

II/Summer 2003

HEALTH SYSTEM WATCH

Supplement of the journal *Soziale Sicherheit (Social Security)* by the Institute for Advanced Studies/Institut für höhere Studien IHS HealthEcon, edited by the Hauptverband der österreichischen Sozialversicherungsträger (Federation of Austrian Social Security Institutions)



Resource consumption in the EU: Drug consumption pushes health expenditure growth

Focus: Per-case flat rates in the ambulatory care sector

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Resource consumption

In the EU the overall creation of value seems to go hand in hand with high expenditure on inpatient care. Nevertheless the growth of inpatient care expenditure has been curbed due to the reforms carried out in the course of the last decade, which were targeted to this very sector. Expenditure on ambulatory care grew below average throughout the EU. Austria is an exception, combining a high expenditure level and high growth rates. Still, private households' expenses on family physician and specialist care have shown the most considerable growth. Between 1990 and 2000 in almost all countries the expenditure on pharmaceuticals increased clearly sharper than the Gross Domestic Product, which brought about a considerable increase in the expenditure share. The Austrian pharmaceuticals market is characterised by particularly marked growth. It has to be pointed out, yet, that expenses on drugs are assumed to converge, which might lead to a further expenditure increase in Austria. The share of expenditures on pharmaceuticals in percent of total expenditure on health continues to be clearly below the EU average.

Per-case flat rates

Whereas at present per-case flat rates in the ambulatory care sector are rather rare they are planned to be introduced with specialist primary care providers in Germany. For the time being they are only applied in isolated cases and in quasi-hospital or hospital-near environments. In a German pilot experiment on selected surgical operations carried out in doctors offices only three in eleven types of surgery substituted inpatient procedures, and some of them were still performed in hospitals' outpatient departments. With only one single surgery type overall expenses (with practising physicians and hospitals) could be reduced. With certain surgery types expenditure even went up. These experiences show the difficulty in selecting medical operations and in laying down an incentive-based remuneration system. In Sweden the enlargement of the DRG scheme for outpatient departments has been prepared, but not implemented yet. In two Austrian states per-case flat rates are already being applied in hospitals' outpatient departments; due to the short time they have been used and due to the differences in data collection systems a steering effect induced by them could not be observed yet.

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Drug consumption pushes health expenditure growth

Inpatient care, outpatient care, pharmaceuticals and medical products utilise approximately three quarters of total EU health expenses. This chapter aims at analysing the growth dynamics of these expenditure components in the period between 1990 and 2000.

In the fields of pharmaceuticals and inpatient care more data are available than in other sectors. As for primary care, international data sets lack certain data, since in some EU states, including Austria, calculations do not (yet) follow the OECD standards¹.

The analysis presented here is therefore restricted to those EU countries that have complete data sets available. For Denmark, Germany, Finland, France, Italy and the Netherlands both time series and recent data are available. For Austria we computed the expenditure series from the data sources available². The table below depicts the expenditure components used for Austria, their shares in 2000 and the indices of the base years 1990 and 1995, respectively.

Table 1: Expenditure components in Austria in 2000

<i>Type of service</i>	<i>Nominal in Euro</i>	<i>shares</i>	<i>Index 1995=100</i>	<i>Index 1990=100</i>
Expenditure on inpatient care	7.238.874.700	-	117	165
Expenditure on outpatient care	5,021,391,140	100.0	123	187
Expenditure by health insurance providers	3,140,621,280	62.5	117	172
Physician care and equivalent services	2,457,716,765	48.9	120	177
Dental services	491,293,213	9.8	112	158
Dentures	191,611,302	3.8	100	157
Expenditure by private households	1,880,769,860	37.5	132	219
Physician services	972,667,929	19.4	139	231
Dental services	908,101,931	18.1	125	208
Expenditure on pharmaceuticals and medical products	3,040,949,878	100.0	157	230
Expenditure by health insurance providers*	2,170,794,968	71.4	176	257
(Prescription) drugs	1,968,056,147	64.7	179	275
Substitute remedies and medication	202,738,821	6.7	151	158
Expenditure by private households	870,154,910	28.6	123	182
Pharmaceutical products	504,361,123	16.6	121	170
Other medical products	81,604,054	2.7	157	220
Therapeutic appliances and equipment	284,189,733	9.3	120	198

* including 20 percent turnover tax since 1997.

Source: HVSU; Statistik Austria; IHS HealthEcon calculations 2003.

¹ Cf. also the discussion on the comparability of health expenditures presented in Health System Watch 1-2003 (www.ihs.ac.at) and the annexed tables A1 to A3. Note that tables A2 and A3 of the present issue contain only expenses on family physicians and on pharmaceuticals.

² Note that tables A2 and A3 of the present issue contain only expenses on family physicians and pharmaceuticals.

² All expenditure as published by Statistik Austria in April 2003 for the period between 1995 and 2002. For the period from 1990 to 1995 the health care expenditure data according to OECD Health Data 2002 were used.

The broad delineation agreed on by the OECD Secretariat turned out to be necessary, since data availability increases with the level of aggregation. Moreover it provides for comparisons between different countries. In 2000, 62 percent of the EU population lived in the seven countries selected (EU-7), generating 66 percent of the EU-wide GDP and consuming 71 percent of the EU-wide health care expenditure.

“High income” seems to cause inpatient expenditure...

The per-capita Gross Domestic Product (GDP) is a crude measure of a country's purchasing power and an appropriate yardstick for comparing health care expenses. In 2000 the weighted EU-7 average GDP – adjusted in terms of differences in purchasing power - amounted to US\$ 25,694. In table 2 the countries are ranked according to per-capita income. With the exception of France the richest countries turn out to register the highest expenses on inpatient care. Per-capita expenditure on inpatient care in Austria ranked fourth, while Austrian per-capita income ranked third, outperforming the weighted EU average by six percent, amounting to slightly more than US\$ 27,000.

Table 2: Gross Domestic Product and health care expenditure according to type of service, 2000

	<i>Per capita, US\$ PPP</i>								<i>In percent of GDP</i>		
	GDP	Rank	Inpatient care	Rank	Out-patient care	Rank	Medical products	Rank	Inpatient care	Out-patient care	Medical products
Denmark	29,050	1	1,294	1	609	2	281	7	4.5	2.1	1.0
Netherlands	27,675	2	1,105	2	331	7	333	5	4.0	1.2	1.2
Austria	27,151	3	950	4	659	1	399	4	3.5	2.4	1.5
Germany	25,936	4	855	6	545	4	519	2	3.3	2.1	2.0
Italy	25,206	5	860	5	602	3	459	3	3.4	2.4	1.8
Finland	25,078	6	663	7	506	6	309	6	2.6	2.0	1.2
France	24,847	7	1,005	3	528	5	560	1	4.0	2.1	2.3
EU-7	25,694		920		545		488		3.6	2.1	1.9

Source: OECD Health Data, August 2002; HVSU and Statistik Austria; IHS HealthEcon calculations 2003.

...which does not guarantee an economical use of outpatient services.

In Austria per-capita expenditure on outpatient services is very high. Outperforming the weighted average of the EU-7 per-capita expenditure on outpatient care by 20 percent, it tops the ranking of the selected countries. Denmark and Italy follow on ranks two and three. In the Netherlands specialist care is predominantly provided within the hospital sector, which seems to cause the high expenditure on inpatient care observed there and brings about the lowest per-capita expenditure on outpatient care. With only half the value observed in Austria, they bring up the rear.

More “tranquillisers” with low incomes...

France and Italy are known as countries with a comparatively high drug consumption, which contributes to the high per-capita expenses on medical products including pharmaceuticals. This pattern is inversely proportional to the per-capita income: The per-capita GDP is lowest in France, Italy ranks fifth. Germany occupies the second place in terms of per-capita expenditure on medical products and the fourth place in terms of per-capita GDP.

