Nursing Practice Today

Nurs Pract Today. 2015; 3(1): 1-4.

Editorial

Critical care outreach services for caring acutely ill patients in general wards

Alireza Jeddian[1], Leila Sayadi[2]*, Nazila Jafari[1]

[1] Digestive Disease Research Institute, Tehran University of Medical Sciences AND Ministry of Health and Medical Education, Tehran, Iran
[2] School of Nursing and Midwifery, Tehran University of Medical Sciences, Tehran, Iran

Origins of Critical Care Outreach Services1

Currently, an ever-increasing number of acutely ill patients, whose critical and unstable conditions are life-threatening, are being admitted to medical and surgical wards in hospitals (1). This is the result of the aging of populations worldwide (2), invention and development of more sophisticated therapy modalities, novel technologies, and emerging diseases (3). On the other hand, since intensive care beds are not available in sufficient numbers, healthcare staffs encounter patients with unstable clinical conditions that require varying levels of critical care on a daily basis in general wards (4).

Admission of acutely ill patients to general wards is associated with higher rates of morbidity and suboptimal care. Suboptimal care leading to patient mortality is recognized in hospitals worldwide as a major problem requiring particular attention. Some studies suggest that many cases of intensive care unit (ICU) admission are the result of insufficient care being provided in wards (5).

Timely care for these patients may attenuate the dangers they encounter. The Critical Care Outreach System (CCOS) has been implemented for caring these patients in developed countries over the past decade. In Australia, the Medical Emergency Teams (MET) were established to care acutely ill patients on wards. In the United Kingdom, Patient-at-Risk Teams (PART) were developed and followed by the implementation of the Critical Care Outreach Team (CCOT) as mandated (6). The Rapid Response Team (RRT) was developed in healthcare system of the United States of America. Other countries started using these services and it goes to be implemented in more countries (7). As CCOS is recommended to be planned and delivered systematically across any given health system (8).

CCOS activities and composition

Despite having different names, the ultimate objective of all these CCOSs was common and all aimed to care for and prevent mortality of acutely ill patients in general wards. The Intensive Care Society defined CCOS as a multidisciplinary approach for collaboration of the ICU and other wards in order to guarantee patient care, regardless of their ward with the following objectives: a) identifying patients at risk, b) aiding patients recovering from critical illness, c) enabling early interventions or transfer the patient to an appropriate ward for better care, d) preventing unnecessary ICU admissions to ensure that ICU beds are available for critical patients who need them, and e) enabling discharge from intensive care (8).

CCOS in different countries has different protocols and activities; team composition, members and size depend on the structure of the hospital or the healthcare system of the country. The form and processes of these services are based on regional priorities and resources. Regardless of the model selected, outreach must form part of an organized approach for supporting all patients who need critical care (8).

The CCOS have crisis detection and crisis response parts. The crisis detection includes monitoring of patients to detect deterioration, use of Track and Trigger Warning Systems (TTs) and Early Warning Scoring System (EWS). TTs use periodic

* Corresponding Author: Leila Sayadi, Postal Address: School of Nursing and Midwifery, Tehran University of Medical Sciences, Tehran, Iran. Email: sayadi117@hotmail.com

Please cite this article in press as: Jeddian A, Sayadi L, Jafari N. Critical care outreach services for caring acutely ill patients in general wards. *Nurs Pract Today. 2016; 3(1): 1-4*

observation of selected vital signs/ oxygen saturation/ urine output/ coma score (tracking) with predefined criteria (trigger) to alert expert staff of CCOT. In the majority of cases, TTs is implemented through routine observation of vital signs by ward staff, thus allowing a large number of patients to be monitored without imposing extra work-load upon the staff (6, 9).

The crisis response or response team responds to detected events and patient deterioration. Different crisis response models exist and terms such as RRT, CCOT and MET, describe the crisis response side. From the view of leading services, two main types of response team have been formed; the first are physician-led teams known as high capability teams and the second are nurse-led or intermediate capability teams.

Response team must have enough knowledge for being selected from seniors and clinical experts, who could make decisions with enough knowledge to train ward staffs. They should be capable of assessing patients, diagnosis, at a minimum some therapy and fast transfer of acutely ill patients to a higher level of care (8, 10).

