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AVERAGE LENGTH OF STAY OF GERIATRIC PATIENTS IN SELECTED HOSPITAL IN DHAKA CITY

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ABSTRACT

A descriptive cross-sectional study was conducted on Average length of Stay of Geriatric Patients in selected Hospital in Dhaka city. Total case document 300 Patients of the age group of 60 years to above.The mean age of the documented Mean±SD = 68.22±8.020. Within 300 Patients Case document 18% (55) were found minimum age 60 years , 12% (36) were found maximum age above 75 years. Current study indicated that mostly the geriatric peoples are more vulnerable get disease like Cardiovascular Disease 45 (15%) . Kidney Disease 25 (8.3%) , Hypertension with Diabetes 22 (7.3%), Stroke with facial Palsy 21 (7.0%), Stroke with LSHP 19 (6.3%), CKD with COPD 18 (6.0%), Hypertension 16 (5.3%), Respiratory Distress Syndrome 15(5.0%), Old MI with Ischemic Stroke 12 (4.0%), Ischemic Stroke 1(3.7%). And more common diagnosis is acute confusional state. This study shows geriatric patients were average length of hospital stay (ALOS) 4.20 days. A retrospective case note review was done for all long-Stay patients under geriatric medicine service of a restructured hospital in Singapore from 1st April 2002 to 31st March 2003. Long-Stay patients were defined as those whose ALOS had notably exceeded the average LOS for the DRG best on principle admitting diagnosis. However the average LOS varied widely across the specialties. A Separate analysis was therefore required to determine the proportion of long- Stay patients in the respective specialties using specialty specific long-Stay markers. For geriatric medicine service, the average LOS for geriatric medicine was 10.9 days the ALOS at the 25th, 50th, 75th, 90th and 95th percentile were 5, 8, 14, 22 and 29 days, respectively the specialty specific marker for geriatric medicine long-stay patients, by using the marker above, was 28 days.[4]

KEY WORDS: Average Length of Hospital stay (ALOS) of geriatric patients.

INTRODUCTION

In the 21st century ageing population and their health has become a growing health- and social care concern all over the world. This is because of an increase in the absolute and relative numbers of older people in both developed and developing countries. There were 600 million people aged 60 years and above in the world in 2000. By 2025, this figure would double to about 1.2 billion people and by 2050 there will be a projected 2 billion aged population, with 80% of them living in developing countries. Despite representing only 13% of the population, elderly patients consume approximately 30% of prescription medications and 40% of over-the-counter medications. The fast growing numbers and proportion of elderly is alarming as greater percentage of people will enter a period of life where the risk of developing certain chronic and debilitating illness will be considerably higher. Age-related illnesses affect the majority of the elderly and seriously impair the quality of life. Geriatric prescribing is particularly a difficult task for managing multiple chronic conditions that the older population suffers from. The age-related changes in drug pharmacokinetics and pharmacodynamics must be taken into account to minimize adverse drug reactions. Most scientific literature on old age comes from North America and Western Europe. However, very little is known about the geriatric patients in the developing world. Therefore it is of great importance to conduct study on the geriatric population of this part of world.[1] The number of elderly people is expected to rise rapidly in Europe and worldwide in the next 30 years. Increasingly large frail aging populations will pose enormous costs on healthcare systems because of the need to treat and manage conditions ranging from fractures cardiovascular disease and mental disorders. Healthcare spending in the United States is projected to increase by 6% from 2012 through 2022, exceeding expected growth of the gross domestic product. Constraints on health service expenditure have led to the streamlining of healthcare systems in many countries, reducing the numbers of available public hospital beds and lengths of stay in hospital. Strategies to reduce length of stay include earlier discharge to care in community settings or at home, with support from home care or mobile rehabilitation units. An important question, however, is whether early discharge increases the risk of complications and ultimately death, since the number of adequately educated staff is lower outside the hospital setting. Shorter length of stay may also reduce the time available for proper rehabilitation, which may be important for regaining mobility and reducing the risk of long term sequelae after events such as fragility fractures. Hip fracture is the most severe and common fracture in elderly women and men; it is associated with high morbidity and mortality, especially in older men. Hip fracture has also been considered to be useful as a

"tracer condition" to monitor healthcare response when designing clinical and organizational improvements in the quality and effectiveness of care for the elderly.

In Sweden, the population aged more than 50 years increased 16% from 2006 to 2012 while the number of hospital beds decreased about 8% necessitating shorter length of stay in hospitals. In this study, we investigated the impact of changes in length of stay after hip fracture in relation to the risk of death after hospital discharge in all Swedish citizens aged at least 50 years on 31 December 2005 and who experienced such fractures between 2006 and 2012.[2]

The average length of stay (ALOS) in hospitals is often used as an indicator of efficiency. Reducing the time spent in hospital reduces the cost per patient and allows more patients to be treated in a given period. Moreover, a shorter stay in hospital allows treatment to be shifted from expensive inpatient care to less expensive outpatient care. Thomas and Burke (2012) examine health policy in Ireland following austerity budgets in the wake of the economic and financial crisis and note that "efficiency gains have been a much vaunted policy tool". The need to provide more services with less financial resources has led to the implementation of policies designed at promoting shorter hospital stays and increasing outpatient appointments.

The overall average length of stay is calculated by dividing total bed days by total inpatient discharges. In 2012 the overall ALOS in Irish hospitals was 5.7 days (versus a target of 5.6 days).[1] The total number of inpatients for the year was 603,911 meaning 3.4 million hospital bed days were used. The potential benefits from reducing the average length of stay are significant. A reduction of one day in the overall ALOS could free up approximately 604,000 hospital bed-days allowing an additional 128,000 inpatients to be treated per year; a 21 percent increase in overall capacity.[3] The elderly population in Korea has been growing very rapidly. The elderly, defined as being 65 yr of age or older, made up just 3.8% of national population in 1980; since then, as we can see from the number and the proportion of the elderly population increased dramatically. The proportion of the elderly population almost doubled in just 20 yr (7.2% in 2000), and is expected to be doubled again by 2020. And with two more decades, the elderly population will probably reach one third of whole national population: that means, there will be fifteen million elders living in Korea by the year 2040, a ten-fold increase in 60 yr span. This speed of population aging may be one of the fastest in the developed world. Accordingly, the societal burden of geriatric psychiatric problems is

growing rapidly. Based on recent surveys using standard structured interviews, researchers and policy-makers in Korea have begun to grasp the order of magnitude of these mental health problems. It has been estimated that up to 10% of the elderly population suffer from dementia, and 10% to 20% from depressive disorder, with considerable overlap between those two conditions. These prevalence estimates were somewhat unexpected based on those found in western countries, that is, higher prevalence of Alzheimer's disease, coupled with lower prevalence of depressive disorder. While these differences are of an academic interest, the sheer numbers of patients that have already presented with these disorders, combined with expectations of many more in the near future, make geriatric mental health a very important emerging public health concern.[4]