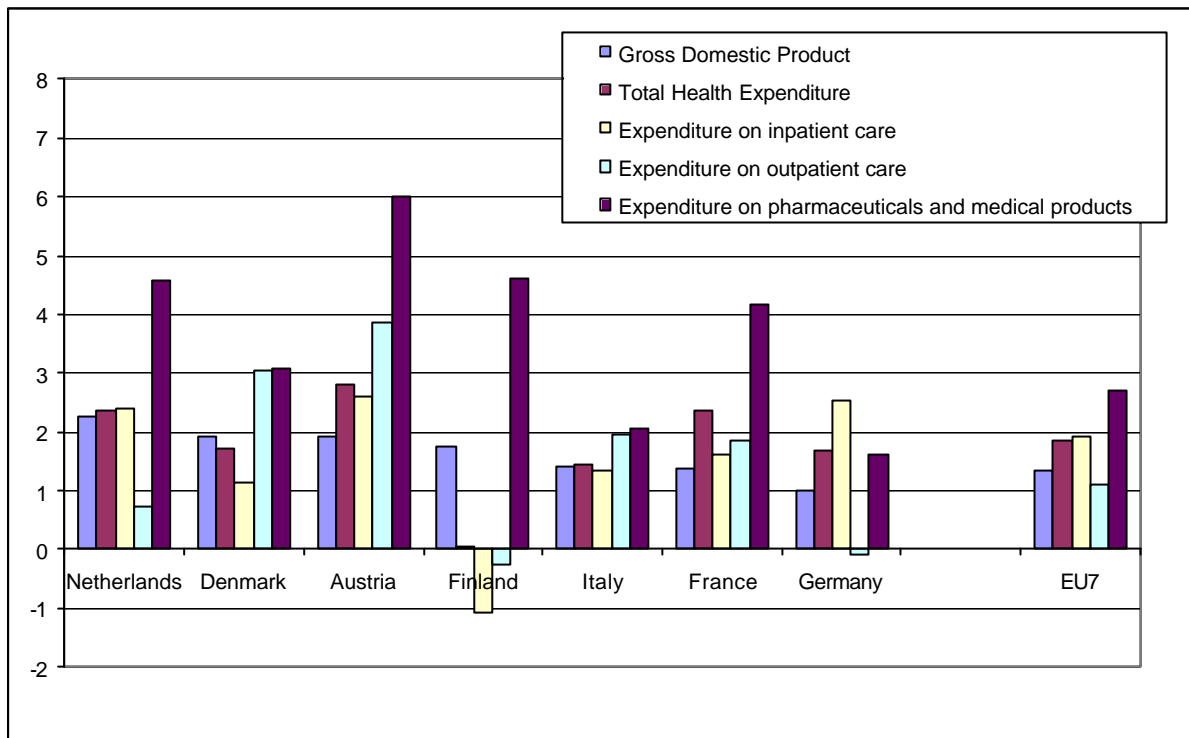
...or “cost push inflation”

In the EU-7 countries the increase in the real per-capita expenditure on medical products is clearly above the growth of real per-capita GDP and in most cases also above the growth of the real per-capita expenses on other fields of service (cf. figure 1). In most countries the pharmaceuticals sector has been in the focus of health policy for some time. The dynamics of the pharmaceuticals sector generally reflects technical progress in medicine: While the number of new chemical substances entering the market has decreased since the 1960s³, the number of drugs that enhance the quality of life has increased⁴. The improvement of the quality of life is however not necessarily depicted by the real development of pharmaceuticals expenses, since commonly used price indices are not (yet) capturing certain quality aspects. Austria's wholesale price index, for example, has shown a continuous price decline since the 80s. On the other hand, between 1980 and 2001 prices (expenditure per prescription) increased more considerably as compared to per-capita prescriptions. Although this problem applies to the entire health care sector, it seems to play a particularly important role in the pharmaceutical provision.

³ Scherer F.M., The Pharmaceutical Industry, In: Culyer A.J., J.P. Newhouse, (Ed) Handbook of Health Economics, Vol. 1, Ch. 25, pp. 1298-1332, Elsevier 2000.

⁴ Lichtenberg, F.R., Are The Benefits Of Newer Drugs Worth Their Cost? Evidence From The 1996 MEPS, Health Affairs (September/October 2001): 241-51

Lichtenberg, F.R., S.Virabhak, PHARMACEUTICAL EMBODIED TECHNICAL PROGRESS, LONGEVITY, AND QUALITY OF LIFE: DRUGS AS “EQUIPMENT FOR YOUR HEALTH” National Bureau of Economic Research Working Paper 9351, <http://www.nber.org/papers/w9351>: 5.5.2003

Figure 1: Average annual per-capita growth 1990 – 2000, at 1995's GDP prices, in percent**Notes:**

Values for medical products in Austria include the value added tax since 1997

Growth rates for Germany: 1992-2000: New health expenditure calculation 2001

Source: OECD Health Data, August 2002; HVSV and Statistik Austria for Austria; IHS HealthEcon calculations 2003.

...or both

The measures of curbing the expenditure growth in the inpatient sector that were carried out in the last decade have obviously been more successful than measures applied in the pharmaceuticals sector. The annual average growth of real per-capita expenditures on inpatient care are either equal or even below that of the real per capita GDP of the respective country. Only Germany and to some extent also Austria deviate from this pattern. The reason why expenditure on pharmaceuticals increased more sharply than other expenses is the increasing real consumption combined with even more sharply increasing costs per prescription – which seems paradoxical in the light of an overall downward trend in prices. As for Austria this can be explained by a shift in the demand towards more costly products. Moreover, certain new, innovative and therefore expensive drugs are not included in the basket for pharmaceutical price index calculations. It can be assumed that this is also the case in other countries.

Pharmaceuticals provision gets a larger slice of the cake...

Figure 1 depicts a phenomenon that has been observed for a long time already: the fact that in almost all countries the health care sector is growing faster than the overall economic income⁵. In the decade from 1990 to 2000, and especially between 1995 to 2000, the growth is however likely to have predominantly occurred in the pharmaceuticals sector. In this period expenses on inpatient and on outpatient care registered growth rates that remained below the EU-7 average. With a sharp growth of real per capita expenses on outpatient care Austria is an exception. The difference to the growth of the real per-capita GDP amounted to two percentage points, while real per-capita expenditures on outpatient care in the weighted EU-7 average basically grew at the same pace as the real per-capita GDP (-0.2 percentage points). Between 1990 and 2000 the share of expenses on inpatient care in Austria's overall health expenditure fell 0.9 percentage points, namely from 46.1 to 45.2 percent. The weighted EU-7 share remained almost constant on a low level (+0.3 percentage points) (cf. table 3).

Table 3: Expenditure components in percent of overall health expenditure, Austria⁶ and EU-7

	<i>Austria</i>	<i>EU-7*</i>
1990		
Inpatient care	46.1	38.3
Outpatient care	28.2	24.4
Pharmaceuticals and medical products	13.9	16.0
1995		
Inpatient care	44.1	39.2
Outpatient care	29.1	23.3
Pharmaceuticals and medical products	13.8	15.3
2000		
Inpatient care	45.2	38.6
Outpatient care	31.4	22.9
Pharmaceuticals and medical products	19.0	17.1

*weighted on the entire health expenditure

Source: OECD Health Data, August 2003; HVSV and Statistik Austria for Austria; IHS HealthEcon calculations 2003.

The share of pharmaceuticals expenditure has grown, especially in Austria, which is partly due to the 20 percent value added tax integrated since 1997. Including the value added tax, the expenditure share of pharmaceuticals and medical products in Austria has increased from 13.9 to 19.0 percent, without value added tax 13.9 to 16.3 percent, which is still clearly above the increase observed in the EU-7 countries (+1.1 percentage points).

⁵ Reinhardt U.E, P.S. Hussey, and G.F. Anderson, "Cross-National Comparisons of Health Systems Using OECD Data, 1999," Health Affairs (May/June 2002): 169–181.

⁶ The level of expenditure shares for Austria might be overestimated, since despite the revision of the health expenditure presented in April 2003 considerable expense components have remained beyond consideration. This leads to an underestimation of the entire health expenditure of approx. 1.2 billion Euro in 2000. This underestimation has however no impact on the analysis presented here, since it is the shift of expenditure elements rather than the level that has been considered. Cf. also the detailed discussion of the problems related to health expenditure calculations in Austria in Health System Watch 1-2003 (www.ihs.ac.at).

...and Austria converges towards the EU...

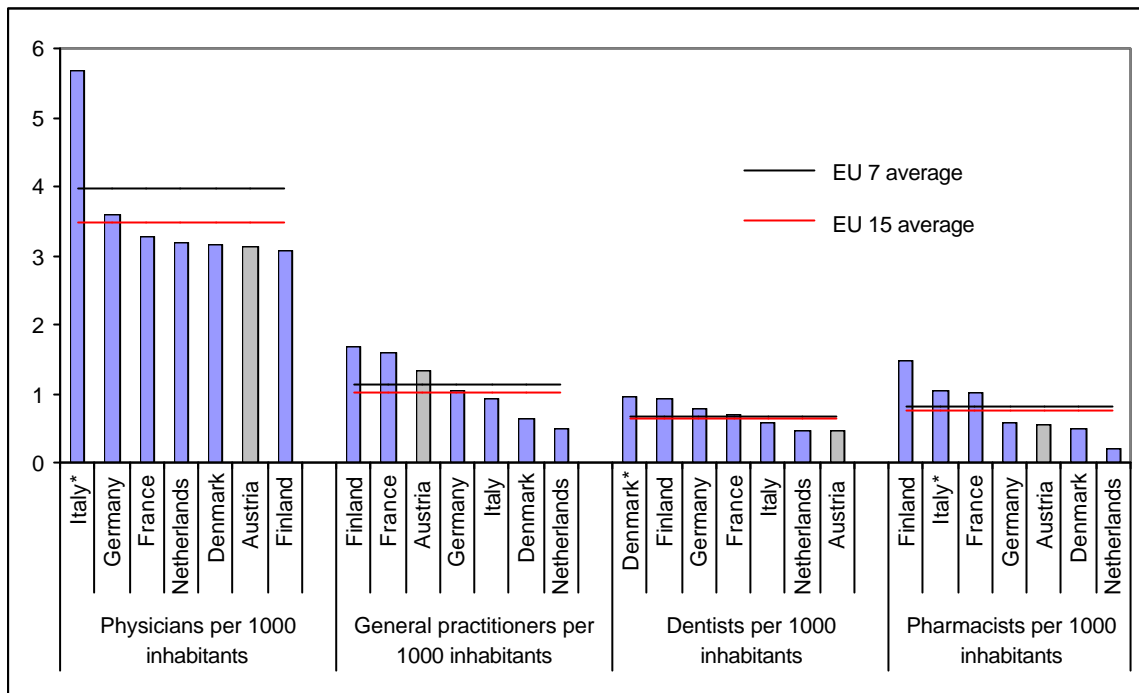
Between 1990 and 2000 the share of expenses on pharmaceuticals in the entire health expenditure increased from 10.7 percent to 15.4 percent (cf. table A2). Nevertheless the share of pharmaceuticals expenses in Austria still falls clearly below the weighted EU average. The dynamical growth of the provision with medical products and services in Austria shows the possible trend towards a convergence of health expenditures: In countries with low expenditure levels in 1990 real per-capita expenditures tend to show higher growth rates between 1990 and 2000. In the EU-7 countries the correlation coefficient between the levels of per-capita expenses on pharmaceuticals in 1990 and the real growth rates between 1990 and 2000 amounted to -0.63 ($p=0.13$). In all other fields of service this negative correlation can be observed, too, but by far not to such an extent.

