International Journal of Technology Assessment in Health Care, **16:2** (2000), 303–324.

HEALTH TECHNOLOGY ASSESSMENT IN AUSTRIA

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Abstract

The Austrian healthcare system relies mainly on physicians in private practice and on various services provided by hospitals. The social health insurance scheme is compulsory, covering 99% of the population. The system is very decentralized. While the federal state provides the framework, the nine autonomous provinces are responsible for administering health and social services. There is ongoing public discussion about centralizing the healthcare system to make it more efficient and to enforce structural reforms. Because of concerns about healthcare expenditures, in 1997 the Performance-Related Hospital Financing System (LKF), a system similar to the diagnosis-related group system, was introduced for hospitals, including a plan for large medical devices. It is too early to evaluate the success of this new system, although some effects of the LKF system that could have been anticipated, such as shortened lengths of stay and more hospitalizations, have been seen. Previously, health technologies have been almost uncontrolled in Austria. The evaluation of health technologies as an instrument to support or to control their dissemination and use or to help define policies is not institutionalized or systematically used. It seems clear that structural reforms of the Austrian healthcare system are needed. Health technology assessment should be part of such reforms.

Keywords: Technology assessment, biomedical, Delivery of health care, Austria

Austria is a small country located in the middle of Europe, with a population of 8 million inhabitants. Some 1.6 million (20%) people live in the capital city of Vienna, while 880,000 (11%) live in other major cities.

Austria has always been economically linked to Germany, its most important foreign trade partner. As with most European countries, Austria has a market economy. Agriculture contributes about 2.8% to the gross national product (GNP), industry is about 36.6%, and the service sector, 60.9%. GNP per capita in 1995 was US $20,773, well above the average for the European Union (EU) of US $16,964.

Austria joined the EU in 1994. Reduction of public spending through substantial stabilization programs has been at the top of the political agenda, in order to meet the criteria of the EU's Maastricht agreement. Annual inflation in 1996 was about 1.9% (meeting the EU's Maastricht treaty criteria), but the public deficit was about 4.3% of GNP, above the Maastricht target of 3%. The public gross debt was 71.7% of GNP, above the 60% target set by the Maastricht agreement. Despite stabilization programs, unemployment according to 1995 figures was 4.3%.

Since Austria became a parliamentary democracy in 1955, the government has consisted either of coalitions of conservatives and social democrats or of social democrats only. Austrian internal politics was shaped by the social partnership (*Sozialpartnerschaft*), a cooperative model including all relevant interest groups in major political

decision making, and by the idea of access and provision of social services to all inhabitants.

Both concepts are now under discussion. *Sozialpartnerschaft* can be an inflexible and ineffective way of finding solutions to societal problems, such as the need to make effective structural reforms in the healthcare system. In 1996 budgetary constraints resulting in cuts in the distribution of social services were implemented by a coalition government. In general, there is little difference between the two major parties, especially concerning social and health policy.

There is ongoing public discussion about centralizing the healthcare system to make it more efficient and to enforce structural reforms. While the reorganization of health care is being debated, access to it—based on a principle of solidarity (*Solidaritätsprinzip*)—is not under dispute by any political party.

Austria is divided into nine provinces that oversee social services and healthcare matters.

THE HEALTHCARE SYSTEM

The Austrian healthcare system relies mainly on physicians in private practice and on various services provided by hospitals. It has tried to lessen the extremely sharp distinction between intramural and extramural (or private practice) care by means of a number of reforms in the 1980s aimed at an integrated healthcare approach. In order to control rising costs, a federal regulatory body was set up in 1978. In 1997, major reforms based on the "15a agreement" (4) between the federation and the provinces were implemented. These reforms were intended to shift the emphasis from hospital to outpatient and nursing home care by building alternative provider institutions, integrate social and medical services, and reduce hospital costs through reimbursement of performance-related cases instead of flat-rate payment for hospital days without relation to diagnosis or treatment. With the introduction of the care allowance in 1993 for the disabled and/or the impaired elderly, the potential for establishing a market for private home care services increased.

