

HOW COULD HOSPITALS ACT IN AN AGEING SOCIETY?

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The demographic changes are of great importance for all European societies. Their impact and effects have multiple, deep facets. Each European healthcare and welfare system will be facing considerable changes in the new demographic context. The hospital sector plays an important role in each health system. This paper focuses on the impact of the demographic changes on hospitals, presents and analyzes statistical data for the German hospitals sector in order to underline the importance of the older age groups for the number of the hospital inpatient cases, the provided range of medical services and disciplines and for the hospital disease costs. The paper also reveals main findings from 30 interviews conducted in 2010 with German health experts (from hospitals, health insurance companies, universities, institutes and regional healthcare policy makers) that accepted to answer questions referring to the demographic impact on the German healthcare system and hospital sector. The results of the interviews show that hospitals will have to act and react to the demographic changes. German hospitals might play different roles in the healthcare service provision for older people when engaging in new models of integrated care that will have to be developed. Processes, structures, human resources expertise, hospital service provision and medical departments will undergo major changes in response to the demographic challenges. Networks, centres of excellence for older persons and integrated care will probably be indispensable structures of the German healthcare system in the future. Strategic partnerships with pre- and post-hospital healthcare service providers are considered to be top priorities for German hospitals when facing the demographic challenge. Central case management and process optimization can be essential factors of success in the hospital care of the older, multimorbid patients. Acute geriatric medicine will be a main quality feature for the hospital care of older patients not only in the German healthcare system.

Keywords: hospital care, ageing society, hospitalized elderly patients, demographic challenge, expert interviews.

JEL Classification Codes: I11, J11, M10.

I. Introduction

The demographic changes and their impact on society, on economic, healthcare and social systems have become the topics of an increasing number of publications in many European countries. Since the beginning of the third millennium there also have been many important contributions from the Commission of the European Communities, the European Parliament, the Council of the European Union, the European Economic and Social Committee etc. regarding the demographic changes and their multiple, complex effects. One of these contributions was the *Communication* from the Commission of the European Communities (2001: 4) referring to *the future of the health care and care of the elderly* in the European Union under following conditions: “[...] access to health care for all, a high level of quality in health care and [...] financial viability of health care systems”. Other activities of great importance (for the present and future demographic situation) have been referring amongst others to the “*common commitment by the Member States to combat neurodegenerative Diseases, particularly Alzheimer’s*” (Council of the European Union 2008a) and the “*public health strategies to combat neurodegenerative diseases associated with ageing and in particular Alzheimer’s disease*”

(Council of the European Union 2008b). In a recent, very important contribution, the European Economic and Social Committee (2010) pointed in detail at the amplitude of the demographic effect on healthcare and welfare systems in their recommendations meant to promote healthy ageing at both national and European level. Main aspects underlined by the European Economic and Social Committee refer amongst others to the necessity for “financial sustainability” of the welfare and healthcare systems, for developing “patient-centred”, “integrated” and “personalized” healthcare services and also for more intensive human resources training in geriatric medicine, and thus in the age-specific healthcare problems and needs of the older population (European Economic and Social Committee 2010: 5-6, 10); the Committee also grants local networks a major role in ensuring the coordination of the service provision for the older people in the future (European Economic and Social Committee 2010: 10-11). The demographic impact on the health care system has many facets and describes many changes. For example, there is a large body of studies revealing the benefits of geriatric medicine; in this context, the “European silver paper” published by Cruz-Jentoft et al. (2009: 54-55) recommends that *specialist geriatric care should be available for all hospitalized older people in Europe*. The hospital sector plays a very important role in every health care system, so that this paper focuses on illustrating and analyzing possible (realistic) future scenarios for hospitals when facing the demographic challenges. These scenarios represent future developments for German hospitals as expected and illustrated by 30 German health experts. Statistical data is presented to underline the importance and amplitude of this topic before the main findings from the expert interviews are being revealed.