CCOS effectiveness

There are many studies that have investigated the CCOS effects on mortality, cardiac arrest, length of stay (LOS), and ICU admission in different adult and pediatric patients. A systematic review of the effectiveness of CCOS showed that the number of actual randomized controlled trials (RCTs) was low; the effects on mortality in adult hospitals were heterogeneous and suggested that further research is necessary in order to evaluate the effectiveness of critical care systems (7).

However, these services have affected aspects of medical service such as facilitating the evolution of hospital attitude, leading hospitals to patient-oriented policies, enabling staff to demand help when necessary; support and security for medical and nursing staff, since a supportive system reduces stress and helps learning; providing a new channel for communication and discussions related to patient care, sharing the experiences of team members, improving critical care through provision of advice, support and training; facilitating the development of critical care skills in clinical wards, making better quality of end-of-life care for patients and their families, and establishing a pivotal point of contact between different types of healthcare teams (8, 11).

CCOS and Iran hospital care

The frequency of acutely ill patients in Iran has risen for several reasons. The most notable of these reasons is steadily aging population. It is estimated that more than 10% of the Iranian population will be over 60 years old by the year 2021, and that this number will have surpassed 20% by 2050 (12). This aging population brings about the increasing frequency of age-related and chronic diseases (13) rendering this group of patients more at risk of requiring critical care.

Studies in other countries indicate that an aging population increases the number of critical patients. These studies have also identified other factors that influence the shifting of patients from ICUs to general wards. These include technological advances, improvement in treatment options of known diseases, growing expectations of society and limitations in resources (5, 14), all of which are also true in Iran.

Other reasons are high rate of traffic accidents as the second cause of mortality in Iran (15), high incidence of natural disasters (15, 16) and large number of patients with cardiovascular diseases (17). This trend has increased demand for intensive care beds in hospitals. This increased demand poses a challenge and dilemma for Iranian health care system and has been highlighted on numerous occasions by the mass media. For example, the head of the Iranian Society of Critical Care has mentioned the shortage of ICU beds nationwide (18). But, ICUs are costly due to their particular type of personnel and services. The high cost of adding intensive care beds (as well as the cost of special equipment) is one of the main reasons for the shortage of these beds. According to a number of reports, the cost of adding each intensive care bed is very high (18) in addition to the costs of staffing.

Absence of an established system of palliative care in Iran is another major issue. There is no set of instructions or guidelines about managing end-stage patients available in hospitals in Iran. The issue has not been put onto the health agenda and few studies have been carried out in this field (19).

The end-stage patients also stay in general wards; as a result the workload increases. The se-

verity of condition of the acutely ill patients, ICUs-discharged patients being transferred to general wards, the complexity of skills needed to manage and treat patients and the time taken to administer patient care, all add up to a considerable workload for nursing staff (20). In 2009, the number of nurses in Iran was 90,029, showing a shortage of 240,000 nurses in comparison with regulations (21). This added pressure and the shortage of nursing staff have resulted in a reduction in quality of care, as quality is directly related to the number of nursing staff (22).

Besides, studies conducted in other countries have mentioned lack of knowledge, failure to seek advice, failure to appreciate clinical urgency, complexities of patients' condition and lack of supervision as factors affecting the quality of care (1, 5). This may lead to adverse events and outcomes with catastrophic results such as unexpected death, unplanned ICU admission or cardiac arrest (6).

It is important to consider quality of care and support for acutely ill patients. An immediate plan, to circumvent the challenges and to improve the care for acutely ill patients is necessary.

Considering policies and programs to improve the capacity of general wards in diagnosing and managing acutely ill patients has been recommended, as well as enhancing the competencies of staff through improving their knowledge, skills, and attitude towards acutely ill patients. Establishment of support systems or counseling centers in hospitals, educating and training staff about acutely ill patients could possibly help prepare them for the care of these patients.

According to international experiences, incorporating critical care services into the routine care of hospitals can make health care workers more familiar with caring for acutely ill patients and decrease the adverse events and outcomes with catastrophic results. Iran, a developing country, has not yet implemented a service to care for acutely ill patients in general wards, and therefore, CCOS or other similar services do not exist in the country. The studies suggested further research to evaluate the effectiveness of CCOS. Most of the studies were carried out in developed countries, and no studies were found in Iran; so, proper planning by hospitals managers and policy makers for implementing CCOS in Iranian hospitals is needed.

Acknowledgments

The authors are very grateful to Professor Tom Marshall in University of Birmingham for his genuine cooperation and guidance.