Constitutional Basis and Legal Background

The Austrian healthcare system is based upon and regulated by three laws: the Austrian Federal Constitution (*BundesVerfassungsGesetz*), the General Social Insurance Act (*Allgemeines SozialVersicherungsGesetz*), and the Federal Hospital Act (*Kranken AnstaltenGesetz*), with the latter adapted to nine Provincial Hospital Acts (14). The Austrian Federal Constitution states that the provision of health care is a public concern and describes the distribution of responsibilities between the federal state and the nine provinces. The federation is responsible for legislation of fundamental principles, while provinces are responsible for legislation to execute and administer the laws.

The General Social Insurance Act regulates access to the individual social and medical services. The social security scheme is compulsory and covers 99% of the population. The Federal Hospital Act and the nine Provincial Hospital Acts stipulate that every province must provide hospital facilities and nursing and medical treatment for persons requiring institutional care by operating suitable public hospitals, or by agreements with bodies operating other hospitals in its territory. The communal authorities are responsible for social services.

Administration and Organization of the System

The Austrian healthcare system is very decentralized. While the federal state provides the legal framework, the nine autonomous provinces are responsible for administering health care

and social services. Each province presides over a healthcare administration, and provincial authorities make decisions about provincial hospital plans, the number of beds, and the use of large medical equipment and devices. Through the preparation and authorization of budgets, the provincial authorities influence the structure of hospital services. The health insurance agencies do not influence this structure. They and the Austrian Chamber of Physicians regulate the number of doctors in private practice through contracts with physicians and coverage policy.

Until mid-1997, two ministries, the Ministry of Health and the Ministry of Social Affairs, were responsible for health care and social services. Organizational and financial aspects of the provision of health care and of social services were treated almost independently of each other. In May 1997, the ministries became one unit, the Ministry of Work, Health, and Social Affairs, allowing for future cooperative forms of social and medical services.

In 1996 (2;17;26;27), there were 325 hospitals with about 75,200 beds. About half of the hospitals with 80% of the beds are public or nonprofit hospitals and are subsidized by public funds. While 93% of those beds are acute care beds, only 52% of beds in private, profit-oriented hospitals are for acute care. At present, hospital beds are provided by the following bodies and in the following proportions: provincial authorities (51%), religious orders and communities (17%), communes and associations of communes (17%), health insurance agencies (8%), private individuals and associations (6%), and federal authorities (1%). There are about 10 beds per 1,000 inhabitants, with a range between 6.4 and 13.6 beds, depending on the province.

The Federal Hospital Act makes an often imprecise distinction between seven different categories of hospitals: general hospitals provide 64% of the total number of beds, and special hospitals provide 27%; other categories are convalescent homes, nursing homes, maternity hospitals, and sanatoriums. The general hospitals are also differentiated according to local circumstances between standard hospitals (1 per 50,000 to 90,000 inhabitants), regional hospitals (1 per 250,000 to 300,000), and central hospitals (at least 1 per province with over 1 million inhabitants). Depending on the type of hospital, certain specialized departments must be operated.

The recent Federal Hospital Plan considers these categories, and, as part of the reform, seeks the closing of inpatient stations, the uniting of regional hospitals, and the redesignation of acute care hospitals to nursing homes and rehabilitation centers. For this reason, the reform concept is called the "closing down plan." It is proposed that 1,000 acute care beds should be reduced by the year 2005. The seriousness of health reform and the need for intramural cost reductions can be illustrated by the fact that the province of Styria wants to close 988 acute care beds.

According to the Federal Hospital Act, the provinces' health and financial administrations have the final word. Cooperation between nearby hospitals is increasing; for instance, in the Clinicum southwest, three hospitals in one region will be operated at three locations, but with only one site offering a specialized inpatient station.

Until 1996, hospitals were reimbursed by health insurance at a flat rate payment per day, independent of diagnosis and therapy. This income counted for only one-third of the hospitals' actual costs. The remaining two-thirds were covered by the Hospital Cooperation Fund, by the communities, and by the provinces. This reimbursement system proved to be ineffective in reducing lengths of stay and costs. In 1997 the so-called Performance-Related Hospital Financing System (*Leistungsorientierte Finanzierung* [LKF]) was introduced, without any corresponding educational program to help clinical departments think about cutting costs. This means that reducing costs in intramural care will take time, despite the introduction of LKF.