...where the outpatient sector increases moderately.

Due to the below-average growth rates in the decade from 1990 to 2000 the share outpatient care took in the expenditure in the EU-7 slightly decreased from 24.4 percent to 22.9 percent. In Austria the development was different: In 2000 the expenditure share for outpatient services (including dental care) amounted to 31.4 percent, which was three percentage points more than in 1990. Family physician and specialist care alone accounted for 21.4 percent of the health expenditure in 2000, which was 2.3 percentage points above the share observed in 1990 (cf. table A3). Private households finance more than one third of the outpatient services in Austria (cf. table 1). The dynamic development of outpatient care is predominantly due to the clearly sharper increase in private expenses on specialist and dentist care, with specialist and other physician services experiencing a particularly increased demand.

Does high income lead to a lower number of general practitioners...

Countries with high per-capita incomes are not necessarily provided with a high number of physicians. Denmark and the Netherlands have the lowest density of general practitioners in the EU-7 countries, while ranking first and second, respectively, in terms of income (cf. table 2 and figure 2). Finland and France show high densities of general practitioners and low per-capita incomes.

Figure 2: Physician, dentist and pharmacist density 2000.

*1999

Source: WHO Health for all database, January 2003; IHS HealthEcon calculations 2003.

In Austria, too, high expenditure on outpatient care does not seem to go hand in hand with a high physician density⁷.

The literature indicates that there is a ten-years' delay between per-capita income and physician density and that the relation between physician density and per-capita income is a positive one⁸. In the countries we selected no positive correlation between the present physician density and past incomes can be observed. On the contrary, we have found a negative correlation: The higher the per-capita GDP, the lower the physician density (correlation coefficient -0.69 ($p=0.08$)). A reason for this result might be the fact that our selection of countries is biased, since in social health insurance countries like in Germany, France, the Netherlands and Austria physician supply is largely self-regulated, and remuneration is mostly a fee-for-service scheme (cf. table 4). Combining the high level of self-regulation with the fee for service scheme might lead to above-average physician incomes if market participation is restricted to a certain extent⁹.

...or do fewer physicians attend more patients?

Furthermore, in our country sample we observe that states with low physician densities show high rates of utilization. In the EU-7 6.3 physician visits are made per capita and year. There is however a slightly negative correlation between the frequency of utilising physician services and the density of general practitioners (correlation coefficient -0.27 ($p=0.57$)). With 6.7 visits, utilisation in Austria

⁷ All practising physicians without dentists and physicians in training.

⁸ Cooper, R.A. et al, "Economic and Demographic Trends Signal an Impending Physician Shortage, "Health Affairs (Jan/Feb 2002): 140-154

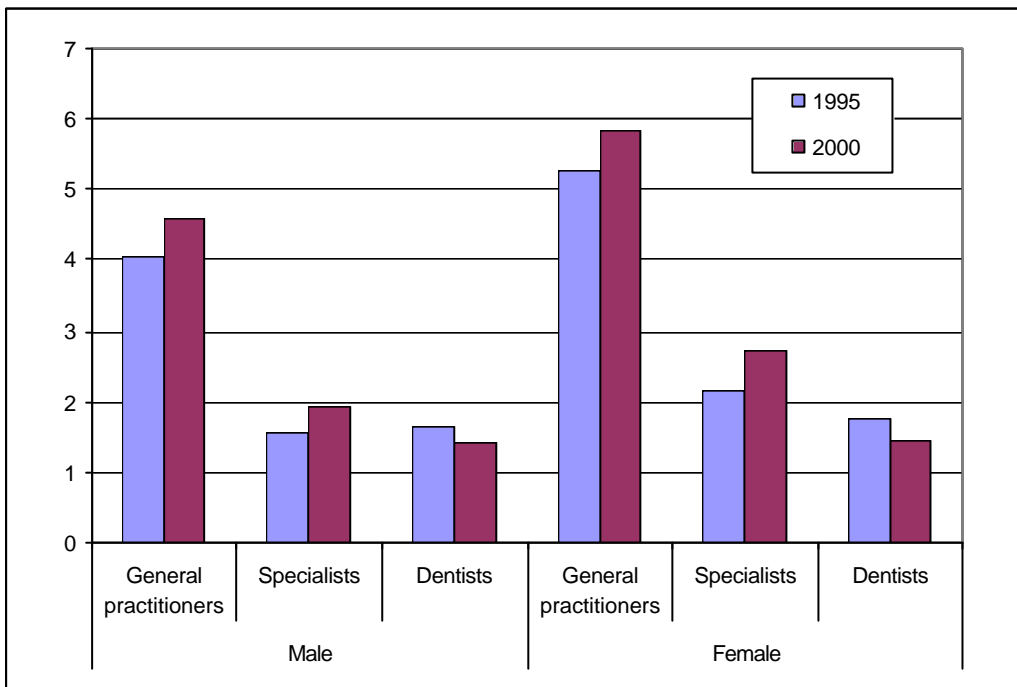
⁹ As for Austria it can be assumed that physicians most certainly have the highest income in the group of the self-employed. Cf. report of the Court of Audit on incomes - Einkommen 1/2002, Vienna.

exceeds the population-weighted EU share by 7 percent. The density of general practitioners (1.3 per 1,000 persons) is 17 percent higher (cf. figure 2). The European Community Household Panel (ECHP)¹⁰ allows for an investigation of the frequency of service consumption in the course of time and differentiated in terms of socio-economic criteria.

The demand for physician services increases less sharply than expenditure

In 2000 women visited a general practitioner 5.8 times on average, men 4.6 times. As compared to 1995 the frequency of visiting a physician increased 10 percent with women and 13 percent with men (cf. figure 3).

Figure 3: Physician visits in Austria



Source: European Community Household Panel (ECHP), IHS HealthEcon calculations 2003.

¹⁰ The European Community Household Panel (ECHP) is a panel survey on the living and income situation in 14 EU-countries. In Austria 4,646 persons participated both in 1995's and 2000's wave of the survey.

The questions asked to analyse the health care sector were the following:

1. "How often did you consult a general practitioner during the past 12 months?"
2. "How often did you consult a specialist physician during the past 12 months?"
3. "How often did you consult a dentist during the past 12 months?"

In the same period the increase in private expenses on physician services (+39 percent) was clearly above the entire increase in expenses on physician services (+20 percent). Specialist physicians were considerably less often contacted. Notwithstanding, the frequency of visiting a specialist has increased more sharply than that of visiting a general practitioner (+25 percent with men and women) since 1995. The gap in the frequencies of physician contacts between men and women is quite constant. Both women and men see their family physicians approximately twice as often as specialists. Dentists are consulted 1.4 times a year. Although since 1995 the cases of consulting dentists have decreased both with men (-13 percent) and women (-19 percent), the nominal expenses of health insurers on dentist services went up 12 percent between 1995 and 2000, expenditure on dentures remained constant. In 2000 private households spent 25 percent more on dentist care than in 1995.

The outpatient sector in Austria is growing more dynamically than that of the EU-7 (cf. also table 3). This seems however not to be the shift "from inpatient to outpatient" aimed at by health policy, since the demand observed in the inpatient sector is still as high as it used to be (cf. table A4 and also A1). In addition to that the growing utilisation of outpatient services along with even more sharply increasing expenditures suggests that private households are increasingly financing family physician and specialist services by their current income, which has consequently become an important income source for physicians.