II. Selected data on German hospitals

The latest diagnosis data for discharged (hospital) inpatients provided for Germany by the Federal Statistical Office (Statistisches Bundesamt 2011) show that the age group 65+ years accounted for about 43% (44%) of all hospital primary diagnoses (of the cumulated diagnosis group of *Diseases, injuries and poisoning*), whereas the age group 70+ years accounted for 34% (35%). Combining population with hospital diagnosis data for the year 2008 (as in figure 1 presented), one can notice that (when not considering the age group less than 1 year) only the older age groups (beginning with the age group 60-65 years) determined disproportionately high numbers of inpatient cases (as represented by the cumulated number of all inpatient diagnoses); the percentages of the number of the discharged (hospital) inpatients in the older age groups (in the total number of discharged hospital inpatients) were even up to 3 times higher (for the age groups 85-90, 90-95 years) than the percentages of the population of these age groups in the total German population.

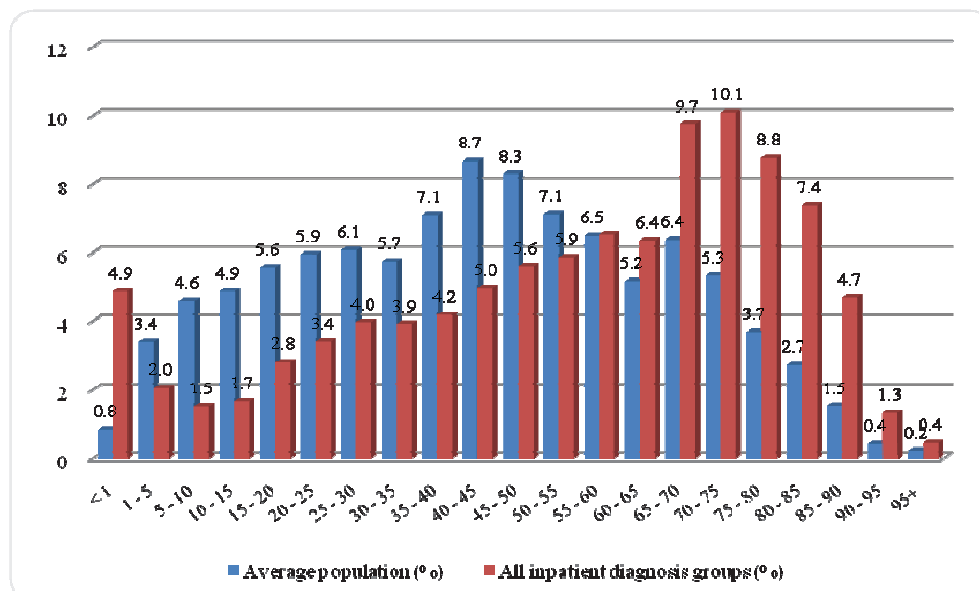


Figure 1: The percentage of the age groups in all inpatient diagnosis groups and total average population in Germany - 2008

Source: author's own calculations based on the available statistical data from Statistisches Bundesamt (2009, 2010b): diagnosis data – Statistisches Bundesamt 2009: Worksheet 2.1.1.1; demographic data – Statistisches Bundesamt 2010b: 44.
Explanation: age group $x - y$ implies at least x years and less than y years.

Computations based on the hospital primary diagnosis statistics (Statistisches Bundesamt 2009, 2011) show that compared to 2008, in 2009 the number of the discharged inpatients increased by 1.6% in Germany, whereas the age group 70+ years accounted for almost 90% of this percentage growth. The association between the number of hospitalizations for specific groups of population and the hospital disease costs provided by the Federal Statistical Office (Statistisches Bundesamt 2010a: Worksheet 5.4) shows that 42% of the total discharged inpatients (representing the age group 65+) accounted for almost 49% of the total hospital disease costs. Comparing the hospital disease costs for the years 2006 and 2008 (Statistisches Bundesamt 2010a: Worksheets 4.4, 5.4), one can notice that the age group 65+ years contributed with 107% to the percentage growth (of 4.8%) of the hospital disease costs in 2008 (and the hospital disease costs decreased for the age groups 15-30, 30-45 years); further calculations based on the statistical data provided by Federal Statistical Office (Statistisches Bundesamt 2010a: Worksheets 4.4, 5.4) show that the hospital disease costs accounted for about 26% of the total disease costs in 2008 and their increase (in 2008 compared to 2006) contributed with 17% to the percentage growth (of 7.5%) of the total disease costs.