Payment for Services

The healthcare system is financed partly through contributions to the health insurance agencies, the compulsory Social Security scheme (59%), and partly by general taxes. Physicians in private practice are given health insurance checks by patients (prior to consultation), which employees and their relatives receive from their employers, and which the unemployed receive from the labor market administration.

The physicians—contract-bound to one of the 19 health insurance agencies—are reimbursed on either a fee-for-service or a flat-rate basis, depending on the service. Until 1996, hospitals were reimbursed by flat rate per day, and since 1997 by the LKF. For the patient there is no transparency in the costs of the services consumed. Patients pay a small sum (42 Austrian schillings [ATS] or approximately US $4) for pharmaceuticals, an amount per hospital day (ATS 150 or about US $15), and since 1997, ATS 50 per health insurance check. About 1.1 million Austrians have private insurance in addition to the national compulsory health insurance.

In 1995, 9.6% of the GNP was spent on the healthcare system. Austria spends as much as Germany and Switzerland, well above average expenditures for health care by countries in the Organization for Economic Cooperation and Development and in the EU (19). As in other EU countries, the intramural sector shows the fastest increase in health costs: with a yearly increase of 10%, about 46% of all health expenditures goes for hospital care. While expenditures for intramural care are average, costs for outpatient care in hospitals are one of the lowest in Europe. Austrians are referred more often to hospitals (frequency of accommodation, 25.6/100 inhabitants) than in any other European country, but the average stay (10.3 days) is less.

Figure 1 shows the financial flows in the Austrian healthcare system.

Problem Analysis and Reform Proposals

Demographic developments challenge all Western healthcare systems to provide medical and social services for an increasing number of elderly (Austria: 1995, 20%; 2020, 26%; and 2050, 33% above 60 years). In response to this challenge and to the problem of increased expenditures, especially for inpatient medical care in recent years, and of structural deficits and problems in coordination, government health and political aims were outlined in 1990 (22). These included:

- New orientation in hospital financing on the basis of performance related fields;
- Cut-back in acute care beds;
- Transfer of medical services from inpatient and outpatient stations to medical practitioners in private practice and to home care services;
- Creation of extramural organizational forms such as group or team practices and day clinics; and
- New conceptualization of the whole healthcare system as an integrated social-medical system whose aim is to work more efficiently.

In 1997 the LKF was implemented. A health plan for hospitals (and acute care beds), including a plan for large medical devices, was developed. A countrywide network for Integrated Health and Social Services (*Gesundheits-und Sozialsprengel*) was established. Educational reforms for health professionals were undertaken. To improve prevention, the Healthy Austria Fund was given a substantial budget.

Particular Problems

The highly decentralized system that allocates responsibilities not only to the nine provinces but also among departments made national strategies to achieve greater efficiency of social