This development is important with regard to the current discussion on new user charges, since the latter might increase the patients' incentive for consulting their physician of choice/non-contract physicians instead of contract physicians. Furthermore the results of the household panel show that women see family physicians and specialists much more often than men do. User charges per physician visit would consequently affect especially women. In the light of the sustained income differences between men and women¹¹ this consequence must especially be borne in mind. This is why we consider rethinking the existing contract regulations (selective contracting and harmonising remuneration schemes across sickness funds as well as contractual features) as a superior approach to maintain and further enlarge fair access to family physician and specialist care.

The following chapter deals with forms of remunerating physicians in the ambulatory sector and tries to answer the question whether there are countries that already use per-case flat rates as financing instruments for general practitioners and specialist care.

¹¹ Bericht über die Soziale Lage 2001 – 2002, Analysen und Ressortaktivitäten, BMSG (Report on the social situation 2001-2002, analyses and departmental activities, Federal Ministry for Social Security and Generations), Vienna 2002.

Focus:

Per-case flat rates in the outpatient sector

There are three basic types of physician's remuneration schemes, namely salary, per-capita flat rates and fee-for-service remuneration (cf. table 4). Most countries have mixtures of these three types. These basic schemes provide for different incentives for and partly also against an economical use of resources¹². At present per-case flat rates are hardly used in the outpatient sector. We are only aware of some individual cases, and even there they occur in a quasi-hospital or hospital-near environment; moreover they are not exhaustive, appearing for example in a pilot experiment on outpatient surgery in Schleswig-Holstein¹³, in a model planned for Sweden¹⁴ and in Austria within the hospital outpatient departments of Tyrol and Lower Austria. The new tariff structure in the Swiss health care sector, too, whose first part is to be tested from the beginning of May 2003 on after lengthy preparations, contains no more than a declaration of intent to settle especially frequent diagnoses via outpatient per-case flat rates in the future¹⁵.

¹² cf. Health System Watch 2/2002 and the references quoted there (www.ihs.ac.at).

¹³ Gerber I, Roterling C, Ambulante Fallpauschalen: Ergebnisse eines Modellversuches in Schleswig-Holstein, In: Arnold, Litsch, Schellschmidt (eds.), Krankenhaus-Report 2000: Vergütungsreform mit DRGs, Schattauer.

¹⁴ Mats Fernström, Development of a DRG system for outpatient procedures (NordDRG-O), Casemix vol 4, no 1, March 31, 2002 and Mats Fernström, A common Nordic version of NordDRG-O for One-day care. Final report from the project group for NordDRG-O, mimeo, 2003.

¹⁵ SUVA, Tarmed – die neue Tarifstruktur tritt in Kraft. Der erste Schritt zum einheitlichen Arzttarif, Bern/Luzern, Pressemitteilung December 16, 2002

Table 4: Remunerations schemes of general practitioners and specialists in selected countries

	<i>Source/year</i>	<i>remuneration type – general practitioners</i>	<i>remuneration type - specialists</i>
Austria	HIT 2001	Mix system: Per-case flat rate per quarter and fee for service	same
Belgium	HIT 2000	fee for service	same
Denmark	HIT 2001	Mix system: per-capita flat rate (1/3) and fee for service (2/3)	fee for service
Germany	HIT 2000	fee for service (point system)	same
Finland	HIT 2001; Mossialos/ Le Grand 1999	General practitioners (40%): Mix system: salary (60%), per-capita flat rate (20%), fee for service (15%) and local grants (5%) other physicians (60%): salary and fee for service	Specialists in hospitals: salary, in private practices: fee for service
France	EOHCS 2002	fee for service	same
Greece	HIT 1996	salary	same
Ireland	Mossialos/ Le Grand 1999	per-capita flat rate (dependent of sex, age and distance between the patient's residence and the physician's practice) plus additional remuneration for certain procedures	-
Italy	HIT 2001	Mix system: per-capita flat rate, fee for service and induced cost-based refund component	Only the same for paediatricians; specialists in hospitals: salary
Luxembourg	Mossialos/ Le Grand 1999	fee for service	same
Netherlands	EOHCS 2002; OECD 2003	per-capita flat rate (fee for service for privately insured patients and civil servants)	fee for service
Portugal	HIT 1999	salary (mix system is planned)	fee for service
Sweden	OECD 2003, HiT 2001	salary, since 1994 partly per-capita flat rates and increments	same
Spain	OECD 2003, HiT 2000	salary. As provided by the system before 1984 per-capita flat rates are still applied with approximately 19% of the patients	same
United Kingdom	OECD 2003, HiT 1999	per-capita flat rate plus increments for special procedures	salary
Switzerland	HiT 2000 p.68	fee for service, HMOs mostly salaries, but 2 HMOs apply success-oriented payment with guaranteed minimum salary	fee for service
Norway	OECD 2003, HiT 2000	salary (30-40% of income) plus fee for service for contract physicians	same
USA	OECD 2003	in Managed Care systems predominantly per-capita flat rates (appr. 90% of persons insured)	fee for service

Sources: European Observatory on Health Care Systems (EOHCS), Health care systems in eight countries: trends and challenges, April 2002.

Health Care Systems in Transition (HiT), various reports from the respective countries; OECD, Health care systems: lessons from the reform experience, ECO/CPE/WP1(2003)4; Mossialos E, Le Grand J: Health Care and Cost Containment in the European Union, Ashgate/Aldershot, 1999.

The German minister of health had planned to launch a bill on a health reform in May 2003. With respect to 'further development of the system of remunerating physicians – incentives for better and more economic treatment', the intention is to design the remuneration scheme of general practitioners on the basis of patient's needs and the scheme of specialists on per-case flat rates¹⁶. No details have been given on the planned system of per-case flat rates so far¹⁷. The reform might take points of criticism and suggestions presented in the board of experts' opinion as orientation¹⁸. According to the proposals made there, specialist physicians are to receive a combination of per-case flat rates, fee for service scheme and an outcome-oriented part. It is to cover the entire treatment costs for all patients. The fee for service scheme is to be paid for special diagnosis and therapy procedures that can be provided by both specialists and hospitals¹⁹.

In the light of the increasing international interest in a remuneration scheme for outpatient services that is based on per-case flat rates it seems to be worth collecting and analysing existing experiences in order to contrast them with other remuneration systems.

Remuneration schemes pursue different aims

In the past years a number of countries have introduced per-case flat rate systems in the inpatient sector (for an overview cf. Rochell, Roeder 2000²⁰). The countries had quite differing aims when they introduced them. Next to applying them for hospital financing, often linked to the aim of containing costs, per-case flat rates are also used for hospital comparisons and quality assurance. Literally the most frequently applied versions, the Diagnosis Related Groups or DRGs, mean per-case flat rates that are based on equal diagnoses and not necessarily on equal treatment methods. The basic idea is to offer service providers incentives to treat a diseases by using as little resources as possible instead of trying to carry out as many treatment units as possible – as it might be the case with a fee for service system. When aiming at an overall optimal resource allocation it is consequently not advisable to reimburse different service providers treating patients with the same diagnosis differently. In other words, aiming at completely exhausting their efficiency potential, per-case flat rates should not stop at institutional borders.

In Austria an extension of the remuneration system for inpatient services to outpatient departments of hospitals has repeatedly been urged²¹ and is at present one of the focus subjects of the further development of the procedures and diagnosis oriented hospital financing system

¹⁶ <http://www.bundesregierung.de>, 03/04/03.

¹⁷ The glossary of health policy related terms of the German SPD group in the Bundestag does not contain much more information, either: A per-case flat rate is a lump sum refunding all physician services of one treatment case when concluded. In the case of per-case flat rates the entire remuneration is calculated by multiplying the number of all treatment cases with the lump sum. In this reimbursement system the health insurer bear the morbidity risk and the financial consequences of developments in risk structure of the insured. The physicians bear the risk of quantities treated, i.e. the additional or reduced cost per treatment case. <http://www.spdfraktion.de/pa/ag/gesundheit/glossar.pdf> [12/4/03]

¹⁸ Sachverständigenrat für die konzertierte Aktion im Gesundheitswesen, Finanzierung, Nutzerorientierung und Qualität, Gutachten 2003.

¹⁹ Detlef Haffke, Niedersächsisches Ärzteblatt 1/03 <http://www.haeverlag.de> [8/4/03]

²⁰ Rochell B, Roeder N, DRG-basierte Entgeltsysteme in Europa, In: Arnold, Litsch, Schellschmidt (eds.), Krankenhaus-Report 2000: Vergütungsreform mit DRGs, Schattauer.