Conflict of interest

The authors declare no conflict of interest.

References

1. Quirke S, Coombs M, McEldowney R. Suboptimal care of the acutely unwell ward patient: a concept analysis. J Adv Nurs 2011; 67(8): 1834-45.
2. Bell MB, Konrad D, Granath F, Ekbom A, Martling CR. Prevalence and sensitivity of MET-criteria in a Scandinavian University Hospital. Resuscitation 2006; 70(1): 66-73.
3. Bright D, Walker W, Bion J. Clinical review: Outreach-a strategy for improving the care of the acutely ill hospitalized patient. Crit Care 2004; 8(1): 33-40.
4. Cei M, Bartolomei C, Mumoli N. In-hospital mortality and morbidity of elderly medical patients can be predicted at admission by the Modified Early Warning Score: a prospective study. Int J Clin Pract 2009; 63(4): 591-5.
5. Massey D, Aitken LM, Chaboyer W. What factors influence suboptimal ward care in the acutely ill ward patient? Intensive Crit Care Nurs 2009; 25(4): 169-80.
6. Centre for Clinical Practice at NICE (UK). Acutely Ill Patients in Hospital: Recognition of and Response to Acute Illness in Adults in Hospital [Online]. [cited 2007]; Available from: URL: http://www.ncbi.nlm.nih.gov/pubmed
7. Chan PS, Jain R, Nallmothu BK, Berg RA, Sasson C. Rapid response teams: A systematic review and meta-analysis. Arch Intern Med 2010; 170(1): 18-26.
8. Intensive Care Society. Guidelines for the provision of intensive care services [Online]. [cited 2015]; Available from: URL: http://www.ics.ac.uk/ics-homepage/guidelines-and-standards
9. Gao H, McDonnell A, Harrison DA, Moore T, Adam S, Daly K, et al. Systematic review and evaluation of physiological track and trigger warning systems for identifying at-risk patients

on the ward. Intensive Care Med 2007; 33(4): 667-79.
10. Carter CA. From ICU top outreach: A south African experience. S Afr Med J 2008; 24(2): 50-5.
11. Valentine J, Skirton H. Critical care outreach-a meaningful evaluation. Nurs Crit Care 2006; 11(6): 288-96.
12. Rasel M, Ardalan A. The future of aging and its health care costs: A warning for health system. Salmand Iran J Ageing 2007; 2(4): 300-5. [In Persian].
13. Peyman H, Seydmohamadi A, Yaghoubi M, Delpisheh A. Prevalence of chronic diseases in Ilamian elderly. Salmand Iran J Ageing 2012; 6(22): 7-13. [In Persian].
14. Bion JF, Heffner JE. Challenges in the care of the acutely ill. Lancet 2004; 363(9413): 970-7.
15. Rasouli MR, Nouri M, Zarei MR, Saadat S, Rahimi-Movaghar V. Comparison of road traffic fatalities and injuries in Iran with other countries. Chin J Traumatol 2008; 11(3): 131-4.
16. Akbari ME, Naghavi M, Soori H. Epidemiology of deaths from injuries in the Islamic Republic of Iran. East Mediterr Health J 2006; 12(3-4): 382-90.
17. Mehrdad R. Health system in Iran. JMAJ 2009; 52(1): 69-73.
18. Salamat News. Shortage of intensive care beds in Iran. [Online]. [cited 2015 Sep 28]; Available from: URL: http://tasalamati.com/e/7JMeD. [In Persian].
19. Asadi-Lari M, Madjd Z., Akbari ME. The need for palliative care services in Iran; an introductory commentary. Iran J Cancer Prev 2008; 1(1): 1-5.
20. Morris R, MacNeela P, Scott A, Treacy P, Hyde A. Reconsidering the conceptualization of nursing workload: literature review. J Adv Nurs 2007; 57(5): 463-71.
21. Zarea K, Negarandeh R, Dehghan-Nayeri N, Rezaei-Adaryani M. Nursing staff shortages and job satisfaction in Iran: issues and challenges. Nurs Health Sci 2009; 11(3): 326-31.
22. Dehghan NN, Nazari AA, Salsali M, Ahmadi F, Adib HM. Iranian staff nurses' views of their productivity and management factors improving and impeding it: a qualitative study. Nurs Health Sci 2006; 8(1): 51-6.