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POPULATION AGEING IN THE TWENTY-FIRST CENTURY AND ITS IMPLICATIONS FOR THE HEALTH SECTOR 1/

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In the twenty-first century, countries in the Asian-Pacific region will experience what is termed new demographics in this paper. A salient feature of it is the increasing longevity and ageing of population that will have vital implications for various sectors of the economy and society. Against this backdrop, this paper purports 1) to present the historical record and dilemma of policy makers, and 2) to point out specific long-term challenges of population ageing for the national health sector including further enhancing longevity, meeting human resources needs and training, and promoting policy-oriented research and a core database.

Historical Trend and Dilemma

Concern relating to population ageing arose as early as 1982 when the representatives of governments, international organizations and NGOs met in Vienna and adopted a plan of action to address ageing issues (United Nations, 1982). However, not much action was taken. This was true in particular for developing countries which, witnessing high rates of fertility and massive population growth, faced a dilemma and felt rather that population ageing was not a priority issue for the immediate future.

Table 1. World's Population Aged 60 and over, 1950-2050 (in millions).

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<tr>
<th></th>
<th>Number:</th>
<th>Increase:</th>
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<tbody>
<tr>
<td></td>
<td>1950</td>
<td>2000</td>
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<tr>
<td>World</td>
<td>204</td>
<td>606</td>
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<tr>
<td>Developed Countries</td>
<td>95</td>
<td>231</td>
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<td>Developing Countries</td>
<td>109</td>
<td>375</td>
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This dilemma still lingers on and is maintained by some, but demographic developments since 1982 have dramatically altered the real situation and the phenomenon called for renewed attention (see Table 1). Therefore, the United Nations took up the matter and the Second World Assembly on Population Ageing was convened in 2002 to address these very issues and emerging challenges ahead. The Assembly acknowledged the actual or expected growth in the number of older persons at a more rapid rate than the total population in numerous countries as a result of a steady and in some cases, a sharp decline in high fertility. Discussions at the Second World Assembly dispelled the notion that population ageing was a phenomenon facing only the developed countries and not relevant to the developing countries.

As shown in Table 1, at the beginning of the twenty-first century, the number of persons 60 years and over was about 231 million in developed countries and 375 million in developing countries (United Nations, 2000). In other words, about three-fifths of older persons already reside in the developing countries. Over the next 50 years, the population 60 and over would increase to 395 million in developed countries and to a size of 1.57 billion in the developing countries or four-fifths of the world’s older population. The growth would vary by specific country and represent two to three fold increase in this period. In India, the population aged 60 and over is projected to increase from about 75 million in 2000 to 330 million by 2050. China is expected to have 430 million and Asia as a whole about 1.2 billion by 2050.

Against this soaring trend, countries need to assess and formulate an action plan that takes into account specific aspects of population ageing and its present and future dimensions. To this end, the Second World Assembly adopted what is called the Madrid International Plan of Action on Ageing (MIPAA) laying out a series of recommendations in the following three main directions: a) older persons and development, b) advancing health and well-being, and c) enabling and support system for implementation in the twenty-first century by governments and other stakeholders (United Nations, 2002). However, a potential constraint in implementation is the limited financial resources available for the developing countries which means choosing priority items among the recommendations contained in the Madrid International Plan of Action on Ageing.

In this paper, implications (or challenges) for the health sector of a country are singled out as urgent in view of the lead-time required for implementing them. Some are set out below for discussion in the hope that such conferences/meetings help reach a consensus and guide policy-making at various levels.

**Mortality and Morbidity Perspective**

The mortality reduction, which is in part responsible for the ageing of population, may be viewed as consisting of two phases or layers. The first phase of reduction results from the control and eradication of infectious diseases like cholera, influenza, malaria, and tuberculosis. In the post Second World War period, these serious infections were brought under control and largely reduced with improvements in public health services, new discovery of drugs, and their availability at low cost in developing countries. As a
result, life expectancy at birth improved rapidly to reach a level of 60-65 years in numerous developing countries in Asia and other regions of the world. These countries might be considered to have by and large completed the first phase unless it is reversed in the future by the recurrence of infectious diseases and/or the spread of HIV/AIDS (Butler, 2002b).