Older Americans 2016: Key Indicators of Well-Being (Older Americans 2016) is the seventh in a series of reports by the Federal Interagency Forum on Aging- Related Statistics (Forum) describing the overall condition of the U.S. population age 65 and over. The reports use data from over a dozen national data sources to construct broad indicators of well-being for the older population and to monitor changes over time. By following these data trends, the reports make more information available targeted toward efforts to improving the lives of older Americans. The Forum periodically conducts a conceptual and methodological review of report indicators and format according to an established indicator selection criteria (see "Selection Criteria for Indicators"). This review ensures that the report features the most current topics and the most reliable, accurate, and accessible statistics. After conducting a conceptual framework and literature review in preparation for this report, the Forum modified several existing indicators and added four new indicators: Social Security Beneficiaries, Dementia, Long-Term Care Providers, and Transportation. The 2016 report also contains a newly established Environment domain. This report is intended to stimulate relevant and timely public discussions, encourage exchanges between the data and policy communities, and foster improvements in Federal data collection on older Americans. By examining a broad range of indicators, researchers, policymakers, and service providers can better understand the areas of well-being that are improving for older Americans as well as the areas that require more attention.[5]

With an ageing population the frequency and complexity of interactions between the health and long term care sectors are expected to rise. The provision of care for the elderly is a consistent focus of policy makers in the UK and other OECD countries (Department of

Health, 2001; 2011; Glendinning, 2003; OECD, 2011; Wanless, 2006). Around 10% of individuals over 75 years old used health and long-term care in 2006/7 in England (Bardsley, et al 2012). Many of these were patients requiring health and long-term care following a trauma like a stroke or hip fracture. Hospitals and nursing and care homes in the UK have different funding arrangements and the provision is also organized differently. Acute hospital care is predominantly provided in England by 164 public sector hospital trusts who receive prospective funding per patient treated (based on Healthcare Resource Groups, HRGs) from local Primary Care Trusts who in turn receive a budget from the Department of Health. National Health Service (NHS) patients do not pay for hospital care. There are over 18,000 providers of social care (nursing and residential homes) in England (Laing and Buisson, 2010) who are a mix of for profit, not for profit and public organizations. Most users - about 60% (Forder, 2007) - pay for social care, with those on low incomes or with low wealth being subsidized by their local authority. There are relatively few examples of organizations commissioning both health and social care. Social care has costs and outcome consequences in health care and vice versa (Fernandez and Forder, 2008; Forder, 2009; Vetter, 2003). There is longstanding concern over coordination for patients requiring health and long-term care, in particular the delayed discharge of patients from hospital (Baumann, et al 2007; House of Commons, 2003; National Audit Office, 2000). This concern has led to the increased investment in intermediate care services in community hospitals and elsewhere (Stevenson and Spencer, 2002) and to the Community Care (Delayed Discharges) Act (2003). The Act imposed new duties on councils and NHS to communicate about discharge of patients from hospital. Councils were made liable for reimbursing hospitals for delayed discharges for which they were solely responsible. To improve integration of health and social care services, policy makers need information about the effects of provision of one type of care on the other. In this paper we examine an aspect of health and social care interactions where there is currently little hard quantitative evidence: the extent to which the accessibility of long term care (i.e. nursing and care homes) affects both the length of stay in hospital and the probability of a patient being discharged back to their homes as opposed to a nursing or a care home. We focus on patients aged 65 or over who suffered a hip fracture or stroke whilst living in their own home. These conditions were selected as „tracer" conditions since they have been previously highlighted by policy makers (Department of Health, 2011) and in past research (Bond, et al 2000) as of particular significance when considering the treatment of the elderly. Both are acute conditions requiring immediate hospital care and longer term rehabilitation. Such rehabilitation could take place in hospital but also in outside units, at

home with home help or in a long term care facility. Patients with these conditions are likely to be most directly affected by the accessibility of long term care. Those with less access to care homes are more likely to be discharged back to their home and to stay longer in hospital until a care home place becomes available or they have recovered sufficiently to be sent home (Bryan, et al 2006). The study has two primary research questions. First, we investigate whether, after controlling for clinical and non- clinical factors, access to long term care in nursing and residential homes (as measured by beds and prices) influences the probability of patients, aged 65 or over who were admitted from their home with hip fracture or stroke and who do not die in hospital, being discharged to a care home following hospitalization. Second, we investigate whether the supply of long term care influences their length of stay in hospital. The latter question can be interpreted as a test of the „bed-blocking" hypothesis: patients tend to stay longer in hospitals if they have to wait for a place to free up in a care home. Previous studies investigating the probability of patients being discharged into care home as opposed to their own home, following hospitalization, are summarized in Table 1. They find that age, gender and living arrangements were significant drivers of the probability of being discharged to a care home. Other drivers included comorbidities (Aharonoff, et al 2004; Gilbert, et al 2010), ethnicity (Aharonoff, et al 2004; Ellis and Trent, 2001), urbanization (Gilbert, et al 2010) and income deprivation (Gilbert, et al 2010; Picone, et al 2003). Patients with a longer length of stay were more likely to be discharged to a care home (Wong, et al 2010). Only two of the studies looked at the impact of the supply of residential and nursing beds on the probability of discharge to care. Picone et al (2003) investigate the simultaneous determinants of hospital length of stay and discharge destination of Medicare patients following a severe condition (hip fracture, stroke and heart attack). They show that both informal care (as measured by being married and number of children) and supply variables (e.g. available of beds) affect the probability of being discharged home and to nursing facility. Overall, they conclude that there is evidence of substitution effects between hospital care and post-hospital care. Bond et al (2000) conduct a study of 440 stroke and 572 hip fracture patients in six NHS hospitals and found the probability of being discharged to a care home increased with greater supply of residential and nursing beds. Although there is an extensive literature on the substitution between informal and formal long term care (Bonsang, 2009; Bolin, et al 2008; Van Houtven and Norton, 2004; Grabowski et al, 2012), there is only limited evidence on the effect of care homes supply on health care, i.e. the substitution between long term care and health care. Fernandez and Forder (2008) in a local authority level study, found that LAs with more home help hours, and nursing and residential care beds

had a lower rate of delayed discharge from hospital (for patients aged 75 and over) and lower emergency readmission rates. Forder (2009) used small-area data on 8000 census areas in England and found that an increase in spending on care homes by £1 generates a reduction in hospital expenditure by £0.35. Our study contributes to the literature on the substitution between long term care and health care. By using individual level patient data we are able to control more precisely for patient diagnoses and socio-economic characteristics than area level studies. We extend Bond et al (2000) by using a much larger sample of all patients in England, including a rich set of covariates, and including a range of measures of accessibility of social care supply (beds, price and quality rating), and drawing on additional clinical and socioeconomic characteristics.[8]

Justification of the study

- Average length of stay (ALOS) is the average number of days of service rendered to each patient during a given period.
- Long time hospital stays patient face higher costs for the hospitalization. On the other hand Increases the operating cost of hospital. Therefore cost is higher for both the patient and the hospital itself.
- Geriatric patients or older people are prone to suffer various diseases due to their low immune resistance. Long time hospitalization they are more vulnerable for the hospital nosocomial infection.
- This study was proposed to find out the ALOS of Geriatric patient selected hospital in Dhaka city.

