

Free demographic shift and morbidity trends in united states: implications for he...

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Demographic shift and morbidity trends in United States: Implications for health systems

Introduction

The proportion of population requiring different types of medical and health care services is a fundamental input for strategic health care planning. Moreover, the evolving demographic profile and relative burden of key morbidities in different age groups are important considerations in designing health care delivery systems. The ongoing demographic transition in developed countries is bringing about profound changes in their morbidity patterns with significant increases in burden of chronic ailments, diseases linked to aging and lifestyle-related disorders like obesity. The long term costs associated with treatment and rehabilitation support for an increasingly aging population is a serious constraint that requires adaption of health infrastructure, care delivery structures and new policy imperatives guiding resource allocations. It is in this light that increased emphasis on preventive interventions and new models of therapeutic and rehabilitative care are an inevitable requirement in most developed economies including the United States. This objective of this paper is to highlight the link between the disease trends and health care delivery systems and how both of these are intricately linked to the characteristics of the target population.

Aging

Age is an important variable that determines mortality, fertility, nuptiality and several other population health indices. Age structure of a population is important as social relationships within a community are considerably

affected by the relative numbers at each age. There are several methods by which age composition and demographic trends in a population can be understood. The most commonly used method is age distributions done in 5-year or 10-year age groups. To aid analysis total population is often also disaggregated into several mutually exclusive broad age groups. e. g. the U. S. Census Bureau publishes, among other things, age composition by following population groups: Under 5 years; 5-17 years; 18-44 years; 45-64 years and over 65 years age groups. Relative proportion of population numbers in various age groups and use of graphic tools like time series charts and population pyramids provide insights into the dynamics of population change and help planners in forecasting health needs. (Siegel & Shryock, 1976)

Demographic transition

Several factors contribute to changes in age distribution in a population. In developed countries, the demographic transition has been brought about by increasing life spans, reductions in fertility, mortality and the changing morbidity patterns from acute to chronic diseases arising due to control of communicable diseases. In addition to this, the post-World War II population cohort in the United States, commonly referred to as the ' baby boomers', has had a particularly significant impact on its age structure over successive decades. (Colby & Ortman, 2014) With the cohort currently entering its sixth decade of life, this phenomenon is going to continue to shape the U. S. demographic profile by progressively driving growth at the older ages of the population.

U. S. Census 2010

The most recent U. S. Census (2010) revealed a population increase of 9. 7% over the preceding decade. However, inter-decadal growth rate between the population less than 18 years and in the 18-44 years age group experienced a markedly lower growth rate (2. 6% and 0. 6% respectively) in comparison to the 45-64 age group (31. 5 %). Males aged 60 to 74 increased by 35. 2 percent while their female counterparts increased by 29. 2 percent showing a narrowing of the mortality gap between men and women at older ages. By the end of third decade of the twenty first century, it is projected that more than 20 percent of the total U. S. population will be over the age of 65 years. Furthermore, in the next four decades the population over 65 years is likely to exceed that of under-18 years group. (Colby & Ortman, 2014)

Implications for health care services

U. S. health care system is already adapting itself to the changing health care needs, a process that will need to become more responsive in the next two decades. With prolonging life spans, increased prevalence of chronic diseases and the rising need for geriatric services are likely to continue. Resource allocations and priority setting will need to prioritize chronic conditions (hypertension, heart diseases), degenerative diseases (rheumatism, arthritis, Alzheimer's disease), mental disorders (cognitive impairment, Parkinson's disease, senility), locomotor disabilities and injuries from falls, etc. (Berg & Cassells, 1992).

Planning for health services for elderly population will also necessitate strengthening of data collection mechanisms for relevant variables like

socio-economic status and social living conditions (living with spouses, living alone, with relatives or in old-age homes). Multiple medical disorders are a common occurrence in elderly and will necessitate development of summary measures of co-morbidity in addition to newer indices for research, e. g., by health state evaluation studies. Sustainability of resources for pension, health, and social insurance systems will continue to be an important ongoing imperative.

With an aging population there is also a renewed focus on quality of health care and the requirement of a shift from medical therapy oriented system to a behavior modification oriented approach is increasingly getting acknowledged. Development of community based systems of care and health service delivery in home settings will help deal with the patient's physical environment, e. g., by minimizing accidents and falls, preventing aggravation of disabilities and amelioration of climate-related morbidity. In this context, an increasing role of paramedical, ancillary and support staff will also help curtail costs in the long run. Health education, diet counseling, home visits to support treatment compliance, recognition of drug adverse effects and encouraging patient self-help groups are some of the other ways to optimize treatment and avert complications in chronically morbid senile conditions.