Longevity increase beyond 60-65 years requires, according to past experiences of developed countries, the reduction in the second component or layer that is widely referred to as the **epidemiological revolution**. It is characterized by the increased share of diseases and deaths caused by non-communicable diseases (NCD) and the reduction thereof. According to the World Health Organization (WHO) figures, in 1990 about 50% of the burden of disease in developing countries was attributable to communicable diseases and around 27% to non-communicable diseases (WHO, 2002). By 2020, a very different picture is anticipated with about 43% of the burden of disease attributable to non-communicable diseases. Also, a sharp increase is indicated in the category of neuropsychiatric diseases, i.e., from 9% in 1990 to 14% by 2020.

**Implications for Health Services**

The aforementioned second phase of mortality transition is expected to be not as rapid as the first phase. Nevertheless, it will imply significant expenditures and changes in the health system and services in the health care system to cope with the rising longevity and older population as well as the changing family structure pointing to a diminution of its traditional support of the elderly. The exact nature of the transition is difficult to infer in the absence of adequate and detailed data particularly on morbidity and causes of mortality by sex in developing countries. This lack hinders a sound health policy and resource allocation in the coming decades.

Two scenarios (or models) of a future transition are foreseen. According to one scenario, the extended life is spent for most part with normal diseases of old ages and/or functional limitations (disability) that will imply and necessitates significant shifts in health care services and the health workforce at different skill levels. Health expenditures on technology and infrastructure facilities will need expansion in response to the rising number of older persons. The rise in expenditure will be difficult to avoid, as people like to live longer at all costs. As a result, the medical expenses will be borne by individuals and families even at great sacrifice, and by governments, or both. Consequently, the demands of older persons and in particular, of their families relating to adequate health care and insurance, plus financial aid or tax relief to families caring for the elderly will dominate public discussions and policy. In short, the most crucial issue of population ageing in the developing countries will lie in the manner in which the health resources are expanded and expenditures are allocated in the years to come.

According to the second scenario, the span of NCD and morbidity affecting individuals is compressed (or squeezed), occurring only during the very late life of individuals just before death (Fries, 2005). Obviously, this scenario is preferred not only on economic grounds but also more importantly for the reason of prolonged active and
healthy life with a great deal of independence and dignity. However, it represents a great challenge for governments/policy-makers on the one hand and on the other hand for individuals, families and communities. It also requires concerted action (long before reaching old age) with respect to nutrition, non-smoking, regular exercise, education and other measures of health promotion. This second scenario no doubt presents itself as the ideal or preferred situation but for now it will remain as the long-term goal of health policy while efforts are undertaken and constantly directed to health education and promotion of healthy practices in real life starting at very young ages. Additional factors such as lowering of poverty prevalence and rates of accidents at work and betterment of the environment will contribute positively over the long term to the second phase of mortality reduction.

**Health Manpower Needs and Training**

In the earlier part of the twenty-first century, however, the first scenario is very likely to prevail in most developing countries. It will imply an increase in NCD morbidity accompanied by disability, thus requiring expansion of hospital facilities and beds, modern innovation of equipment and treatment, and an increasing number of specialists and allied workforce. Medical school enrollment and specialization need to undergo structural transformation with the need of more cardiologists, urologists, oncologists, etc. In addition, the issue of health needs of older persons will call for fresh initiatives and development of a new cadre of allied and paramedical personnel like physiotherapists, social workers, care givers and so on.