Research question

What is the Average Length of Stay of Geriatric Patients in Selected Hospital in Dhaka City?

Research Objectives: General Objective

To assess the Average Length of Stay of Geriatric Patients in Selected Hospital in Dhaka City.

Specific Objectives

1. To find out Length of Stay in geriatric population.
2. To determine the factors influencing average length of hospital stay in the study population.
3. To describe the socio-demographic status of the study population.

Operational Definitions

Geriatric Patients

It is important to note the difference between geriatrics, the care of aged people, and gerontology, which is the study of the aging process itself. The term geriatrics comes from the Greek geron meaning "old man", and iatros meaning "healer". However, geriatrics is sometimes called medical gerontology. For this study patients of 60 years & above were taken as geriatric.

Referral

A patient who has been sent (referred) for a second opinion or therapy to a specialist or subspecialist, because the patient has a disease or condition that the primary or referring physician cannot, or does not wish to, treat. Or the process of directing or redirecting (as a medical case or a patient) to an appropriate specialist or agency for definitive treatment.

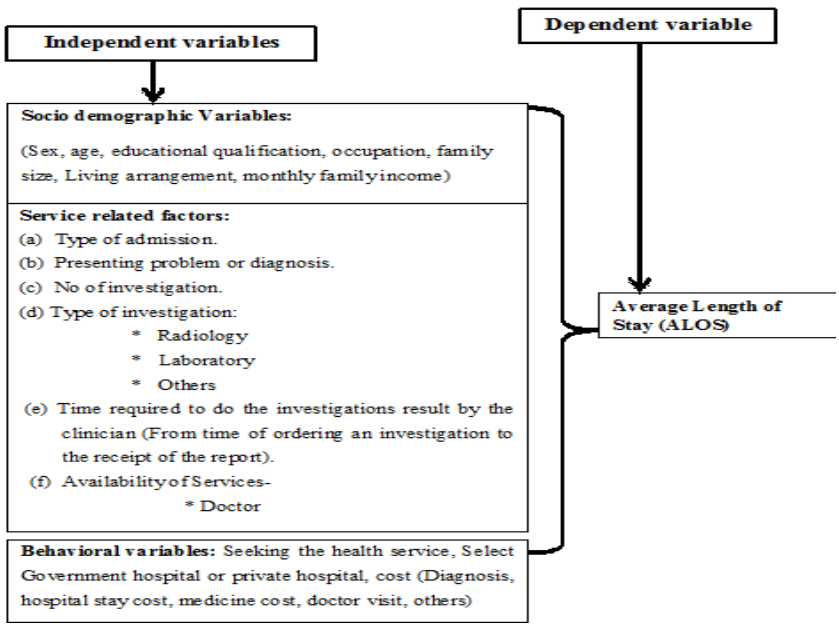
Average length of Stay (ALOS)

Average length of stay (ALOS) refers to the average number of days that patients spend in hospital. It is generally measured by dividing the total number of days stayed by all inpatients during a year by the number of admissions or discharges.

ALOS = Total no of bed days in study period

½ of (Discharge + Death + Admission) during same period.

Conceptual framework



Limitations of the study

- Difficulty was faced to collection of data because the study data collected from selected age group patients file.
- Additionally, the study was only concentrating the Government hospital not evaluating private hospitals in Dhaka city. Moreover a large number sample was required to cover all the hospitals at the Dhaka city all over country for justifying the outcome data of the study.

LITERATURE REVIEW

Nishat Nasrin, Muhammad Asaduzzaman, K.M. Al-Hasan Imam, et al. conducted study on Common geriatric disorders and their management in selected hospitals of Bangladesh in 2012, Bangladesh. This studies all the patients were aged over 65. The mean age of the patients was found to be 69 with a maximum of 99 years. Among the patients, 73% were male whereas 27% were female with a male: female ratio of almost 3:1. Majority (72%) of the patients had education below secondary level, followed by higher secondary (14%), secondary (13%) and only 1% had completed graduation and above. The majority (59%) of the patients were retired from work. With increasing age there is an increasing vulnerability to develop diseases and, in the elderly, there is a tendency to acquire multiple and chronic diseases. In the present study, 54% had multiple co-morbidities with 28% patients having two diseases and 23% having three diseases. A survey in Indonesia showed that 78% of elderly suffered up to 4 medical illness, 38% of them had more than 6 diseases and 13% suffered from more than 8 diseases. There are considerable differences between the East and the West in the prevalence of certain diseases in aged persons. In a study surveyed by Saks et al (2001), more than half of the elderly had hypertension (63.2%), musculoskeletal disorders (61.3%) and ischemic heart disease (56.5%). Other frequent diagnoses were heart failure (41.4%), depressive symptoms (40.3%), heart rhythm disorders (37.5%), hypercholesterolemia (25.4%), cognitive disorders (23.1%), and disorders of kidney and urinary tract (20.5%).10 In the present study, most common diseases include diabetes (41%), hypertension (39%), rheumatoid arthritis (13%), kidney disease (11%), skin diseases (9%), liver diseases (8%) and asthma (7%). The incidence of depressive illness and cognitive dysfunction was totally absent in our study. These types of diseases are more prevalent among the geriatric patients in the developed world. Such variations in disease pattern between the developed and developing countries may be due to socio-economic, demographic and environmental factors. In a study done by Kronish et al. (2006), it was

found that the most common medical co-morbidities included hypertension, dementia, osteoarthritis, depression, and diabetes. The most commonly clustered co-morbidities were hypertension and dementia (25%), hypertension and osteoarthritis (25%), dementia and osteoarthritis (21%), and osteoarthritis and depression (16%).13 We found diabetes, hypertension, kidney and liver diseases, rheumatoid arthritis and asthma as the most prevailing co-morbid situations. Diabetes and hypertension were the most commonly (17%) occurring diseases. Along with these two diseases, liver and kidney diseases, rheumatoid disease and asthma were reported in 8%, 5%, 5% and 2% cases, respectively. Lin and Armour (2004) reported that several co morbidities are more common and more complicated in older persons with diabetes14. These include depression,15 cognitive impairment,16 urinary incontinence,17 falls,18 and neuropathic pain.19 Elderly patients present with combination of non-specific, seemingly unrelated and apparently minor complaints. Sometimes they have no complaint at all.[1]