Table 1: Age-specific number of inpatient hospital cases per 1000 inhabitants in Germany - 2008

Selected Diagnosis Groups		All Age Groups	<1 Year	1-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90	90-95	95+
A00-T98	Diseases, injuries and poisoning	211	548	130	71	74	109	124	142	148	128	124	146	178	218	267	331	411	516	591	669	700	439
C00-D48	Neoplasms	23	7	4	2	2	3	3	4	5	8	12	18	24	33	46	58	64	66	59	49	37	19
E00-E90	Endocrine, nutritional and metabolic diseases	6	3	1	2	2	2	1	2	2	3	3	4	5	7	8	10	13	17	22	31	39	26
F00-F99	Mental and behavioural disorders	14	2	2	3	7	15	16	16	16	16	18	19	18	14	11	10	10	12	16	19	19	13
G00-G99	Diseases of the nervous system	8	7	4	4	4	4	4	4	4	5	6	7	9	10	12	14	17	21	23	25	22	11

Selected Diagnosis Groups		All Age Groups	< 1 Year	1 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95+
I00-I99	Diseases of the circulatory system	33	2	1	1	2	2	3	3	4	6	10	16	24	37	52	71	98	131	153	175	177	103
J00-J99	Diseases of the respiratory system	13	66	41	14	6	10	8	7	7	6	6	6	8	10	12	16	20	29	38	47	61	43
K00-K93	Diseases of the digestive system	22	20	6	6	11	14	12	11	12	13	15	18	21	25	29	34	41	52	61	71	75	49
M00-M99	Diseases of the musculoskeletal system and connective tissue	19	1	2	2	4	6	5	6	8	11	14	18	23	30	34	40	47	51	43	34	23	10
N00-N99	Diseases of the genitourinary system	12	10	3	2	2	6	7	7	8	8	9	10	11	12	15	19	23	28	30	33	34	21
R00-R99	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	9	22	6	5	8	8	6	5	5	5	5	6	7	8	10	12	16	22	29	35	36	21
S00-T98	Injury, poisoning and certain other consequences of external causes	21	32	22	15	16	21	17	13	12	12	13	14	16	18	21	25	31	45	65	92	119	88

Source: table structure (diagnosis groups, age groups) adapted from Statistisches Bundesamt (2009): Worksheet 2.1.1.1; data in table 1 represent author's own calculations based on the available statistical data from Statistisches Bundesamt (2009, 2010b): diagnosis data – Statistisches Bundesamt 2009: Worksheet 2.1.1.1; demographic data – Statistisches Bundesamt 2010b: 44.
Explanation: age group $x - y$ implies at least x years and less than y years.