Caring for older persons also requires a special body of knowledge and formal academic training (Butler, 2002a). Older people often have multiple medical conditions, both chronic and acute. In addition, they have symptoms that differ from those of young patients with the same illness. In developing countries, training of professionals including physicians working with older persons is limited or unavailable. This results in a lack of awareness on the part of health care providers about the specific diseases and problems related to older persons. This situation points to a strong and urgent need for expansion as well as multi-disciplinary orientation of geriatric and gerontology education in medical schools and other institutions of learning and research (ILC-USA, 1999).

Indeed, a long-term vision and strategy for human resources development to cope with population ageing is necessary. It will of course have to be based on an assessment of the requirements of health manpower over the long term taking into account the epidemiological transition discussed above and population ageing in all its dimensions, i.e., age sex composition, rural/urban distribution and others aspects, and focus on the following areas.

First, it should lay emphasis on **geriatric training** and in particular on creating a cadre of academic geriatricians (or training of trainers) who in turn will provide training to other physicians and para-medical personnel, nurses and social workers. It is important to note here that academic training initiatives require a very long lead time to convince the university authorities and medical boards to implement the new or enhanced schemes.
in terms of curriculum, enrollment and specialization. In parallel, specialized research in geriatrics and gerontology should be promoted by countries and, where appropriate, in cooperation with universities and other organizations like the International Longevity Centre-India, the International Institute for Population Sciences (IIPS) and so on.

In the second place, the strategy should consider other avenues of increasing skilled health personnel to fill the expected large gap. In developing countries, families and relatives are so far providing care. At a time when this type of care will diminish under small family size, increasing participation of women in labour force, migration and other family conditions, the need and demand for such care will soar high in the future. Residential care will remain the preferred option of the frail and disabled elderly. Therefore, along with the advanced professional training, basic training in the care of older persons is crucial and could cover all groups, i.e., volunteers, family members, community services staff, hospital personnel and the appropriate administrative staff.

This approach has several advantages. Most of the existing institutions of training are to be found in urban areas. This causes geographical deficiencies in providing training to the front-line staff in the rural and remote areas where a great number of older persons reside in developing countries. Also, as well known, the trained professionals are reluctant to go to work in rural areas. In recent years, several countries have applied innovative methods of training that may be followed by other countries, for instance, training of community gerontologists in the Philippines, training of home care and home help workers/volunteers in South Korea, India, and so on (Gokhale, 2002).

Also, some countries, for example, China, Vietnam and Thailand- have introduced training modules on ageing in education programmes to improve awareness regarding self health care among older people. Increasingly NGOs are also helping in education/training on issues relating to older people’s health and development. Internationally, the training offered over the past decade or more by the International Institute on Ageing in Malta was valuable to the developing countries (Fenech, 2002).

As part of the strategy, a third area of development should include consideration of use of traditional medicine as complementary or alternative to modern medicine to care for the elderly. Traditional medicine includes a number of systems such as traditional Chinese medicine, Ayurveda, Unani and Siddha in India, and similar systems of medicine present in China and other countries in Asia, Africa, and Latin America. In rural areas, use of traditional medicine is common and therefore would be a big help in meeting the emerging needs of expanding older populations at low cost compared to modern medicine which is costly and also not readily accessible. National health policy should also consider providing orientation/ training in geriatrics and gerontology to practitioners of traditional medicine.

The strategy should provide for continuous education and training of health professionals. To this end, the potential of distance education that is gaining ground in other fields should be explored for providing continuous education in geriatrics and gerontology to the trained health work force. Advances in information technology are yet
another area for exploration to expand education and training of health personnel at all levels and regions, particularly in large populous countries.

**Database and Research**

Information and statistics about population ageing is a new and evolving field. Efforts to establish, globally or regionally, a core body of needed information and standard tabulations are essential in building a uniform database on this subject. However, a large body of statistics should be country-specific and meet the requirements of the National Implementation Plan drawn up in the light of the Madrid International Plan of Action. Countries must therefore assign early a high priority to developing a programme of population ageing statistics and indicators at national as well as sub-national levels.