Peter Nordstrom, professor, Yngve Gustafson, professor, Karl Michaelsson, professor et al. conducted study on Length of hospital stay after hip fracture and short term risk of death after discharge. Accepted 2015 study in Sweden. The present study showed that a shorter length of hospital stay after hip fracture was associated with an increased risk of death within 30 days of hospital discharge in the Swedish population. This association seemed to increase over the seven years of follow-up as mean length of stay decreased by about 20%. The increased risk of death associated with short length of stay was not linear and was confined to patients with length of stay of 10 days or less throughout the study period. Our results suggest that the continuous efforts to decrease length of stay after major surgery in many countries is associated with higher mortality after hospital discharge.[2]

Agboado, G., Peters, J. et al. Factors influencing the length of hospital stay among patients resident in Blackpool admitted with COPD: a cross-sectional study. (2012). The average length of stay (ALOS) in hospitals is often used as an indicator of efficiency. Reducing the time spent in hospital reduces the cost per patient and allows more patients to be treated in a given period. Moreover, a shorter stay in hospital allows treatment to be shifted from expensive inpatient care to less expensive outpatient care. Thomas and Burke (2012) examine health policy in Ireland following austerity budgets in the wake of the economic and financial crisis and note that “efficiency gains have been a much vaunted policy tool”. The need to provide more services with less financial resources has led to the implementation of policies

designed at promoting shorter hospital stays and increasing outpatient appointments. The overall average length of stay is calculated by dividing total bed days by total inpatient discharges. In 2012 the overall ALOS in Irish hospitals was 5.7 days (versus a target of 5.6 days). The total number of inpatients for the year was 603,911 meaning 3.4 million hospital bed days were used. The potential benefits from reducing the average length of stay are significant. A reduction of one day in the overall ALOS could free up approximately 604,000 hospital bed-days allowing an additional 128,000 inpatients to be treated per year; a 21 percent increase in overall capacity.

In addition to looking at overall ALOS as a performance indicator, the HSE also records ALOS for medical patients; a subset of total inpatients requiring treatment from one of 23 medical specialties. The rational for using medical patient ALOS as a performance indicator is summarized by the HSE as follows.

"Length of stays for patients of medical specialties tend to be longer than other specialties and subsequent bed day usage of hospital bed stock tends to be greater. Therefore the monitoring of ALOS in medical patients is important and the overall figure is useful as a summary measure at national level." Medical patient ALOS in 2012 was 7.2 days. Despite being an improvement on the previous year‟s figure of 8.1 days, this falls short of the 5.8 day target. We gauge the efficiency of Irish hospitals by comparing ALOS in Ireland to other countries in the OECD. However the raw data may not be comparable across countries due to heterogeneity along two dimensions; the age structure of the population and the mix/severity of conditions treated. Older patients typically require more medical care and their ALOS tends to be higher than younger patients. In Ireland the ALOS for those aged 35-44 is 4.5 days compared to 8.7 days for those aged 65-74. In a UK study, Agboado et.al (2012) find the ALOS for people aged 80+ years is significantly longer than for those aged 40-59 years in relation to pulmonary disease related admissions.

We carry out an age demographic adjustment on the raw data to normalize each country‟s proportion of over 65‟s to the OECD average and thus make the data more comparable.

For example, the age adjusted data reflects Ireland‟s favorable age profile as the sixth youngest country in the OECD. After carrying out the age demographic adjustment Ireland has the tenth highest ALOS out of 34 OECD countries and the third highest in the EU (after Finland and the Slovak Republic.[3]

United State situation

Melissa Mattison, MD, SFHM etal conducted study on Hospital management of older adults in 2015.Patients 65 years and older represented 40 percent of hospitalized adults and nearly half of all healthcare dollars spent on hospitalization in 2008, but comprised less than 13 percent of the population in the United States. Individuals 85 years and older make up only 1.8 percent of the total population but account for 8 percent of all hospital discharges. Hospitalizations and healthcare spending for older adults are expected to rise as the population continues to age.

The leading non-obstetric diagnoses for adult inpatient stays are pneumonia and cardiovascular diseases, which are both highly prevalent in older adults. Older patients have a longer average length of stay (5.5 days for ages ≥65 years, compared with 5.0 days for ages 45 to 64 and 3.7 days for ages 15 to 44). With advancing age, patients tend to have more comorbid chronic illnesses and disability, making them more vulnerable during hospitalization to adverse events, including nosocomial complications and adverse drug reactions. While most younger patients are discharged to home, 40 percent of patients 85 years and older are discharged to a skilled nursing facility.[4]

While the number of hospital stays remained fairly stable from 1992 to 2013, the average length of stay in the hospital decreased steadily over time. In 1992, the average length of stay in the hospital for a Medicare beneficiary was 8.4 days; by 2013 the average length of stay had decreased to 5.3 days (Indicator 29: Use of Health Care Services). After adjusting for inflation, health care costs per capita increased slightly among those ages 65–74 between 1992 and 2012. In all years, average costs were substantially higher for those age 85 and over compared with those in the younger age groups (Indicator 30: Health Care Expenditures). Average prescription drug costs for noninstitutionalized Americans age 65 and over increased rapidly for many years but were relatively stable from 2005 to 2012. Medicare coverage of prescription drugs, which includes a low-income subsidy for beneficiaries with low income and assets, began in January 2006 (Indicator 31: Prescription Drug Costs). Enrollment in Medicare Advantage (MA)/Capitated Payment Plans has grown rapidly in recent years. In 2005, 16 percent of Medicare beneficiaries age 65 and over were enrolled in an MA plan, compared with 34 percent in 2013 (Indicator 32: Sources of Health Insurance). From 1977 to 2013, the percentage of household income that people age 65 and over allocated to out-of-pocket spending for health care services increased among those in the poor/near poor income

category from 12 percent to 17 percent (Indicator 33: Out-of-Pocket Health Care Expenditures). Medicare paid for almost 60 percent of all health care costs of enrollees age 65 and over in 2012. Medicare financed all hospice costs and most hospital, physician, home health care, and short-term institution costs (Indicator 34: Sources of Payment for Health Care Services). The number of veterans age 65 and over enrolled with the Veterans Health Administration has been steadily increasing since 1999, when eligibility for this benefit was reformed, and the number of veterans age 85 and over enrolled is projected to exceed 1 million by 2034 (Indicator 35: Veterans‟ Health Care).