²¹ Austrian Court of Audit, Wahrnehmungsbericht des Rechnungshofs über die Reform des Gesundheitswesens und der Krankenanstaltenfinanzierung, July 12, 2000 and Stepan A., Sommersguter-Reichmann M (2001): Analyse des neuen Leistungsorientierten Krankenanstalten-Finanzierungssystems in Österreich. Working paper, Vienna University of Technology / Donau University Krems / Karl-Franzens University Graz

("LKF" system)²². It has to be pointed out, yet, that the Austrian LKF system only partly corresponds to the ideal of a *diagnosis-group* based system, as the term *procedures oriented* suggests. When looking at the LKF's algorithm resulting from the division of the groups it can be seen that only one branch is based on diagnosis groups, while the other one consists of single-procedure groups (and consequently services rather than diagnoses). This differentiation is not purely academic, since both reimbursement forms, namely per-case flat rates and fee for service remuneration, exert different incentives on the service providers. Moreover, per-case flat rates are generally considered to be more efficient²³.

Per-case flat rates are in some isolated cases used for outpatients

Design of the pilot experiment Schleswig-Holstein²⁴ ...

In Schleswig-Holstein a pilot experiment for a group of 20 selected operations was carried out over several years. In the course of this experiment per-case flat rates were developed and used, aiming at promoting outpatient surgery where medically appropriate, thereby aiming at substituting inpatient care by equivalent outpatient procedures. Another aim was to achieve cost savings for treating those cases. To maintain quality the flat rates developed and applied in the experiment could only be utilised by medical practices that performed an annual minimum number of surgeries. Hospitals were explicitly excluded. In this respect the German experiment is fundamentally different from the Swedish and Austrian models to be discussed below, which focus on outpatient treatment of patients in hospitals.

The definition and new calculation of the per-case flat rates of the German pilot experiment was cost-oriented. Some major differences from the calculation of inpatient flat rates were observed: New modules were introduced, sometimes new settlement rates for the cost types of certain modules were created, cost types such as investment costs were included into the calculation, and some items used for calculating inpatient rates were excluded. The design of the per-case flat rates aimed at containing both personal cost and cost of materials .

Although the pilot experiment covered only 20 types of surgery the latter account for the considerable substitution potential of 22.4 percent of all inpatient surgery cases. In order to prevent insignificant results originating from a low number of cases the programme was restricted to 11 frequent operations, which however account for more than 90 percent of all cases within the 20 operations selected.

...and its results

The flat rates agreed upon are above the rate that was applied to practising physicians before and that resulted from the uniform assessment standard (EBM). This financial incitement

²² Embacher G., Schneider R. (2002), The Austrian Procedures and Diagnosis Oriented Hospital Financing System, Proceedings of the 18th Patient Classification Systems/Europe Conference, Innsbruck/Austria, October 2-5, 2002

²³ Hsiao W.C., Roberts M.J., Berman P.A., Reich M.R.: Getting Health Reform Right, Harvard University, October 2000

²⁴ Gerber I, Roterig C, Ambulante Fallpauschalen: Ergebnisse eines Modellversuches in Schleswig-Holstein, In: Arnold, Litsch, Schellschmidt (eds.), Krankenhaus -Report 2000: Vergütungsreform mit DRGs, Schattauer.

therefore brought about an increase in services provided by contract physicians: 896 operations or 13.5 percent more than the number registered in the period of comparison. Approximately one third of this increase originated in physicians' practices that did not participate in the experiment: Since participation required a minimum number of operations, the authors of the study suppose that these practices pursued the aim of being included into the model contract. With respect to the entire range of services provided there was only a less than three percent (minus 513 cases) quantitative reduction of the inpatient cases. .

If outpatient care provided by hospitals is combined with inpatient care, the substitution volume amounts to no more than 168 operations or 0.8 percent. The decline in cases being treated on an inpatient basis was only partly due to a shift towards medical practices. What was also influential was an increased number of outpatient operations in the hospital, which were not considered in the framework of the model contract. Physician activities in private hospitals, on the other hand, seem to have resulted in a certain shift from the hospital towards office-based surgery.

Sum total no savings can be registered with the operations observed. There is evidence that hospital service provision (outpatient and inpatient) declined, but the increase in costs for contract physicians was more than the double. The higher remuneration of model procedures and the increase in the number of cases of contract physicians seem to have over-compensated the lower costs in the inpatient sector. Looking at single procedures reveals a more differentiated picture. With only one model procedure (abrasion of the uterus) savings could be observed, although this procedure seems to have shifted both to hospitals' outpatient departments and to contract physicians, and not predominantly to the latter. In the case of cataract surgery, on the other hand, operations shifted to the physicians' practices, with the overall number of cases remaining constant. Nevertheless no financial savings were made, since the model physicians settled not only the additional, but all of the cases of cataract surgery in the model via the flat rate, which was approximately 400 DM (205 Euro) above the former EBM refund per case. With respect to other operations either no shift towards the ambulatory sector occurred or ambulatory procedures increased more sharply than inpatient ones. As in the case of cataract treatment the changed (=increased) reimbursement of contract physicians tends to cause a more than proportional increase in expenses if no substitution takes place.

This observation leads the authors of the study to the conclusion that the strict separation between ambulatory and inpatient sectors, as it is obviously also practised in Germany, counteracts a quantitative and especially a financial substitution. They recommend a cross-sector promotion of outpatient surgery; hospitals should be integrated into the corresponding contract as practising service providers are. Furthermore they point out that the definition of the diagnosis and the therapy is not the only decisive criterion when it comes to carrying out an operation on an outpatient basis. What in fact is important in their opinion is to bear also in mind the patient's family and social environment and to negotiate outpatient elements of an operation with integrated service providers.

The paper does not deal with the question to what extent the results depended on the amount of the (now higher) remuneration level in the pilot experiment. It thereby leaves open whether the agreed

fee might have been too high in single cases. This would be the case if between the EBM level and the one actually agreed upon in the pilot experiment a physician fee level existed that was high enough to offer incentives for a shift to the outpatient sector (since all cases of the same diagnosis are reimbursed by this fee, also those that would never have been considered for an outpatient treatment), but low enough to restrain the increase in the entire costs for outpatient services to the savings made in the inpatient sector. Still, it is exactly the heterogeneous results and unanswered questions that depict how difficult it is to use per-case flat rates as a steering tool.

DRGNord-O: Per-case flat rates for day clinic procedures in Sweden²⁵

A model developed in Sweden has a completely different aim. It focuses especially on day-clinic and endoscopic procedures in hospitals. For the Nordic countries including Sweden the system NordDRG was developed already in the 90s, taking the American DRG scheme as a baseline. Although this system is designed for the inpatient sector, it is in some county councils also applied to the outpatient sector, especially for same-day surgery. According to Sweden's experiences same-day surgery procedures are in 50 – 60 percent of the cases well described by the DRGs for the inpatient sector, namely in the case of operations. As for the remaining cases the application of NordDRG is hardly efficient. This is why the development of an adapted version, NordDRG-O (O for outpatient), for the outpatient sector was agreed upon. This scheme is to be applied both for outpatient and inpatient one-day patients. Since the aim was to depict day clinic services, all DRGs that did not comprise any procedures were excluded, reducing the number of DRGs to about the half. In the past only with 0.10 percent of the outpatient cases complications or comorbidities were observed, which were therefore considered irrelevant to the outpatient sector and not paid attention to in the development of NordDRG-O. This further reduced the number of DRGs. DRGs that are predominantly or exclusively appointed to outpatient cases today were on the other hand maintained. This was intended to prevent the need for adaptations to arise as soon as technical progress allows for an outpatient treatment.

The Swedish experts reckon that it will be impossible to reach complete compatibility between inpatient and outpatient DRGs. While cases involving surgery are to be coded identically in both settings, it is often factors that are irrelevant to the inpatient context that are decisive for outpatient cases. The differing relevance predominantly arises from the different complexity and the resulting cost differences between inpatient and outpatient sectors. In the outpatient setting various factors can cause cost differences and correspondingly lead to a different encoding, while the same cost differences are negligible for inpatient treatment, since the average costs are much higher there.

This is why some new groups were introduced into NordDRG-O, predominantly for endoscopic cases and DRGs without procedures. Although endoscopic procedures do not belong to surgery, they should be considered in any case because of their frequency and costs. A classification according to inpatient DRGs was considered inappropriate for the day-clinic sector, since no surgery is involved there. Finally 18 new DRGs for outpatient endoscopic treatments were developed. DRGs

²⁵ This section is based on information provided in Fernström, op. cit.

without procedures were united according to medical, conservative criteria as well as the logic of the original NordDRG system.

The project group was to present the final report relevant for the development of NordDRG-O in spring 2003. This implies that the system had not been implemented when this issue was published, and no experiences could be gained yet.

Results for Austria are not available yet

In two Austrian states per-case flat rate systems for the outpatient departments of public hospitals have been in use, namely in Tyrol since the introduction of the LKF system and since 1999 also in Lower Austria.

In Tyrol, for example, 12.5 percent – after a series of deductions – of total hospital outlays are provided for remuneration in the outpatient sector, for the inpatient sector it is 82 percent and for additional costs 5.5 percent. In line with the rule for the inpatient sector the means for the outpatient sector are distributed among the public hospitals according to the number of outpatient credit points that are relevant to the fund. The actual remuneration per credit point is calculated retrospectively. Single fields of procedures are subject to weighting; the weighing factor for the Innsbruck university hospitals amounts to 1.2, for all other public hospitals to 1.0²⁶. The catalogue of outpatient services comprises various procedures such as MR, CT, conventional and interventional radiology, laboratory analyses, dialyses, endoscopies, radiotherapy, dental treatments, psychotherapy and psychodiagnosis or therapies in the fields of physiotherapy, logopaedics and ergotherapy²⁷.

