

Particular Emergency Department for Seniors

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Senior people need special emergency cares, which are not extremely compatible with the current services provided at emergency departments (ED). How important is this issue as a priority in the health care systems? The number of senior people, over 65 years old, is rapidly growing in the United States, as they represent 12% of the national population, that is projected to increase to 21% by 2050 [1-4]; moreover, the population of over 85 will be three folded in the next four decades [1-4]. Comparing to the other age groups, because of experiencing more serious and complicated health problems, seniors refer to EDs more than other age groups [5-8]. In other words, as people age, frequency of the visits per person at EDs increases [8]. In fact, the elderly admission rate has been increasing for the last ten years [5]. So a huge, realistic and crucial demand for supplying emergency services is facing that will noticeably increase in the future. The question is why the current emergency services providing in EDs are different from services in Geriatric Emergency Departments (GED).

Some critical and considerable differences between EDs and GEDs are related to the physiological changes occur in the elderly as a period of life, such as decrease physiological capacities in vital human body organs and systems, including immune system. The prevalence and languishing status of the chronic disorders are the important differences between seniors and other age groups. The other contrasts are to do with the design of ED buildings and services need to be compatible with these different needs.

Seniors and Current EDs

Chronic diseases including heart diseases, malignancies, cerebrovascular accidents, and chronic respiratory disorders are the main causes of death in the United States [9,10]. Seniors are more susceptible to these disorders because of the combination of many factors, including life style, cohort, biological and physiological changes [11], so they are prevalent in seniors [12]. Because of fatality and severity of the common disorders, the admission rate of seniors to receive treatments and care is often significantly higher than the other age groups, and the length of admission will be longer as well. For instance, about 50% of seniors having referred to EDs were admitted in one of the hospital departments, which is four times more than the other age groups [5]. This wide gap between these rates can be a result of the under-diagnosis or mismanagement caused by limited time spent for investigation in EDs [13, 14].

Considering the nature of the seniors health problems, they need medical treatments [12], in contrast, the younger groups mostly demand surgical cares when they refer to EDs [5]. So, seniors require not only longer admissions [8,10], but more care time than the other age groups. Because of the unusual and atypical presentation of diseases in the elderly, they may need complicated, time-consuming clinical and para-clinical investigations. In fact, medical staffs also report more challenging situations when they try to differentiate disorders and treat the elderly in EDs [5,15,16]. However, the diagnosis can be less precise due to the polypharmacy and multiple coincide pathophysiology, which are prevalent in the elderly. Then, they usually have to experience invasive investigations, stay for a long time in hospital departments or EDs, and frequently return to EDs with consequences and relapses, having discharged home [5]. As a result, some adverse effects of long time admission or recurrent admission, such as nosocomial infections

and dependency in ADL and IADL are prevalent and life threatening in seniors [5].

Many seniors routinely use multiple drugs, polypharmacy, which leave some unpleasant sequels on their bodies [17,18]. In some emergency occasions, due to time limit, and/or because of incomplete assessments, due to lack of experience or training related to Geriatrics Emergency [19], seniors may receive some medications which might interact with their routine medications, or even some contraindications may happen [20].

EDs, Designs and Services

EDs are mostly designed to provide people suffering from acute or critical health problems for a short period of time with high turn-over. Diversity of disorders, limited space and staffs push the designers to save spaces utilizing curtains or thin walls, which are not compatible with the care the elderly need. For instance, the shared spaces separated with some curtains or thin walls make noisy environments for the elderly, which may trigger delirium or dementia crisis, also a decrease in communication [21]. However, noise reduced environment is critical in order to manage delirium [21], which is one of the most common disorders in the elderly causing frequent hospitalizations [22]. The other possible problem is the amount of day light. As EDs are usually in basement or first floor, and also due to some safety issues, there are not enough windows [8]; therefore, the light of the EDs are supplied by fluorescence lamps which can lead to delirium or exacerbation of dementia in the elderly [22]. Then, the environment of the current ED may cause some new health problems, such as dementia or delirium, for seniors who have referred to EDs in order to receive care and cure for other disorders.