In 2013, about 3 percent of the Medicare population age 65 and over resided in community housing with at least one service available. About 4 percent resided in long-term care facilities. Among those age 85 and over, 8 percent resided in community housing with services, and 15 percent resided in long-term care facilities. Among those ages 65–74, about 98 percent resided in traditional community settings (Indicator 36: Residential Services). In 2013, about two-thirds of people who had difficulty with one or more activities of daily living (ADLs) received personal assistance or used special equipment: 7 percent received personal assistance only, 35 percent used equipment only, and 25 percent used both personal assistance and equipment (Indicator 37: Personal Assistance and Equipment). In 2014, about 1.2 million people age 65 and over were residents of nursing homes. Nearly 780,000 people of that age lived in residential care communities such as assisted living facilities. In both settings, people age 85 and over were the largest age group among residents (Indicator 38: Long-Term Care Providers).[5]

James Gaughan, Hugh Gravelle, Rita Santos, Luigi Siciliani. Conducted study on Long term care provision, hospital length of stay and discharge destination for hip fracture and stroke patients. 2013 in UK. The probability of being discharged to a care home is greater for patients who are older, female, and have more diagnoses. Patients who are 75-84 years old and are older than 85 years have 6.2 and 11.4 percentage points higher probabilities of being discharged to a care home. Men have a 1.6 percentage points smaller probability of being discharged to a care home. Patients with more procedures and secondary diagnoses have a higher probability of being discharged to care. An additional diagnosis and procedure increases the probability by 1 and 0.5 percentage points. Patients with Charlson comorbidities have 1-2 percentage points higher probabilities of being discharged to a care home. Patients in the fifth most income deprived quintile have 1.3 percentage points lower probability

(though this is statistically significant only at 10% level). Patients living in LSOAs with greater supply of care home beds within 10km from their residence are generally more likely to be discharged to a care home. Compared to patients in LSOAs in the lowest quintile of beds within 10km, the probability of being discharged to care for patients in LSOAs in the third, fourth and fifth beds quintiles was 2, 2.5, and 4 percentage points higher (though this is statistically significant at 10% level for the third and fifth quintile only, with a p-value of 0.12 on the coefficient on the fourth quintile). The price of care homes or the quality rating of care homes has no effect on the probability of being discharged to a care home. When hospitals‟ fixed effects are not included, higher availability of long-term care is positively associated with the probability of being discharged to care for both hip fracture and stroke patients. The coefficients are generally quantitatively larger compared to the fixed effects specification. This stronger beds gradient is generated by variations of beds across hospitals rather than within hospitals. The inclusion of hospitals‟ fixed effects removes any effect that is due to systematic differences in long-term care beds availability across hospitals. The results therefore suggest that hospitals with higher availability of long-term beds are characterized by patients with a higher probability of being discharged to care. With no hospital fixed effects, hip fracture patients in the higher quintiles have generally a higher probability of being discharged to care compared to those in the lowest price quintile. This is counter-intuitive since we would expect higher prices to deter access to care homes.

We prefer specifications with hospital fixed effects because they test for associations between prices and discharge destination across patients in each hospital who are more likely to be homogenous with respect to unobserved factors. Taking the result at face value, it is possible explanation is that price is correlated with quality, with care homes with lowest prices also providing lowest quality of care that patients would try to avoid. We measure quality by CQC ratings but these are aggregated measures and there may be other dimensions of quality that remain unobservable. Since length of stay, our key dependent variable, is transformed with the natural logarithm, coefficients can be interpreted as the proportionate change in length of stay in days from a one unit increase in the explanatory variable. Older patients have longer length of stay. Among patients discharged to care, patients who are 75- 84 years old and older than 85 years have respectively 6.5% and 12% longer stays. For patients discharged home, older patients stay respectively 21% and 32% longer. Male patients have 6% longer length of stay if they are discharged to care. There are no differences by gender for patients discharged home. Patients stay longer in hospital if they have more procedures, irrespective of their

discharge destination. An additional procedure increases length of stay by 8%. One additional diagnosis increases length of stay by 6.7% for patients discharged to care but there is no effect on patients discharged home. Patients who are transferred to a different hospital have an 80% longer length of stay. Surprisingly, patients with Charlson comorbidities have a shorter length of stay. Patients living in villages and sparsely populated areas have 10% (5%) shorter stays than those living in urban areas if they are discharged to care (home). Patients from the fifth most income deprived quintile have 7.5% longer length of stay when the patient is discharged home. Patients have generally a longer stay if they are discharged on a Monday than any other day of the week. This is likely to be due to the smaller probability of being discharged during the weekend. The accessibility of long term care beds affects length of stay for hip fracture patients who are discharged to a care home: patients in LSOAs in higher quintiles of long-term care beds within 10km have shorter hospital lengths of stay. Those in the top two quintiles have a length of stay which is 22% and 32% shorter than those in the bottom beds quintile, a difference is which is both quantitatively large and statistically significant. There is no effect of beds supply on length of stay for patients discharged home. There is some indication that patients in areas with higher care home prices also stay longer, though the effect of price is only significant at 10% for the two highest price quintiles. Patients in LSOAs in the top price quintiles have longer length of stay by about 16-17% if discharged to care. Thus greater accessibility in terms of lower prices of long term care reduces hospital length of stay. There is a negative association of price and length of stay but only at the second and third quintile if the patient is discharged home. The effect is about 2-3% and therefore substantially smaller in magnitude. Variations in quality of long term care provision, as peroxide by quality reports, do not affect length of stay. In summary, the analysis suggests that higher accessibility of long-term care in terms of more beds and lower prices are associated with shorter length of stay. Patients who are 75-84 years old and are older than 85 years have respectively a 5.4 and 13 percentage points higher probability of being discharged to a care home. Men have a 4 percentage points smaller probability of being discharged to a care home. An additional diagnosis and procedure increase the probability by respectively 1.8 and 0.2 percentage points. Patients who were transferred to a different hospital have a 3 percentage points higher probability. Compared to patients whose stroke is caused by cerebral infarction, the probability of discharge to care is 1.4 percentage points higher if stroke is caused by hemorrhage. It is 2 percentage points smaller when the stroke is unspecified and 1 percentage point smaller if other forms of stroke are diagnosed but unspecified. Charlson comorbidities do not have an effect on the probability of being