At present the experience gained from the two federal states do not allow any conclusions on incentive effects of the per-case flat rate system in the outpatient sector yet. Firstly, no obvious differences in the development patterns can be observed, cf. figures 4 and 5. Secondly, there are still differences in data quality and collection in the field of hospitals' outpatient departments which regard both case and frequency statistics and cost data. Since interdependencies with the care provided by practising physicians can be expected, it is reasonable to consider these two settings together. When comparing the development of the number of cases of both settings between Tyrol²⁸ and Austria no considerable differences in growth rates can be observed, neither in terms of quantity nor quality. In the second and third LKF years higher growth rates of cases were registered than in the two previous or the two following years both with practising physicians and outpatient departments of public hospitals. This is not necessarily a real effect, but might rather represent only the fact that registration of outpatient cases has become more exact after a transition period in the first LKF year as a consequence of an Austria-wide change in the remuneration system. On the other hand this does not explain the parallel increase in cases with practising physicians. This increase, in turn, can at least for the year 1998 be considered independently from the developments in the outpatient

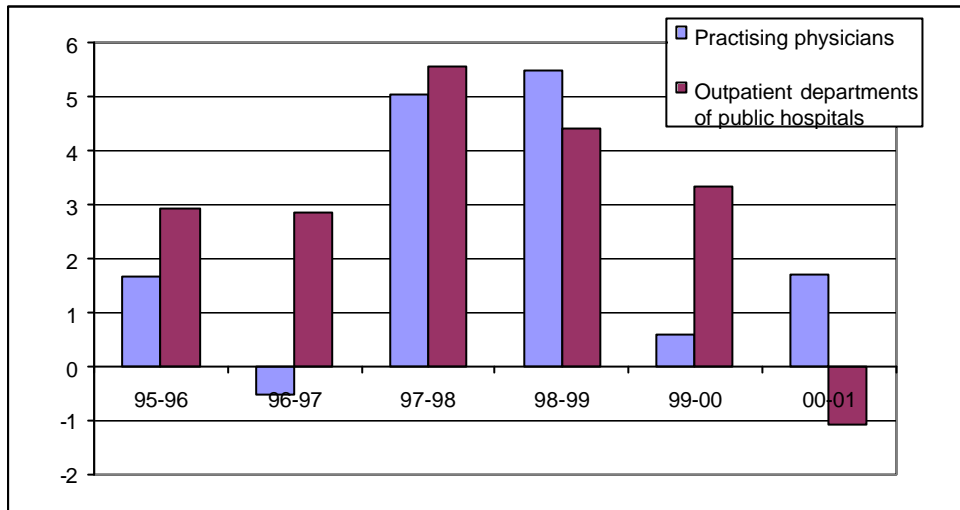
²⁶ Richtlinien des Tiroler Krankenanstaltenfinanzierungsfonds für das Jahr 2003, tkf_richtlinien2003_beschluss.pdf, <http://www.tirol.gv.at/themen/gesundheit/krankenanstalten/downloads.shtml> [04/04/2003]

²⁷ Erfassung der Ambulanzleistungen für die Krankenanstalten-Statistik und die Abrechnung mit dem Tiroler Krankenanstaltenfinanzierungsfonds, lkf_amb2003.xls, <http://www.tirol.gv.at/themen/gesundheit/krankenanstalten/downloads.shtml> [04/04/2003]

²⁸ The values for Lower Austria are not presented here since the introduction took place even later, which means conclusions have to be drawn even more carefully.

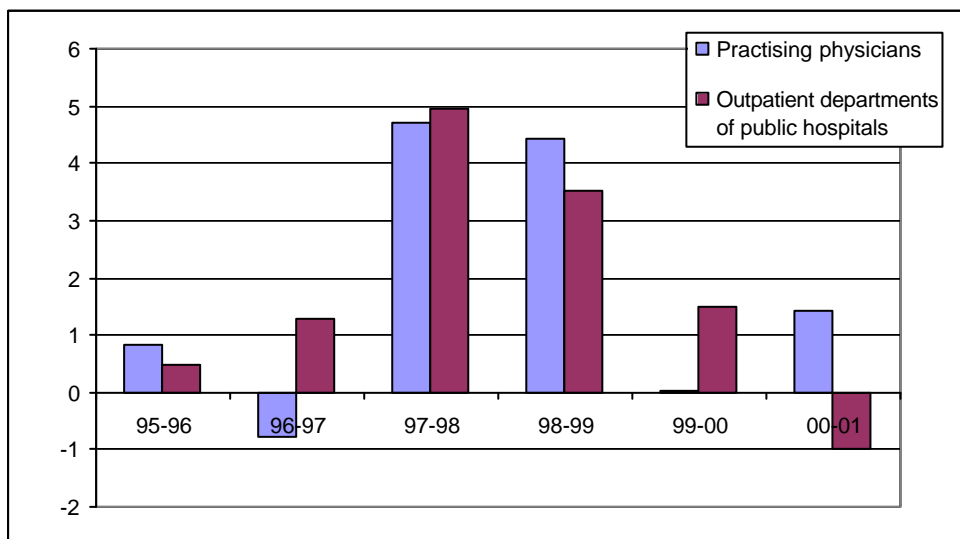
sector: The introduction of a user charge for health insurance vouchers led to a temporary decline in physician visits in 1997, which flattened out however after a few quarters. Moreover, former consumption behaviour seems to have prevailed in consecutive periods and we observe even a short-term catch-up effect.

Figure 4: Annual growth rates of outpatient cases, Tyrol, in percent



Source: Federal Ministry for Social Security and Generations, IHS HealthEcon calculations 2003.

Figure 5: Annual growth rates of outpatient cases, Austria without Tyrol and Lower Austria, in percent



Source: Federal Ministry for Social Security and Generations, IHS HealthEcon calculations 2003.

Why do per-case flat rates not yet exist in primary care ?

As far as we know there is no country to reimburse practising health care providers with per-case flat rates. The reasons might be the following:

- A diagnosis and thus the necessary treatment often require the co-operation between several medical and non-medical specialists. In primary care these people usually do not work in the same place. If remuneration is a per-case flat rate scheme, the financial flows between the suppliers have to be regulated, too. This is easier within an economic entity such as a hospital or a multidisciplinary group practice than it is within a network of co-operating, but separately accounting suppliers, as it is the case in the primary-care sectors of many countries including Austria. The co-operation between various professions, such as therapeutic staff and physicians, necessitates additional co-ordination. In a heterogeneous structure of suppliers already the definition of a treatment case is no longer a trivial task²⁹. It becomes all the more difficult if it is linked to a cost-oriented flat rate on the basis of which the involved suppliers are remunerated..
- The development and maintenance of DRG systems is more complicated than that of a fee for service scheme³⁰ and even more complicated than that of a per-capita lump sum or salary scheme. The calculation of DRG flat rates not only requires statistics on the (efficient) resource consumption per service, but also the definition of a standard treatment or a typical patient career. Since the hospital sector is in general more cost intensive than the primary care sector – cf. annex tables A1-A3 - , the effort seems more justified there. This argument is corroborated by the fact that the fee per diagnosis in primary care is on the average lower than in the inpatient sector. Still there seem to be great variations between physician fees, as the differentiation between acute and chronic outpatient cases suggests.

In its recent annual expertise the German expert board repeated their claim for a mixed remuneration scheme for physicians³¹, a claim they already expressed in their expertise of 1997. This system aims at combining the fee components in a way so as to make the respective disincentives act against each other: When assuming that physicians react to economic incentives based on the remuneration scheme by changing their practice style, salaries and per-capita flat rates must generally go hand in hand with under-provision and remunerating single-procedures with over-provision. Diagnosis-oriented per-case flat rates might consequently constitute a mix of a fee for service scheme and per-capita flat rate, leading to service provision between the two extremes. This combination of refund remuneration forms has the benefit of reducing the above mentioned difficulties, since per-case flat rates no longer have to cover the entire treatment costs per case (for there is a basic refund). That is to say the flat rates can be aggregated more tightly and therefore be administrated more easily. The problem of cross-supplier cases is thereby reduced, too, although not solved.

²⁹ Cf. Health System Watch 4/2001 (www.ihs.ac.at).

³⁰ This becomes clear when considering the fact that numerous insurance providers – not to mention countries – have their own single procedure-based system, while in most countries variants of the same DRG systems are applied, if and when a per-case flat rate system is used in the first place..

³¹ Sachverständigenrat für die konzertierte Aktion im Gesundheitswesen, Finanzierung, Nutzerorientierung und Qualität, Gutachten 2003, page 528-529

... and what does the trend say?