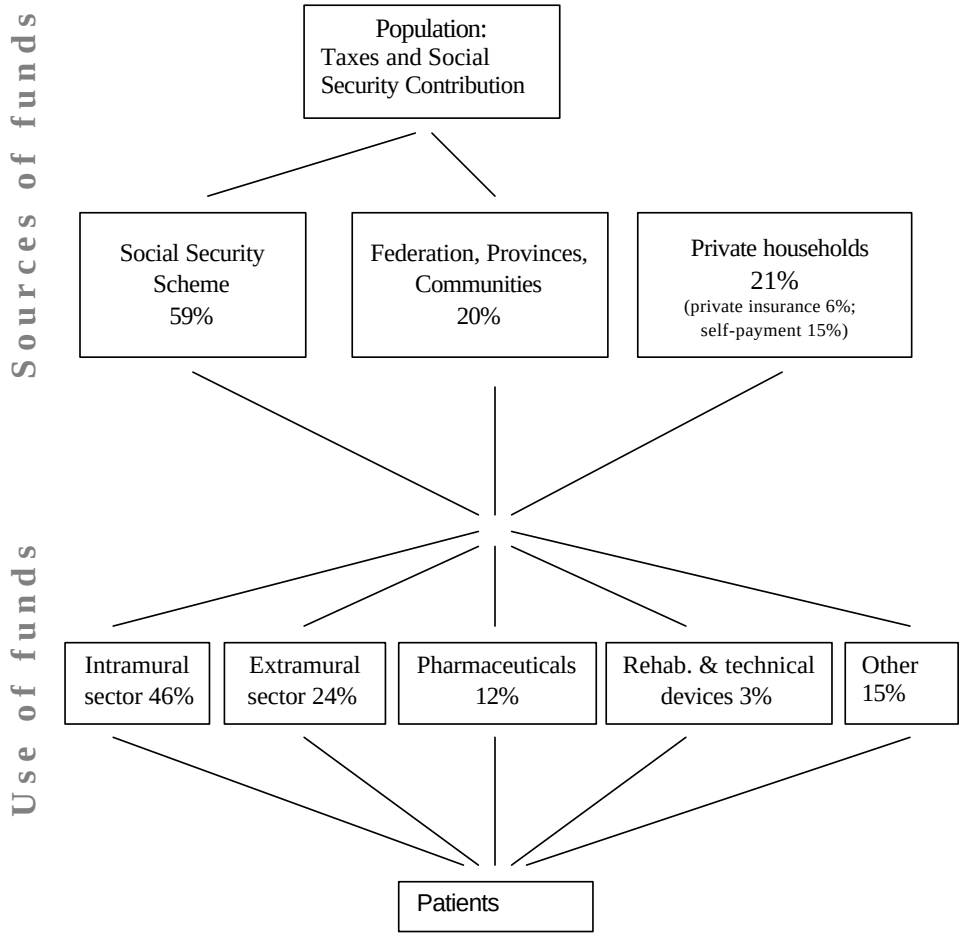


Figure 1. Financial flows in the Austrian healthcare system. From ÖBIG (22).

and medical services very difficult. Problems include the lack of cooperation between intramural and extramural caregivers and the lack of graded facilities or long-term care and home care for the severely impaired elderly. The redesignation (including developing organizational models for coordinating social and medical services) of acute care beds to convalescent and nursing home beds is intended to release hospitals from long-term care and to reduce expenditures.

HEALTH TECHNOLOGIES: MECHANISMS FOR CONTROL

As in other European countries, health technologies have been almost uncontrolled for a long time in Austria. The dissemination of new technologies was either explicitly supported or at least not hindered. Now, however, much time and effort is put into thinking about control measures that work. On a continuum of measures that regulate the dissemination and use of health technologies in Austria, those that control rather than support the purchase and use of new technologies, procedures, and methods are becoming a matter of priority.

Recent Policies

Pharmaceuticals and medical devices have been regulated since 1997 by permission for market access. New methods can enter the health market through professional training of

https://doi.org/10.1017/S0266462300101023 Published online by Cambridge University Press

Table 1. Regulatory Mechanisms for Health Technologies in Austria

Level of regulation	Content	Aim	Regulatory body
Implicit measures support	Support by professional training and information Guidelines	Influence employment of health technologies	Clinical training Conferences Hospital management
Support	Fee-for-service reimbursement	Ensuring equality & high quality of provision	Fee commissions of health insurance agencies and Chamber of Physicians
Support	Reimbursement of home care services Care allowance	Cooperation between sectors Support of private market	Health insurance agencies Long-term Care Allowance Act
Control & support	Permission to enter the market	Ensuring safety and effectiveness of pharmaceuticals and medical devices	Medical Devices Law, Pharmaceutical Law
Control & support	Evaluative research, Delphi on medical & socioorganizational developments	Increasing efficiency and effectiveness Quality assurance	R&D policy: clinical and socioeconomic research
Explicit measures control	Control of amount of contracts given to physicians by health insurance agencies	Keeping number of physicians in private practice (with contract) static, only slightly growing	Plan for physicians in private practice with contracts by health insurance agencies and Chamber of Physicians
Control	Investment control of acquisition of health technologies	Reducing number of pieces of equipment	Formerly KRAZAF, now Hospital Plan/Large Device Plan
Control	Control of placement of health technologies	Ensuring equality of access to health technologies	Formerly KRAZAF, now Hospital Plan/Large Device Plan
Control	LKF: reimbursement of performance-related cases	Reducing use of health technologies in hospitals	Health insurance agencies Provinces' health administration
Control	Change of reimbursement		Health plan—in preparation

Source: Wild (28).

physicians and other healthcare professionals, reimbursement strategies (LKF, 1997), and a dissemination plan (1997) aimed at controlling the acquisition of new equipment and reducing the use of medical services in hospitals. These controls, on the whole, do not exist for the private practice healthcare market (Table 1).

