incident Control Centre and provide support if necessary.
Advice Sought

22. Members are invited to note the progress update mentioned above and comment on the development of the CHCC service.
Annex to HAB-P206

The CHCC Steering Committee

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