When comparing the health care reforms of several developed countries certain phases can be observed³². The first wave of reforms aimed at improving the access to health care or to open it for wide parts of the population in the first place. With an increasing range of services the impression was created that the lack in regulation favoured an inefficient use of resources in the health care sector. In the course of the second reform wave the focus was therefore shifted from service extension to cost containment. The predominant tools of budget controls and rationalisation however basically did not improve the incentives for a more efficient use of available resources, making the financial pressure go up again after about a decade of low expenditure increases.

In the third wave of reforms health policy targeted at offering incentives to all participants for a more efficient behaviour, often involving features of competition³³. Especially the Managed Care revolution influenced the suppliers' forms of remuneration. A series of methods, from selective contracting to per-capita flat rates and more carefully negotiated prices, was applied. Accumulated inefficiencies of the previous years obviously left enough room of action for managed care measures to allow for expenditure increases without considerably impairing the outcome³⁴. Elements of competition were not only introduced as competition between insurance providers (e.g. Germany, Netherlands), but also between service providers³⁵. As for the role and remuneration of practising physicians the British fundholders have to be mentioned. Fundholders are general practitioners who purchase, for example, certain surgical services or pharmaceuticals with the budget available from the patients registered with them. In some cases they are able to negotiate the prices themselves. The incentive for an efficient purchase of services consists in the opportunity to reinvest earnings created into their practice. The success of this model consisted in the low hospital charges for fundholders as well as in short waiting periods for their patients³⁶. The system is being further developed. Under the Labour government, for example, similarly structured primary care groups substituted the fundholders. By 2004 Primary Care Trusts (England) and Local Health Groups (Wales) are to become the major purchasers of health care services³⁷.

³² David M Cutler, Equality, Efficiency, and Market Fundamentals: The Dynamics of International Medical-Care Reform, *Journal of Economic Literature* vol XL, September 2002, 881-906.

³³ Cutler 2002, op.cit, S. 903.

³⁴ The direct competition between suppliers is considered more successful than the indirect competition via insurance providers, which is based on the expectation that, under the pressure of competition, insurance providers conclude efficiency enhancing contracts with the service providers. Cf. Richard Saltman, The Western European Experience with Health Care Reform, April 2002, http://www.who.dk/observatory/Studies/20021223_2, [25/04/03]

³⁵ R Miller, H Luft, Does Managed Care lead to better or worse quality of care? *Health Affairs* 16:5, 1997, 7-25 und Cutler 2002, op.cit.

³⁶ Cutler, 2002, op.cit.

³⁷ European Observatory on Health Care Systems, Health care systems in eight countries: trends and challenges, April 2002.

Table 5: Reforms of physician remuneration in the G7 countries

<i>country</i>	<i>introduction</i>	<i>measure</i>
Canada	1984	Physicians have to accept the government payment as entire payment
Germany	1977	Upper limit of expenditures: global budget for physician associations
	1993	Prescription drug budgets for physicians
	1997	Physicians' budgets for practices
France	1979	Tightening/enhanced control of the tariff structure
	1996	Increased control of expenditures
Italy	1992, 1999	Transition from fee for service to a mixed scheme
Japan	early 80s	Tightening/enhanced control of the tariff structure
U.K.	late 40s	Salaries introduced into NHS
	1990	GPs can become fundholders (per-capita flat rates)
	1998	Primary Care Groups substitute fundholders
U.S.	1992	Fee schedule for physicians (RBRVS in Medicare)

Source: adapted after Cutler (2002).

	Expenditures on inpatient care in percent of total expenditure on health							Index EU15=100			
	1990	1995	1996	1997	1998	1999	2000	1990	1995	1996	1997
Austria***	46.1 ^{d)}	44.1	42.7	46.7	45.5	45.0	45.2	119	116	115	124
Belgium	32.8	33.5	34.8	35.0	n.a.	n.a.	n.a.	85	88	94	93
Denmark	56.7	55.0	55.3	54.7	54.3	53.9	53.5	147	145	149	145
Germany	28.6 ^{c)}	30.0	30.2	31.1	31.5	31.1	31.1	74	79	82	83
Finland	44.7	42.0	41.8	41.4	41.1	40.5	39.9	116	111	113	110
France	46.0	45.5	45.5	45.4	44.6	43.6	42.8	119	120	123	121
Greece	28.4	24.8 ^{b)}	n.a.	n.a.	n.a.	n.a.	n.a.	74	65	n.a.	n.a.
Ireland**	53.5	54.3	n.a.	n.a.	n.a.	n.a.	49.0	139	143	n.a.	n.a.
Italy	42.7	44.8	41.7	42.5	41.5	41.7	42.3	111	118	113	113
Luxembourg	26.4	31.3	32.4	36.0	30.7	29.8	n.a.	68	83	88	96
Netherlands	49.2	49.1	49.6	49.9	49.9	49.5	49.2	127	130	134	133
Portugal**	29.5	31.0	32.0	n.a.	n.a.	n.a.	n.a.	76	82	87	n.a.
Sweden**	49.8	42.1	n.a.	n.a.	n.a.	n.a.	n.a.	129	111	n.a.	n.a.
Spain	44.1	43.6	43.6	43.3	42.8	42.3	n.a.	114	115	118	115
United Kingdom**	29.1	29.2	25.1	25.6	n.a.	n.a.	n.a.	75	77	68	68
EU15*	38.6	37.9	37.0	37.6	n.a.	n.a.	n.a.	100	100	100	100
EU12*	39.3	38.7	39.6	40.4	n.a.	n.a.	n.a.	102	102	107	107
Switzerland	47.9	44.4	45.0	45.0	44.3	43.9	44.2	124	117	122	120
USA	44.9	43.0	42.6	42.2	41.5	40.4	39.6	61	113	115	112
Bulgaria	53.0	59.0	n.a.	n.a.	n.a.	n.a.	n.a.	137	156	n.a.	n.a.
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	35.4	36.2	n.a.	n.a.	n.a.	n.a.
Latvia	78.0	62.0	58.0	56.7	51.6	51.9	57.2	202	164	157	151
Lithuania	n.a.	n.a.	n.a.	n.a.	41.6	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Poland	44.8	46.9	47.2	n.a.	n.a.	n.a.	n.a.	116	124	128	n.a.
Romania	n.a.	59.0	58.0	63.0	n.a.	n.a.	53.0 ^{a)}	n.a.	156	157	167
Slovakia	32.1	43.0	44.0	44.8	48.2	47.0	n.a.	83	113	119	119
Slovenia	42.9	49.1	49.7	48.9	47.2	47.4	47.8	111	130	134	130
Czech Republic	n.a.	29.6	33.8	35.6	35.4	30.8	32.0	n.a.	78	91	95
Turkey	33.4	28.7	28.2	28.8	29.3	n.a.	n.a.	86	76	76	77
Hungary	59.7	54.8	52.4	n.a.	28.8	29.1	28.7	155	145	142	n.a.
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

*weighted by the entire health expenditures
**only public expenditures
***expenditures on fund hospitals
a)2001, b)1994, c)1992, d)1991
Sources: WHO Health for all database, January 2003; OECD Health Data, August 2002 for Ireland, Portugal, Sweden, United Kingdom and USA; Health Care Systems in Transition (HIT) for Lithuania, Poland and Slovakia; Federal Ministry for Social Security and Generations and Statistik Austria for Austria; IHS HealthEcon calculations 2003.