Analyzing the data from table 1, one can notice the high values of the age-specific number of inpatient hospital cases for *diseases, injuries and poisoning* per 1000 inhabitants in the older age groups; the age-related profile of the number of inpatient hospital cases per 1000 inhabitants (per age group) presents a continuously (remarkably) rising slope beginning with the age group 60-65 years and ending with the age group 90-95 years. The higher age groups (65+ years) are characterized by high(er) age-specific number of (discharged) inpatient hospital cases (per 1000 inhabitants) of diseases of the circulatory system, of the digestive system, of the respiratory system, of the musculoskeletal system and connective tissue, of injuries, poisoning and certain other consequences of external causes (when not taking into consideration the first two age groups) etc. Calculations based on the available statistical data (Statistisches Bundesamt 2010a: Worksheet 5.3) show that in 2008 the highest hospital disease costs were generated by the diseases of the circulatory system (18.4% of the total hospital disease costs), followed by neoplasms (13.5%), mental and behavioural disorders (11.1%), diseases of the musculoskeletal system and connective tissue (10.1%), injury, poisoning and certain other consequences of external causes (10%) and by diseases of the digestive system (8.6%) etc. The analysis has so far underlined the importance of the older age groups for German hospitals (in terms of number of discharged inpatients and disease costs) and some of the age-related diagnosis groups which are expected to grow in the future as direct consequence of the demographic changes. In addition, the expert interviews will reveal future scenarios for the German hospital sector facing the multiple facets of the demographic challenge.

III. How are health experts estimating the impact of the demographic challenge?

With the support of the top management of the German hospital Klinikum Ingolstadt, 30 German health experts (in management positions of non-profit, private and public hospitals and clinics, including also networks of such institutions, experts in health economics from German universities, experts from institutes and health insurance companies and regional healthcare policy makers) accepted in 2010 to answer specific questions referring to the demographic challenge and impact on the German healthcare system, especially on the hospital sector. The main findings of these interviews which are to be presented in the following concentrate mainly on main developments in the German hospitals as expected by experts in the changing demographic context. The multiple facets of the demographic challenge for the German healthcare system (as resulting from the conducted expert interviews) will affect also hospitals considerably (and they already do). The experts have mentioned amongst others following priorities for hospitals from the perspective of the demographic changes: closer networking with the out-patient healthcare sector, completion of strategic partnerships with pre- and post-hospital

care facilities, increase / improvement of the old age medical expertise of the hospital personnel, adaptation and optimization of the hospital admission process, adaptation of the hospital structures to the needs and problems of the older, multimorbid patients and cross-sectoral case management. Experts consider that networks and centres of excellence for older people will represent indispensable structures with precise task sharing and governance in the future of the German health system – hospitals will also have a clear role in these new healthcare structures. A higher degree of cooperation between hospitals and nursing homes, rehabilitation facilities and other post-hospital care service providers is expected to be achieved in the context of a more intensive focus of the German health care system on preventive measures and out-patient healthcare services and of a more intensive connection between the different sectors of the healthcare system. Some experts mention structural changes that would aim at the avoidance of (unnecessary) hospitalizations of older persons especially at the interface between nursing homes / rehabilitation facilities and hospitals. A concrete example refers to the health care service provision for the older persons in nursing homes that could be ensured by a special nursing home physician (as integral part of these facilities). The interviews have also revealed the fact that experts consider that hospital admission criteria will become stricter and more accurate; at the same time it could be expected that the control of the necessity for inpatient treatment would become more intensive. Most of them also emphasize the need for hospitals to concentrate more on the specific needs and problems of the older persons when deciding about their process structure, service activities and offerings, hospital architecture, service provision and human resources expertise. With regard to the hospital process structure, some of the experts point to the importance of the hospital admission process as it marks the beginning of the activity of the central case management and can influence considerably the hospital care- and post-hospital-pathway; geriatric screening and assessment are considered to be indispensable elements of the hospital admission process in order to guarantee an early detection of the geriatric patients and an evaluation of the age-specific health care needs and necessities; from the point of view of these experts, the hospital admission process is to be closely and tightly connected with the hospital discharge management in order to trigger the discharge preparation (including the post-hospitalization care) in due time and thus avoid delayed discharges and “bed-blocking”. Experts consider that the hospital processes must be designed and structured in a manner that ensures the optimization of the hospital length of stay of the older patients and must thus contain inter- and multidisciplinary structures and elements (including social care); more than else should hospital processes in ageing societies be transparent, accomplishable, well synchronised and adequate to the age-specific problems and needs. Transparency implies also on time availability of patient data and information, which plays a major role beginning with the hospital admission process (and often even before the hospital admission). The optimization of the hospital length of stay, continuity of care and avoidance of hospital readmissions imply (often) a tight cooperation and connection with post-hospital healthcare service providers; in this context the experts emphasize the need for more patient-centred, integrated (health)care. Experts also consider that new models of care have to be established and expect hospitals to engage themselves in these future healthcare structures (some of them especially for the healthcare of the older, multimorbid persons) – hospitals could be both partners and initiators in healthcare networking with service providers of other sectors of the German health system. Experts also have mentioned the strong belief that hospital processes will have to be more intensively accompanied by the hospital employees (and thus more labour intensive) due to the increased health care needs and problems of older, multimorbid and often chronically ill patients. As the DRG-system is not accounting for the differences regarding the labour intensity of physicians and nurses for older, multimorbid and younger patients, the demographic changes will determine an increased need for hospital personnel resources that is not additionally gratified. More than that, the present and future