discharged to care. Patients in the fifth most income deprived quintile have a probability of being discharged to a care home which is 1.2 percentage points smaller. Greater accessibility of long term care, either in terms of greater beds supply or lower price, is not associated with the probability of being discharged to care. Unlike hip fracture patients, the probability of stroke patients being discharged to care does not seem to respond to supply variables and seems to be driven only by clinical factors. When hospital fixed effects are excluded from the linear probability model the availability of beds is generally positively associated with probability of being discharged to care (with statistically significant coefficients at the 5% level for three of the four beds quintiles). The price is still not significantly associated with probability of being discharged to care in models without hospital fixed effects. patients who are 75-84 years old and older than 85 years have respectively a shorter length of stay by 7.3% and 22% longer stay. In contrast, among patients discharged home, length of stay increases with age (respectively 16% and 32% longer for patients who are 75-84 years old and older than 85 years). Male patients have a longer stay if they are discharged to care (by 2%) and a shorter stay if discharged home (by 15%). Patients stay longer in hospital if they have more diagnoses and procedures, irrespective of their discharge destination. An additional procedure increases length of stay by respectively 5% and 10% if discharged to care and to home. One additional diagnosis increases length of stay by respectively 7% and 12% for patients discharged to care and discharged home. Transferred patients have a longer length of stay of 51% if discharged to care and of 90% if discharged home. As with hip fracture cases, patients with Charlson comorbidities have a shorter length of stay by respectively 12% and 7% if discharged to care and discharged to home. Patients living in villages or remote areas have similar length of stay to those living in urban areas if they are discharged to care. Patients from the fifth most income deprived quintile have 4.3% longer length of stay when the patient is discharged home. Compared to patients whose stroke is caused by cerebral infarction, length of stay is shorter when the cause of stroke is unspecified, by 8% when the patient is discharged to care and 20% when discharged home. It is 50% and 67% shorter if other forms of stroke are diagnosed but unspecified. Patients have a longer length of stay if discharged on a Monday. Among patients discharged to care, there is a clear gradient in the effect of long term care beds supply with those in higher quintiles having shorter lengths of stay. Patients residing in LSOAs in the top beds quintile have a length of stay which is 20% shorter than those in the bottom beds quintile. However, the effects are only statistically significant at 10% for the highest beds quintile. Greater long term care beds availability also reduces length of stay also for stroke patients discharged home with a coefficient of 21% at

the highest quintile. This is, on the face of it, surprising since we would not expect beds supply to affect hospital length of stay of patients discharged home. Note, however, that since the length of stay for patients discharged to care is about three times the length of stay of those discharged home, a 20% effect on the first group implies a much larger effect in terms of reduced number of days in hospital than for the second group. Variations in prices and quality reports do not generally have an effect on length of stay for stroke patients, whether they are discharged home or to a care home. Again, hospital fixed effects play an important role. When these are excluded the beds and price variables are never statistically significant as 10% level, while the clinical variables remain qualitatively unaffected.[8]

MATERIAL AND METHODS

Study Design

The study was a Descriptive cross- sectional study designed to generate quantitative data regarding the influencing factors the government hospital in Dhaka city.

Study period & duration

The study was carried out for the duration of four months from January 2017 to April 2017.

Study Area

The study was conducted at selected hospital in Dhaka city.

Study Population

The study population case documents were taken who was of geriatric treated in selected hospital in Dhaka city.

Sampling Technique

Hospital was selected by the simple random sampling technique from available list of hospitals in DGHS. One medical ward was selected purposively. Patient‟s case documents of the selected ward fulfilling the selection criteria were included in the study.

Sample Size

All geriatric Case documents between study period was considered for sample size and first 300 documents were taken among 1226 patient‟s data who have discharged in January 2017 to March-2017 in study period among total 1972 admitted patients. Incompleted data were not taken.

Selection criteria

Inclusion

Case documents of Geriatric patients (age 60 years to above) who were discharged during past three months.

Exclusion

In complete case documents.

Research Instrument

Check List was prepared to collect data from hospital Record book, Register book information, Case documents according to the check list variables.(Sample check list attache as annexure).

Data Collection Method

Data were collected through check list from hospital Record book, Register book, Case documents.

Data management and analysis

- After data collection data were checked thoroughly for consistency and completeness.
- Data were edited and verified on daily basis to avoid any error.
- Data were entered in SPSS data sheet.
- SPSS (Statistical Package for Social Sciences) version 16 used to analyze the data.
- Simple frequency, percentage and appropriate statistical tools central tendency, cross tabulation had been used.

Average length of hospital stay was calculated following by formula:

$$\text{ALOS} = \frac{\sum \text{of Daily Census in 3 Months}}{\text{½ of (Admission+ Discharge + Death)}}$$

Ethical Consideration

- All ethical issues related to research was addressed according to the research ethics guidelines of State University of Bangladesh.
- Written & Verbal Informed consent from hospital authority had been taken before proceeding of the fulfill checked list.
- The hospital authority had been assured that collected data would remain anonymous and

be treated confidentially.

RESULTS

A descriptive cross-sectional study was conducted on Average length of Stay of Geriatric Patients in selected Hospital in Dhaka city. Total case document 300 Patients of the age group of 60 years to above. The others findings of the study are as follows:

Table 1: Distribution of patients by age groups (n=300).

Age Groups	Frequency (n)	Percentage (%)
(Minimum Age) 60 Years	55	18.3
61-65 Years	91	30.3
66-70 Years	86	28.7
71-75 Years	32	10.7
Above 75 Years	36	12.0
Total	300	100.0
Mean±SD = 68.22±8.020, 1, Min-60 years, Max*105 years		

Table- 1 Shows that out of a total 300 Patients, 18% (55) were found minimum age 60 years, 12% (36) were found maximum age above 75 years. There Mean 68.22 and Std. deviation 8.020.

Table 2: Distribution of patients by religion (n=300).

Religion	Frequency (n)	Percentage (%)
Islam	290	96.7
Hindu	10	3.3
Total	300	100.0

Table- 2 Shows that two main religions were observed. Among them, Muslims were most 290 (96.75%) followed by Hindus 10 (3.3%).

Table 3: Distribution of patients by occupation (n=300).

Occupation	Frequency (n)	Percentage (%)
Business	149	49.7
Private Service	15	5.0
Agriculture	12	4.0
Laborer	2	.7
Retired	122	40.7
Total	300	100.0

Table-3 Shows that most Patients were Businessman 149 (49.7%) followed by Retired 122 (40.7%), Private Service 15 (5.0%), Agriculture 12 (4.0%).

Table 4: Distribution of patients by mode of admission (n=300).

Mode of Admission	requency (n)	Percentage (%)
Emergency	262	87.3
OPD	37	12.3
Referral	1	.3
Total	300	100.0

Table – 4 shows that out of 300 Patients Mode of Emergency admission 262 (87.3%) followed by OPD admission 37 (12.3%), Referral 1 (.3%).

Table-5: Distribution of patients by patients history and initial complaints of admission.

Patients History/ Initials Complaints	Frequency (n)	Percentage (%)
Fever	67	22.3%
Weakness	95	31.7%
Head ace	18	6.0%
Unconsciousness	58	19.3%
Nausea & Vomiting	59	19.7%
Abdominal Pain	50	16.7%
CKD with CLD	24	8.0%
Stroke with LSHP	22	7.3%
Slurring Speech	36	12.0%
Myocardial Infraction	13	4.3%
Diabetes Mellitus	20	6.7%
Chest Pain	31	10.3%
Disorientation	26	8.7%
Breathlessness	35	11.7%
Hypertension	37	12.3%
Trauma, RTA & Injury	6	2.0%
Enlarged Prostate & Urology Cyst	10	3.3%
Plural Effusion	2	.7%
Bronchial Asthma	4	1.3%

Table-5 Shows that Maximum patients initial complaints weakness 95 (31.7 %), Fever 67 (22.3%), Unconsciousness 58 (19.3%), Hypertension 37 (12.3%), Slurring Speech 36 (12.0%), Breathlessness 35 (11.7%).