Table A2: Expenditures on pharmaceuticals in percent of total expenditure on health								Index EU15=100						
	1990	1995	1996	1997	1998	1999	2000	1990	1995	1996	1997	1998	1999	
Austria	10.7	10.8	10.7	13.6	14.3	15.3	15.4	68	69	68	85	89	90	
Belgium	15.5	16.3	15.6	16.3	n.a.	n.a.	n.a.	99	105	100	102	n.a.	n.a.	
Denmark	7.5	9.1	8.9	9.0	9.2	9.0	9.2	48	59	57	56	57	53	
Germany	14.7 ^{a)}	12.5	12.6	12.7	13.2	13.5	13.6	93	81	81	80	82	80	
Finland	9.4	14.0	14.4	14.8	14.6	15.1	15.5	60	90	92	93	90	89	
France	16.8	17.5	17.5	17.9	18.5	19.2	20.1	107	113	112	112	114	113	
Greece	14.5	17.3	17.9	17.1	14.0	15.8	18.4	92	112	114	107	87	93	
Ireland	11.3	9.7	9.6	9.3	9.7	9.9	9.6	72	63	61	58	60	58	
Italy	21.2	20.9	21.1	21.3	21.8	22.2	22.6	135	135	135	133	135	131	
Luxembourg	14.9	12.0	11.5	12.6	12.3	11.7	n.a.	95	77	73	79	76	69	
Netherlands	9.6	11.0	11.0	11.0	11.4	11.6	11.8	61	71	70	69	71	68	
Portugal	24.9	23.2	23.6	23.5	23.5	n.a.	n.a.	158	150	151	147	145	n.a.	
Sweden	8.0	12.5	12.9	12.8	n.a.	n.a.	n.a.	51	81	82	80	n.a.	n.a.	
Spain	17.8	17.7	18.2	19.0	n.a.	n.a.	n.a.	113	114	116	119	n.a.	n.a.	
United Kingdom	13.5	15.3	15.6	15.9	n.a.	n.a.	n.a.	86	99	100	100	n.a.	n.a.	
EU15*	15.7	15.5	15.6	16.0	16.2	17.0	n.a.	100	100	100	100	100	100	
EU12*	16.5	15.7	15.9	16.2	16.3	17.2	n.a.	105	101	101	101	101	101	
Switzerland	10.2	10.0	10.0	10.3	10.2	10.5	10.7	65	64	64	65	63	62	
USA	9.2	8.9	9.2	9.7	10.3	11.3	12.0	58	57	59	61	64	67	
Bulgaria	12.3	17.4	23.5	23.4	23.8	n.a.	n.a.	78	112	150	147	147	n.a.	
Estonia	n.a.	n.a.	17.0	17.0	18.7	19.4	22.3	n.a.	n.a.	109	107	116	114	
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Lithuania	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Malta	16.0	15.0	15.0	22.0	n.a.	n.a.	n.a.	102	97	96	138	n.a.	n.a.	
Poland	12.6	15.6	8.9	n.a.	n.a.	n.a.	n.a.	80	101	57	n.a.	n.a.	n.a.	
Romania	11.0	17.0	19.0	17.0	20.0	n.a.	n.a.	70	110	121	107	124	n.a.	
Slovakia	16.8	28.0	30.1	29.7	28.7	28.3	n.a.	107	181	192	186	178	167	
Slovenia	10.4	18.9	17.4	17.9	18.9	19.0	19.6	66	122	111	112	117	112	
Czech Republic	21.0	25.6	25.5	25.3	25.5	26.5	25.2	134	165	163	159	158	156	
Turkey	20.5	30.1	26.3	27.8	34.7	n.a.	n.a.	130	194	168	174	215	n.a.	
Hungary	5.0	24.1	24.8	24.8	32.7	32.1	33.2	32	155	158	155	202	189	
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	

^{a)}1992

*weighted by the entire health expenditures

Sources: WHO Health for all database, January 2003; Oecd Health Data, August 2002 for the USA; Health Care Systems in Transition (HIT) for Bulgaria, Malta, Polen and Slovakia; HVSV and Statistik Austria for Austria; IHS HealthEcon calculations 2003.

Table A3: Expenditures on physician services in percent of total expenditure on health

	1990	1995	1996	1997	1998	1999	2000
Austria	19.1	19.5	19.5	21.4	21.5	21.4	21.4
Belgium	n.v	n.v	n.v	n.v	n.v	n.v	n.v
Denmark	15.8	16.0	15.7	15.7	15.7	15.2	15.2
Germany*	9.9 ^{a)}	9.8	9.7	9.9	9.9	9.9	9.9
Finland	25.1	24.7	24.6	24.2	24.4	24.3	24.2
France	12.8	12.9	12.7	12.8	12.8	12.7	12.5
Greece	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	15.2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Italy	19.8	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Luxembourg	21.6	14.2	12.6	13.2	12.2	n.a.	n.a.
Netherlands	9.6	8.6	8.5	8.3	8.2	8.2	8.2
Portugal	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Sweden	14.4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Spain	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
United Kingdom	14.9	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
EU15	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
EU12	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Switzerland	14.9	14.2	14.0	14.1	14.5	14.5	14.2
USA	23.1	22.7	22.4	22.5	22.7	22.7	22.5
Bulgaria	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Latvia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Lithuania	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Romania	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Slovakia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Slovenia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Czech Republic	n.a.	n.a.	n.a.	24.5	22.9	n.a.	n.a.
Turkey	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hungary	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

*1992-2000: new calculation of health expenditures 2001

^{a)}1992

Source: OECD Health Data, August 2002; HVSV and Statistik Austria for Austria; IHS HealthEcon calculations 2003.

Table A4: Characteristics of health care provision, 2000 or most recent year available

	Admission, rate per 100 inhabitants.	Average length of stay in days	Cases treated/bed	Physicians per 1,000 inhabitants	Dentists per 1,000 inhabitants	Pharmacists per 1,000 inhabitants	Nursing staff per 1,000 inhabitants	Per-capita physician visits
Austria	29.2	7.6	43.9	3.1	0.5	0.6	5.8	6.7
Belgium	19.7 ^{b)}	11.4 ^{b)}	38.1 ^{c)}	4.1	0.7 ^{b)}	1.4 ^{b)}	10.8 ^{d)}	7.4
Denmark	19.4	6.6	57.2 ^{a)}	3.2 ^{a)}	1.0 ^{a)}	0.5	13.5 ^{a)}	7.0 ^{b)}
Germany	23.5	11.9	30.8	3.6	0.8	0.6	9.3	6.5 ^{d)}
Finland	26.7	10.3	30.8 ^{e)}	3.1	0.9	1.5	21.8	4.3
France	23.0 ^{a)}	10.8 ^{c)}	48.9 ^{a)}	3.3	0.7	1.0	6.7	6.5 ^{d)}
Greece	15.4 ^{b)}	8.3 ^{b)}	36.1 ^{c)}	4.4 ^{a)}	1.2 ^{a)}	n.a.	2.6 ^{h)}	n.v
Ireland	14.8	7.4	47.6	2.2	0.5	0.8	16.8	n.v
Italy	16.5	7.6	36.2 ^{b)}	5.7 ^{a)}	0.6	1.0 ^{a)}	n.a.	6.0 ^{a)}
Luxembourg	19.4 ^{f)}	15.3 ^{d)}	n.a.	2.5	0.6	0.7	7.6	2.8 ^{b)}
Netherlands	9.4	12.9	26.8	3.2	0.5	0.2	13.0	5.9
Portugal	12.0 ^{b)}	9.0 ^{b)}	37.8 ^{b)}	3.2	0.4	0.8	3.7	3.4 ^{b)}
Sweden	16.5	6.4	42.0 ^{d)}	2.9 ^{a)}	1.5 ^{c)}	0.6	8.4 ^{a)}	2.8 ^{c)}
Spain	11.5 ^{c)}	9.6 ^{d)}	36.5 ^{c)}	3.3	0.4	0.8	3.7	n.a.
United Kingdom	15.1 ^{b)}	9.8 ^{d)}	50.0	1.6 ^{g)}	0.4 ^{h)}	0.6 ^{h)}	n.a.	5.4 ^{b)}
EU 15*	18.4	10.0	39.6	3.5	0.6	0.8	7.9	6.0
EU 12*	19.1	10.2	37.1	3.9	0.6	0.8	7.8	6.2
Switzerland	16.9 ^{b)}	13.0	21.5 ^{j)}	3.5	0.5	0.6	7.8 ^{j)}	11.0 ^{h)}
USA	12.4	7.0 ^{a)}	40.1	2.8 ^{a)}	0.6 ^{a)}	0.7 ^{d)}	8.3 ^{a)}	5.8 ^{d)}
Bulgaria	15.4	11.5	21.1 ^{a)}	3.4	0.8	0.1	4.7	5.4 ^{a)}
Estonia	20.4	9.2	28.2 ^{a)}	3.2	0.7	0.6	6.3	6.7
Latvia	22.1	11.4	25.4 ^{a)}	3.2	0.5	n.v	5.2	4.8
Lithuania	24.7	11.2	28.1 ^{a)}	4.0	0.7	0.6	8.0	6.3
Malta	20.2 ^{c)}	4.6 ^{c)}	n.a.	2.7	0.4	1.9	3.7	n.a.
Poland	15.5	8.9	26.1 ^{a)}	2.2	0.3	0.6	5.3 ^{j)}	5.4
Romania	22.4	8.9	n.a.	1.9	0.2	0.1	4.0	5.1
Slovakia	19.9	10.2	30.0	3.2	0.5	0.4	7.5	15.7
Slovenia	16.8	8.6	30.9 ^{a)}	2.2	0.6	0.4	7.0	6.8
Czech Republic	20.0	11.6	31.3	3.4	0.6	0.5	9.2	14.8
Turkey	7.8	5.9	37.6	1.2	0.2	0.4	2.4	2.4
Hungary	25.6	8.9	34.6	3.6 ^{a)}	0.6 ^{a)}	0.5	2.8	21.8
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.	n.v	n.v	n.a.
Beitritt13*	14.8	8.2	32.1	2.1	0.4	0.4	4.2	6.1
MOEL10*	19.2	9.6	27.8	2.6	0.4	0.4	5.4	8.5

a)1999, b)1998, c)1997, d)1996, e)1995, f)1994, g)1993, h)1992, i)1991, j)1990; *weighted by population 2000.

Sources: WHO Health for all database, January 2003; OECD Health Data, August 2002 for cases per bed and all classification figures for the USA; IHS HealthEcon calculations 2003.