Some observations are made below highlighting requisite demographic and health statistics. Naturally, the data development activity should commence with a consideration of the scope of census data currently available, their usefulness to the proposed ageing database and ways of fully utilizing them at national, provincial and district level. In essence, the database should supply information by detailed age groups and sex and not only place the older population in a single broad group of 65+. Further, in addition to including selected existing tabulations disaggregated by detailed old ages and groups, efforts should be made to developing special and innovative tabulations that would be valuable to policy analysis. One set of such special tabulations may include, for instance, the number of households having one or more older persons. Such a tabulation will be useful a) in formulating ageing policy and programmes in view of the fact that households play a vital role by providing substantive care to a large proportion of older persons in all parts of the country. Moreover, this tabulation will be helpful in designing and conducting special surveys of older persons to obtain additional information and complement the census database on population ageing.

More importantly, a standard breakdown of the broad age group 65+ is recommended for all information-gathering agencies and their databases. Generally, statistics are collected according to well-defined questionnaire and sampling plans. But, now and then, critical information needed for policy-making is not collected or missing in some respects and consequently, one may have to be obtained from a combination of sources and estimates.

With respect to health statistics requirements (i.e., morbidity, mortality, disability etc.), the developing countries in general have a long way to go in building a reliable body of epidemiological information to formulate sound policies regarding the elderly. The development effort should begin or be revitalized with the focus on old age diseases by age, sex and type. To this end, the existing data collection vehicles- census and vital statistics, national sample surveys, ad hoc surveys, sample registration systems- may be explored to provide reliable information for the segment of older persons. The resulting database should, where appropriate, enable cohort analysis.
But the greatest attention should be given to the development of hospital statistics and other institutional statistics with reference to older persons. A general long-standing problem is the absence of uniformity (or harmonization) of data collected in different sources. While some diversity may be unavoidable so as to meet the specific legal or administrative requirements, a great deal of present diversity may point to a lack of attention to coordination among data collection agencies with respect particularly to concepts and/or classifications.

In this context, a Council on Population Ageing (Information and Statistics) is proposed to review the scope, technical aspects, and development of an appropriate database. The Council may start with the 2000 population and housing census, which would, in essence, also serve as the baseline database in the calculation of various indicators for monitoring the implementation of the Madrid International Plan of Action as well as the National Implementation Plan (Yu and Gnanasekaran, 2003). The Council should encourage future-oriented research and perspective studies, health projections, especially projections by causes of mortality to aid in health policy and planning.

**Conclusion**

Population ageing is a concern not just in developed countries. It is imminent and relevant at present to a number of developing countries. Specially, China and India, the two most populous countries in the world, are now the home of about 130 and 75 million older persons over 60 years respectively and together they account for one-third of the 600 million older people in the whole world in 2000. By 2050, the two countries will have an estimated 430 and 330 million respectively recording a tremendous growth in the first half of this century (United Nations, 2000).

The Second World Assembly had examined many issues surrounding population ageing around the world and adopted numerous recommendations to ensure a quality life for older persons. It is not immediately feasible for countries to implement each of the recommendations adopted by the Assembly. The developing countries are faced with a number of critical issues and therefore, need to identify priority actions in a given period, taking into account the national circumstances, stage of development and above all, available resources.

In a sense, the population ageing will have most serious implications for the health sector as a whole and must therefore be given foremost priority in the national implementation strategy reflecting the Madrid International Plan of Action on Ageing. Deficiencies in the level of services, massive shortfalls in trained personnel at all levels to care for the elderly, and training as well as infrastructure requirements would need early attention by policy makers. Some countries may be hard pressed for financing even these priority requirements and therefore, development agencies, international and national, should come forward to aid them.

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2/ The author was an alumnus of IIPS and, after retirement from the United Nations, he served as consultant to the International Longevity Center-USA and other organizations.

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