Obesity

Obesity is an important risk factor for several chronic diseases like Coronary Heart Disease, Type 2 Diabetes Mellitus, hypertension, and other conditions like, Osteoarthritis, certain malignancies (breasts, colon) and cerebro-

vascular disorders like Stroke. In 2011, heart disease and cancer accounted for approximately half of all deaths and both have causal linkages with obesity (Johnson et al, 2014). Recent studies have categorized close to 78 million adults and 12 million youths in the U. S. as obese (Ogden, Carroll, Kit & Flegal, 2014). However, in terms of recent temporal trend, obesity rates have largely remained at par with recent years, current prevalence being 35% and 17% in adults and youth, respectively. Nonetheless, the levels of physical activity among adults and school students continue to be abysmally low with only 21% of adults and 27. 1% of students classified as being physically active (minimum 60 minutes per day). Several environmental factors also contribute to unhealthy dietary behaviors (Khan et al, 2009). These include lack of healthy food options owing to cost or availability barriers and sub optimal access to safe sporting facilities and open spaces.

Controlling obesity

Pathogenesis of obesity is multi factorial and requires a multi pronged approach with an unequivocal emphasis on health education aimed at diet and behavior modifications. Primordial and primary prevention strategies will continue to be important in this respect. Treatment of obesity with drugs and weight-loss surgery has a certain role in treating extreme obesity due to co-morbid conditions. Regulatory and economic measures to facilitate adoption of healthy food choices, and an impetus on community owned recreation spaces and sports facilities are important means to reduce prevalence of obesity.

The Measures Project (The Common Community Measures for Obesity

Prevention Project) promoted by CDC is an example of the type of systematic and coordinated efforts that can help turn the tide of obesity over the coming decades (Berg & Cassells, 1992). Indeed, the stabilization of obesity trends in the last half a decade are attributable, in large part, to the heightened awareness resulting from such interventions.

The way forward

United States like most western countries is seeing tremendous challenges in delivering health care services that are efficient, appropriate, cost effective, and sustainable. Advances in medical technology have had a profound impact on life spans. Confronted with an increasingly aging population and a rising burden of chronic diseases, a paradigm shift in the organization and delivery of health care services is needed. Improved access to health care services will require enterprise as well as innovation. Some of the changes that this paper proposes include,

- An inter disciplinary approach to health care: Increased education and training opportunities for health, paramedical and allied sciences professionals in fields like home based palliative care, patient rehabilitation, physiotherapy, community based primary health care.
- Institutionalization of health and nutrition education as an integral part of health care services should continue to be strengthened to prevent complications of aging and obesity.
- Newer clinical decision support systems that aim to treat the whole patient and not just the disease. Incorporation of quality of life considerations should guide the choice of therapeutic modalities for the diseased elderly.

- An encouraging trend of peer-support structures like patient self-help groups bodes well for the future. There should be active promotion of such social mechanisms to support elderly population.
- Intelligent application of information technology, e. g., inclusion of variables relevant to geriatrics in the Electronic Health Records (co-morbidity, drug interactions, toxicity considerations, etc.) and improved data sharing across sectors and between levels of health care. Moreover, the rapidly advancing field of telemedicine is helping envisage new models of collaboration and continuity of care offering major cost curtailment and promotion of equitable access. With better patient monitoring and data collection systems the possibility of virtual hospitals is poised to become a reality in the near future.
- Role of Alternative Medicine: There is sufficient merit in facilitating availability of and access to complementary medical therapies which have a decidedly better safety profile and are sometimes preferable for treating chronic ailments and disability.
- Continuing studies to better delineate emerging disease trends and targeted research in models of care for elderly population is important.
- Policy regarding use of life support systems in terminally ill patients needs to be reviewed to deal with the likely increase in situations that require ethical considerations.

Conclusion

The burden of disease and the nature of health care needs in United States is undergoing a shift. In line with the ongoing trend, the next two decades will

see a further pronouncement in these changes. Increase in prevalence of chronic diseases due to increasing life expectancy and diseases linked to obesity will continue to account for a considerable proportion of health expenditure. New models of health care delivery and renewed focus on life style changes will help in dealing with this challenge. Evidence based strategies require ongoing research and improved data collection systems to guide resource allocation and evaluation of the current policies and strategies.

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