Table 6: Distribution of patients by investigation done after admission.

Investigation done after admission	Frequency (n)	Percentage (%)
Hematological Test	300	100.0%
Biochemical Test	300	100.0%
Microbiological test	6	2.0%
Immunological Test	4	1.3%
Clinical Pathological Test	13	4.3%
X-ray	80	26.7%
CT-Scan	26	8.7%
MRI	5	1.7%
Ultra sonogram	36	12.0%

Bone marrow density (BMD)	2	.7%
ECG	71	23.7%
Others	20	6.7%

Table-6 Shows that 100% patients had done Hematological and Biochemical test, 26.7% (80) patients had done X-ray report, 23.7% (71) patients had done ECG report, 12.0% (36) had done ultra sonogram and 8.7 % (26) patients had done CT-Scan report.

Table 7: Distribution of patients by total number of Investigations during the period of hospitalization. (n=300).

Number of Investigation	Frequency (n)	Percentage (%)
1-3 Test	270	90.0
4-6 Test	28	9.3
7-9 Test	2	.7
Total	300	100.0

Table-7 Shows that 90.0% patients had 1-3 test done during their stay in hospitalization followed by 9.3% had done 4-6 test and only. 7% had done more than 7 tests.

Table 8: Distribution of patients by final diagnosis during hospitalization. (n=300).

Final Diagnosis	Frequency (n)	Percentage (%)
Cardiac Disease	45	15.0%
Stroke with facial Palsy	13	4.3%
Fever with UTI	8	2.7%
CKD with COPD	17	5.6%
Old MI with Ischemic Stroke	8	2.6%
Peritonitis	3	1.0%
Acute Confusional State	54	18.0%
HTN with DM	40	13.3%
Stroke with RSHP	11	3.7%
Stroke with LSHP	19	6.3%
Kidney Disease with Oedema	28	9.3%
CKD with CLD	13	4.3%
Hemorrhagic Stroke	5	1.7%
Respiratory Failure	6	2.0%
Ischemic Stroke	10	3.3%
TURP (Transurethral resection of the prostate)	4	1.3%
Respiratory Distress Syndrome	15	5.0%
Anemia	1	.3%

Table-8 Shows that maximum patients diagnosis Cardiac Disease 45 (15.0%), HTN with DM 40 (13.3%), Kidney Disease with Oedema 28 (9.3%), Stroke with LSHP 19 (6.3%), CKD with COPD 17 (5.6%).

Table 9: Distribution of patients by time between Investigations and start treatment (n=300).

Time between Investigations to Start Treatment	Frequency (n)	Percentage (%)
1 Day	286	95.3
2 Days	11	3.7
3 Days	3	1.0
Total	300	100.0

Table-9 Shows that period of time between investigation done to start treatment 95.3% test done within 1 day followed by 3.7% done 2 days, 1.0% done 3 days time period.

Table 10: Distribution of patients by availability of consultancy service (n=300).

Availability of Consultancy Service	Frequency (n)	Percentage (%)
Yes	291	97.0
No	9	3.0
Total	300	100.0

Table-10 Shows that out of 300 Patients 97% were get availability of consultancy service.

Table 11: Distribution of patients by source and information about referral hospital.(n=300).

Referred from	Frequency (n)	Percentage (%)
Self	276	92.0
Physician	22	7.3
Private Hospital	2	.7
Total	300	100.0

Table-11 Shows that out of 300 Patients referred from self 276 (92%) followed by physician 22 (7.3%), private hospital 2 (.7%).

Table 12: Distribution of patients by discharge pattern (n=300).

Discharge Pattern	Frequency (n)	Percentage (%)
Discharge with Advise	244	81.3
DORB	27	9.0
Death	29	9.7
Total	300	100.0

Table-12 Shows that Maximum Patients were discharged with advise 244 (81.3%). However 27 (9%) were discharged with risk bond (DORB) and 29 (9.7%) patient died in hospital.

Table 13: Average daily census of month wise in selected ward.

Name of Month	Daily Census
January-2017	3851
February-2017	3527
March-2017	3742

Total =	**11120**

Table- 13 Shows that average daily census January-2017 (3851), Followed by February-2017 (3527), March-2017 (3742).

Table 14: Monthly Admission, Discharge, Death.

Name of Month	Admission	Discharge	Death
January-2017	744	430	28
Fearuary-2017	600	393	15
March-2017	628	403	38
Total=	**1972**	**1226**	**81**

Table- 14 shows that month of January to March 2017 Total admission (1972), Month of January to march 2017 total discharge (1226),), Month of January to march 2017 total death (81).

Calculation by using formula

$$ALOS = \frac{\sum \text{of Daily Census in 3 Months}}{\text{½ of (Admission+ Discharge + Death)}}$$

$$= \frac{11120}{\text{½ X 3279}} = \frac{11120}{1639.5} = 6.78 \text{ Days.}$$

Table-15: Distribution of patients by length of stay in hospital (LOS).

Length of Stay in Hospital (LOS)	Frequency (Number of patients) × Total Length of stay	Percentage (%)
1 Day	65 × 1 days = 65 days stay	21.7
2 Days	62 × 2 days = 124 days stay	20.7
3 Days	46 × 3 days = 138 days stay	15.3
4 Days	28 × 4 days = 112 days stay	9.3
5 Days	27 × 5 days = 135 days stay	9.0
6 Days	15 × 6 days = 90 days stay	5.0
7 Days	15 × 7 days = 105 days stay	5.0
8 Days	12 × 8 days = 96 days stay	4.0
9 Days	7 × 9 days = 63 days stay	2.3
10 Days	3 × 10 days = 30 days stay	1.0
11 Days	2 × 11 days = 22 days stay	.7
12 Days	4 × 12 days = 48 days stay	1.3
13 Days	4 × 13 days = 52 days stay	1.3
14 Days	2 × 14 days = 28 days stay	.7
15 Days	2 × 15 days = 30 days stay	.7
17 Days	1 × 17 days = 17 days stay	.3
18 Days	1× 18 days = 18 days stay	.3
19 Days	1 × 19 days = 19 days stay	.3

20 Days	1 × 20 days = 20 days stay	.3
22 Days	1 × 22 days = 22 days stay	.3
28 Days	1× 28 days = 28 days stay	.3
	Total patients = 300 Total Length of stay = 1262 Days	100.0

***This Table- shows Length of Stay in Hospital.

Total Patients discharged 1226 from study period January 2017 to March 2017 Selected medical ward. Collected 300 geriatric patients case documents from discharged file.