The relevance of health technology assessment as a contribution and an instrument for health technology regulation will be discussed later.

Utilization and Quality Control

Professional training is of great importance for physicians' employment of techniques, methods, and technologies. To change professional behavior, clinical guidelines or information on best practice are said to be influential, if they are released and edited by specialists themselves. The *Österreichische Ärztezeitung* (the major Austrian publication for physicians) has institutionalized a series called *The State of the Art*, in which specialists write on the

best-known practice and clinical management of different diseases (20). In 1993, 20 *State of the Art* papers were published, while 19 were published in 1994, 16 in 1995, only three in 1996, and (as of June) only one in 1997 (20). Knowledge about best practice is also spread by clinicians to younger colleagues in more actively managed hospitals, although in a less systematic and undocumented way. For example, radiologists try to share their expertise on indications for the many different diagnostic procedures in order to reduce the often unnecessary demand for radiological images. This low-level information flow will possibly increase with LKF reimbursement, since the interdisciplinary exchange on necessary and/or unnecessary procedures in the treatment of diagnosed diseases will become more important to hospital management.

Fee Setting in the Private Practice Sector

It is well known that fee-for-service reimbursement, received for most services performed by physicians in private practice, increases rather than decreases services. Income is an incentive for physicians in private practice to offer many services. As in other countries, in Austria low technology methods are less well reimbursed than high technology methods. Physicians working with more sophisticated technologies can have a much higher income. Radiologists are at the top of the income pyramid, with general practitioners and pediatricians at the bottom. This situation evokes the term supply-induced demand.

The impact of introducing the care allowance in 1993 (25), based on estimates that a private market for home care services for the elderly would develop, is not as great as intended. Reasons include the fact that elderly people may spend their care allowance on private investments rather than on care services. The generation of Austrians born before or during World War II are not in the habit of spending money on formal care, which would require strict quality controls (such as what qualifications are needed to do what kind of service) on private services in some communities. New ideas to support the development of a market for private home care service, currently under public discussion, include the distribution of vouchers instead of cash for formal or informal care giving.

Between 1% to 20% of all people over age 65 receive financial benefits because they require long-term care. The care allowance differentiates seven categories of severity of impairments. The care allowance is paid as a flat-rate compensation for extra expenses incurred by the need for care. In 1996, 265,000 people received the allowance. Fifty-three percent of these were classified as category 2 and received about ATS 3,700 (US $370) per month for 75 hours of nursing care. Only 0.9% were classified as category 7 (eligible for a practical immobility care allowance) and received ATS 21,000 for 180 hours of nursing care.

Regulation of Pharmaceuticals and Medical Devices

The Pharmaceutical Law (1;3) requiring permission to enter the national market was adjusted to meet EU recommendations in 1994. The Ministry of Work, Health, and Social Affairs authorizes new and innovative pharmaceuticals. In contrast to the former strict national control procedure, a decentralized introduction model (based on that used in other EU countries) became effective in 1995, allowing pharmaceuticals to enter the national markets. EU authorization is now required for all pharmaceuticals produced with biotechnological methods. Other new and innovative pharmaceuticals can be registered—after clinical trials on safety and efficacy and proof of advantages over registered pharmaceuticals are presented—either nationally or throughout the EU.

The prices of pharmaceuticals are regulated in Austria. They can only be bought in registered public pharmacies (of which there are 996) or in rural areas from physicians with stocks of drugs (976). About half (51.4%) of all permitted and registered pharmaceuticals are

obtainable only by prescription. Patients must pay ATS 42 per prescription (fee exemptions are possible). About 20% of pharmaceutical costs for the health insurance bodies are covered by the patients themselves.

The Medical Products Law (18;23), recommended by the EU, is now being implemented. It complements the pharmaceutical law insofar as it will regulate the introduction of medical devices and products to the market, a process previously more or less uncontrolled (electro-technical devices have been regulated only in regard to their safety and irradiation). The Austrian medical products law takes EU recommendations into consideration, so that only small adaptations are necessary. The law also complements the 1994 Genetic Engineering Law in cases where quality assurance in laboratories, permission for genetic tests, etc., is lacking.