Recurrence of the diseases and disorders can lead to return and readmission in seniors, and subsequently over load of EDs with the elderly occurs. As one third of the seniors admitted in EDs experience the same symptoms before they had admitted in EDs [23], they may return to ED after a short period of time being discharged home. In addition, longer admission time may complicate their problems because of the environmental factors and mismatched devices. In fact, lying on a usual beds and mattresses for a long time in EDs may result in bed sores in seniors [8]. Another architectural design of the EDs relates to the floors that are often soft and smooth in order to be easily and frequently cleaned, yet these kinds of floor may cause slipping or falling in the elderly. Since they usually suffer from inaccurate balance, they easily slip over these floors [8], and bone fractures superimpose their health problems. Bone fracture is a complicated health problem

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in the elderly, so such preventable accidents can result in serious morbidities or mortality [8,24].

Because of the nature of EDs, contrary to the nature of the elderly disorders, medical staffs have to make decision in short time [9]; therefore, the seniors will experience mismanagement and under diagnosis in EDs. In fact, prevalent problems among older people such as depression, delirium, and disabilities are the most common missed diagnosis in EDs [5,6,25,26]. Since ED is a critical and the most crowded part of the hospitals [9], the medical staff cannot spend a long time for doing Comprehensive Geriatric Assessments. Some short form of assessments, therefore, can be helpful in order that rapid screening and more concise management need to be simultaneously provided. For instance, some short forms including Identification Seniors At Risk (ISAR) and Quick Confusion Scale (QCS), are reliable enough to screen the elderly at first stage in a short time [6].

One of the outcomes measuring the services, which were provided in hospitals especially in EDs, is the level of independency in activity of daily living. When the discharged seniors have less dependency in ADL and IADL compared to the level of pre-admission time, the health services would have precisely provided enough to save or reduce the dependency level and vice versa [5]. Since GEDs can reduce the chance of post discharge admission, also the hospital admission consequences in seniors, they can decrease the ADL and IADL dependency level in this group after discharge. Not only do GEDs decline the cost of hospitalization, but increase the patient satisfaction and vitality rate as well [27,28].

Redecoration of the emergency department is not the entire result to be followed. As many departments started to work in recent decade, as independent Geriatric Emergency Departments, they need to be evaluated in terms of efficacy and methods they utilize.

Although tremendous evidence is published about the differences between emergency situation in the seniors and other age groups in every society and country, but it is difficult to implement the findings in the action places. The cares seniors need before hospital are one of the most important part of emergency care because the short fatal time in some common disorders in this group may result in morbidities and mortalities [25,29-31]. Seniors are more vulnerable and they cannot move as fast as the other groups. Senior people may be injured easier than normal population because of low threshold of their physiological capacities. For instance heat and cold toleration or in dehydration occasions can be fatal for seniors while other groups can tolerate it easily. In fact, delirium is one the most common disorders in the elderly which distort the signs or symptoms that result in missed disorders or misdiagnosis before and during admission at EDs [16,23,26,32-34]. There are some courses about the management of the seniors in such emergency situations, but, to the best of my knowledge, no report is published about the outcomes of these educational courses.

Conclusion

In conclusion, senior people need some especial EDs designed compatible with their needs. Physiological capacity and functional capacity steadily decline as people age [12]. Hence, seniors are more susceptible to diseases with high risk of disability, morbidity, and mortality, called frailty [35]. These characteristics influence the approach to medical treatment and care, because seniors are more vulnerable than younger people.

Some regional research can help the designers to know how to design the specific GED for the people referring to this hospital department. In special situations, such as disasters, emergency staffs need to know

how to handle disabled and senior people because they have particular demands and needs differ from other age groups. Therefore, the emergency staffs should be trained for helping senior people in such situations when they can lead other team members and rescue groups so that the elderly can be rescued with the least consequences. In addition special devices need to rescue these groups who are increasing in number. Pre-hospital care training can improve the crucial care before hospital admission. Implementing medical informatics systems as one of the possible methods to decrease admission and investigation time is helpful. Accessibility to the past medical history and the last medical record of the people at emergency situations can help the emergency and rescue team make the best decision in the shortest possible time. Electronic Health Record is one of the methods which offer better and effective access to medical records.

The current GEDs can be assessed in terms of efficacy and effectiveness; therefore some basic models will be presented so that the investors will be encouraged to endow new GEDs. However, health insurance, Medicare and Medicaid, should be considered as one of the financial resources for emergency medical services in GEDs. On the other hand, effective long-term cares systems such as The Program of All-Inclusive Care for the Elderly (PACE) can reduce EDs and GEDs recourse and returns which need more research.

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