situation on the labour market represents another problem for the hospitals. The demographic ageing of the population implies not only a higher number of older patients, but also more older employees; in this situation experts expect hospitals to develop adequate human resources development plans, innovative ideas for committing the personnel, the redefinition of labour division between the hospital professionals etc. In this setting, demographic-oriented human resources management should emphasize also the importance of team structures, broad qualification of the hospital employees, personnel training / formation in age-related diseases and characteristics and constant knowledge adaptation and transfer (age-relevant expertise). The need for more geriatric know-how and expertise (including high age healthcare characteristics, needs and problems for all hospital professionals) and for an increased deployment of physical therapists are considered to be self-evident by many experts, thus they have underlined the necessary financing (financial resources) of (for) the hospital personnel training and development and also for the higher labour intensity in the hospital service provision (generated for example by additional services provided by employees such as physician therapists). Many of these experts consider that the acute geriatric care represents an indispensable quality feature for the future hospital care of older persons. Experts have emphasized the fact that that hospitals without such departments will still have to guarantee and ensure the expertise for the hospital care of the older, multimorbid persons. The problem with the acute geriatric services in hospitals is their present financing in the DRG-system: there is no special gratification for hospital geriatric services except the gratification of the geriatric early rehabilitative complex treatment (integrated in a small number of DRGs), but the geriatric early rehabilitation represents only one part of the acute geriatric medicine. Under these circumstances German hospitals would provide the older, multimorbid patients with acute geriatric services with no additional financial resources. Other expectations from the acute geriatric medicine refer to benefits that would decrease the follow-up costs for the German health system (in terms of multiple, repeated investigations, medication, care costs etc.) The geriatric structures (for example the acute geriatric medicine departments in hospitals, out-patient geriatric services, geriatric day hospitals etc.) and expertise are still underdeveloped in some parts of Germany. A positive example supporting the development of acute geriatric departments can be seen in Bavaria, which enlarged its existing geriatric program with focus on geriatric rehabilitation by having adopted and implemented a new program for acute geriatric medicine, which contains quality requirements for the acute geriatric medicine departments in the Bavarian hospitals (Bayerisches Staatsministerium für Umwelt und Gesundheit 2009). Regarding the range of provided services (medical departments and disciplines), experts consider that hospitals will have to expand towards the age-related diseases and focus more and more on old age surgery and medicine. At the same time, the hospital service provision is expected to be characterized by a higher degree of care and sustainability. These are main findings from the interviews with the German health experts that show some of the complexity degree, amplitude and broadness of the demographic impact on German hospitals.

IV. Concluding remarks

The hospitals will be facing many challenges determined by the demographic changes. The statistical data and the main findings from the expert interviews show that hospitals will have to account more and more for the needs and problems of the older, often multimorbid patients. More than that, hospital processes and structures, the range of hospital services and medical departments, the expertise of the hospital employees will undergo considerable changes in response to the future demographic situation. Many of the findings are relevant not only for German hospitals, but generally for hospitals in ageing societies.

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