The medical products law regulates medical devices (e.g., radiological equipment, surgical laser, endoscopes, catheters, etc.), daily requirements in medical practice (sticking plaster, bandages, infusion instruments, etc.), medical implants (cardiac pacemaker, hip implants, intraocular lenses, etc.), technical aids for the disabled and the elderly (prostheses, wheelchairs, etc.), and in vitro diagnostics (HIV tests, pregnancy tests, laboratory equipment, blood [-group, -sugar, -clotting] measuring devices and sensors, etc.).

For permission to enter the market, demonstration of safety and clinical effectiveness (in comparison to possible alternative methods) and notification of authorities about problems will be required in the near future. A European register for medical devices was begun in 1998; however, the register's impact is not yet known. Commissions of healthcare experts have been established to monitor the law's implementation in order to guide and administer its practice. Ethics commissions (theoretically existing in each hospital), whose main task is surveillance of new pharmaceuticals' clinical testing, may become more active. Austria participates in EU regulatory programs for pharmaceuticals and medical devices.

Attempts to Channel Research

Biomedical research is carried out at medical universities or at technical universities (located in Vienna, Graz, and Innsbruck). There are also about 100 institutions carrying out theoretical and applied medical research. A variety of autonomous institutions, such as the Austrian Academy of Sciences (with four research institutes in the area of geriatrics) and the Ludwig-Boltzmann Society (30 research units in medicine and health), are also doing research. In 1994, one-fourth of the national research and development (R&D) budget (ATS 3.9 million) was devoted to medical and health research. Because biomedical research is increasingly important worldwide, a commission of the Austrian Society for Biomedical Engineering was created in 1990 to develop a research and technology program for biomedical engineering. In 1994 the Technical University in Vienna acknowledged the increasing importance of biomedical research and development by establishing the working committee TU-BioMed, which coordinates all biomedical activities at the university. At present 29 research groups participate in TU-BioMed.

However, in Austria there is no systematic approach to collecting evaluative knowledge for decision making on health care. Of course decision makers at different levels instruct research institutions to carry out evaluations on the effects of innovations or, more frequently, they are convinced by researchers to do so, but the decisions made often rely on specialists or expert commissions. There is no policy to channel biomedical research in a direction thought to be desirable.

Regulations on Placement and Large Devices

Because of the fragmentation of responsibilities, the desire to create a functional control and planning instrument resulted in the establishment of the Hospital Cooperation Fund

(*Krankenanstalten-Zusammenarbeitsfonds* [KRAZAF]) in 1978. The KRAZAF ended its work in 1996. Its planning task was taken over by the Austrian Health Plan in 1997. This health plan consists of the Hospital Plan (*Österreichischer Krankenanstaltenplan*) for 1997–2005 (21), including the Large Devices Plan (*Grossgeräteplan*) for 1996–98, and a rudimentary plan for hospital outpatients, physicians in private practice, home care, and rehabilitation.

The KRAZAF (1978–96) regulated hospital expansion and the approval and purchase of expensive medical devices. Only the public and public-subsidized (nonprofit) hospitals—50% of hospitals with 80% of all beds and 93% of acute care beds—were and are covered under these measures. The KRAZAF was financed by the health insurance agencies (1996: 58.8%), by the federal state (22.8%), by the provinces (10.7%), by communities (7.2%), and by the capital return of the Hospital Cooperation Fund (0.5%). Financial resources increased from ATS 2.6 million in 1978 to ATS 18.5 million in 1996. After long and difficult political negotiations among federal authorities, provincial authorities, and the social insurance agencies, increases were agreed upon.

The KRAZAF aimed to give financial support to hospitals, to serve as a national control and planning instrument for the Austrian healthcare system, and to prepare reforms (15). The KRAZAF was considered highly ineffective in reducing hospital costs: although the Fund had some power over investment decisions, all public hospital deficits were paid through a so-called yearly compensation payment made by the KRAZAF, the provinces, and the communities. There was no incentive for hospitals to reduce costs. On the contrary, two university hospitals (in Vienna and Graz) were able to purchase gamma knives without KRAZAF approval, at a time (1992) when there were only 31 gamma knives worldwide. Additionally, while health economists estimated that the Austrian healthcare system needed four lithotripters, there were 17.