Formula

Average length of stay = Length of stay / Total number of patient

Here is, Total number of geriatric patients discharged = 300

Total length of stays geriatric patients = 1262 Days.

$$\text{So, ALOS of Geriatric patients} = \frac{1262}{300} = 4.20 \text{ days}$$

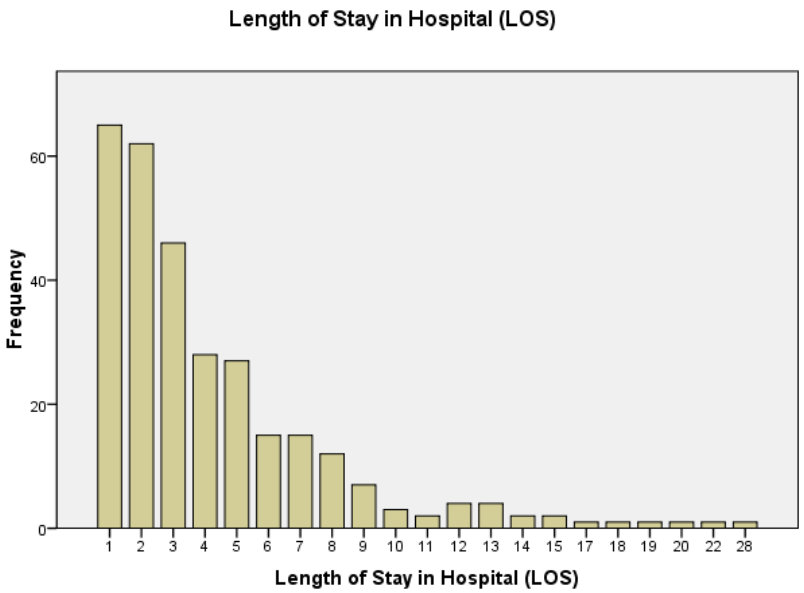


Figure 1: Length of Stay in Hospital.

DISCUSSION

A descriptive cross-sectional study was conducted in selected hospital in Dhaka city among Patients 300 with the age group of 60 years to above and the analysis showed a statistically significant relationship between each of the variables age, sex, religion, occupation and the service in hospital.

Results of current study indicated that mostly the geriatric peoples are more vulnerable get disease like Cardiovascular Disease 45 (15%). Kidney Disease 25 (8.3%), Hypertension with Diabetes 22 (7.3%), Stroke with facial Palsy 21 (7.0%), Stroke with LSHP 19 (6.3%), CKD with COPD 18 (6.0%), Hypertension 16 (5.3%), Respiratory Distress Syndrome 15(5.0%), Old MI with Ischemic Stroke 12 (4.0%), Ischemic Stroke 1(3.7%). And more common diagnosis is acute confusional state.

A retrospective case note review was done for all long-Stay patients under geriatric medicine service of a restructured hospital in Singapore from 1st April 2002 to 31st March 2003. Long-Stay patients were defined as those whose ALOS had notably exceeded the average LOS for the DRG best on principle admitting diagnosis. However the average LOS varied widely across the specialties. A Separate analysis was therefore required to determine the proportion of long- Stay patients in the respective specialties using specialty specific long-Stay markers.

For geriatric medicine service, the average LOS for geriatric medicine was 10.9 days the ALOS at the 25th, 50th, 75th, 90th and 95th percentile were 5, 8, 14, 22 and 29 days, respectively the specialty specific marker for geriatric medicine long-stay patients, by using the marker above, was 28 days.

To doctor from the department of geriatric medicine reviewed the case notes of all patients with ALOS of more than 28 days who were discharged from geriatric medicine service during the 1- year study period. Demographic profile, functional and cognitive status, past medical and social history, admitting medical diagnosis, discharge limiting factors and factors contributing to delay in discharge were captured.(SC Lim, V Doshi, B Castasus, JKH Lim, K Mamun. - Factors Causing Delay in Discharge of Patients in an Acute Care Hospital).[4]

A retrospective study was conducted the medical records of the 910 selected patients admitted to Department of Medicine and Geriatrics of a public-funded hospital in Hong Kong in 2007 the patients comprised three age groups: young old (60–69), mid-old (70–79), and old-old (80 and above), and most of them (90.1%) were in fair physical health status. Before the admission to the hospital, 636(69.9%) of them lived either by themselves, with spouse only, or with two or more generations; and only a small portion of patients (30.1%) lived in old age home. With regard to their mobility levels, 286 (32.3%) of them were either bed-bound or sitters; 448 (50.5%) needed companies of other people while walking; and the

remainders were able to walk independently. Of the 910 participants, 53.7% were totally dependent or severely dependent in ADL; 34.7% were moderately dependent; and 11.6% were only slightly dependent or totally independent. In addition, 111 of them (12.2%) used tube feeding; 476 (52.5%) of them were on soft or pureed diet; and around one-third of them were on normal diet. Concerning their cognitive function, 621 (68.6%) of them were categorized as alert while the remainders were either categorized as stupor, confused, or apathetic. The data show that 122 (13.4%) of the patients have been physically retrained during hospitalization. Hand holder was most frequently used, followed by safety vest, abdominal belt, bed rail, table top, seatbelt, and foot holder. 41.8% of the restrained patients were restrained by more than one type of restrainers. The average LOS of the older patients was 19 days. (Xue Bai, Timothy C.Y. Kwok, Isaac N. Ip, Jean Woo, Maria Y.P. Chui & Florence K.Y. Ho - Physical restraint use and older patients‟ length of hospital stay).[7]

CONCLUSION

The current study showed that the average length of hospital stay of geriatric patients is **4.20 days**.

- Results showed that patient‟s age were 60 years to above. Maximum patients suffering from Cardiac, Hypertension, Diabetes diseases etc.
- Geriatric patients more likely to stay longer as inpatients compared to younger once even after their acute medical problems have resolved there more prone to hospitalization-related complications like nosocomial infection, worsening function and cognition and depressed mode all of which may lead to further caregiver burden upon discharge.
- Changing needs of the patients from the above causes with changing social and caregiver arrangement may lead to increase in ALOS at acute care hospitals.
- Proactive management of hospital-related complications, early discharge planning with particular attention on the changing care needs of the patients and caregiver burden and better utilization of community resources like community hospitals and home health care services would further decrease ALOS of geriatric patients in acute care hospital.

Recommendations

On the basis of significant finding and concluding remarks, following recommendation are made:

1. Future studies on this subject can be conducted. Such studies may be replications which will focus on a different or larger sample size, another geographic area, consider other

discriminating variables that were not included in the current study and can attempt comparison with other government and private hospital facilities.

2. Though this study included patients of government hospital in one geographical area. It will provide an opportunity for overall improvement of healthcare facilities in government and public health department.

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