The KRAZAF Large-device Studies (1989–90 and 1992–93) and the 1997 Large-device Plan

In 1988, 10 years after establishment of KRAZAF, the Fund's commission initiated a large-device study. It began with a survey of the actual number of devices and the proposals for further investments in coming years. A follow-up study was carried out from 1991 to 1992. The commission was made up of medical specialists and experts in the fields studied. Its task was to give guidance about needs and location before approving investment in new medical technologies. Criteria for the classification of large devices were and are (16):

- High purchase costs (ATS 5 million and above);
- Use in routine care (pure research devices not included);
- Highly specialized fields of use and special indications;
- Need for specialized competence to use the devices adequately; and
- High yearly operating costs.

Table 2 describes the devices included in the first and second KRAZAF study (1990 and 1993). With the introduction of the LKF, KRAZAF was disbanded and the Large Devices Study Commission was replaced by the Large Devices Plan (GGP), a part of the Hospital Plan. The GGP, based on the studies' recommendations regarding empirical data and placement proposals, was staffed by healthcare researchers, not by specialists. It is more restrictive in its planning for further investments. The recommendations of the KRAZAF Commission were based on equality in provision, economics, and quality of care (based on centers of expertise).

Table 2. KRAZAF Classification of Large Devices

Diagnostic devices
CT
MRI
ECT
COR
DSA
PET
Therapeutical devices (RT)
Cobalt units
Linear accelerator
Circular accelerator
ESWL

Source: KRAZAF (15;16).

Table 3. GGP 1996 Standard Values

Groups of devices/ procedure	Average travel time (in min)	Standard values for individuals	Population per large device (June 1996)
CT	30	38,000–58,000	41,807
MRI	60	128,000–192,000	132,275
DSA	60	120,000–180,000	123,187
COR	N/A	200,000–300,000	273,517
ESWL	N/A	520,000–780,000	672,396
ECT	60	80,000–120,000	88,668
PET	N/A	2,150,000–4,840,000	N/A
RT	120	160,000–240,000	310,336

Abbreviation: N/A = not applicable.
Source: ÖBIG (22).

The GGP recommendations also take into account the potential for regional cooperation and the effects on the provision of care in the private practice sector (Table 3). Standard values were used to calculate the need for large devices for the Austrian population, according to the actual and optimal employment of such devices. These calculations took into account Austrian and international expert advice and values in comparable European states. In some areas (radiotherapy [RT], positron emission tomography [PET], and coronary angiographic centers [COR]) the standard value for individuals is based on morbidity and indication-supported needs. Additionally, the GGP recommended placement of the devices. Table 4 shows the number of large devices in Austrian hospitals and in the private practice sector.

Since 1989, when the first data collections on large devices were made in Austria, there has been an expansion in use, especially of diagnostic imaging equipment in hospitals, following the recommendations of the two KRAZAF studies. Between 1989 and 1992, the number of computed tomography (CT) devices doubled; between 1992 and 1996, the increase was 30%. The number of magnetic resonance imaging (MRI) devices grew 400% in the last seven years (1989–96), and digital subtraction angiography (DSA) devices doubled in this period. The data on emissions computed tomography (ECT) are somewhat misleading since for the years 1989 and 1992 other gamma cameras were included, but by 1996 these were no longer considered large devices. If gamma cameras were included (there are about 20 in Austria), growth would have been 300% within 7 years. For coronary angiographic equipment, there was an increase between 1989 and 1992, but in 1996 two more coronary angiographic centers were established.

Table 4. Number of Large Devices in Austrian Hospitals and in the Extramural Sector in June 1996

	CT	MRI	DSA	COR	ESWL	ECT	RT	PET
Public & public-subsidized hospitals	96	26	58	24	12	67	26	0
Private (acute care) hospitals	16	6	6	1	0	3	0	0
Extramural care & rehabilitation centers	81	28	1.5[a]	4.5[a]	1	21	0	0
All large devices in Austria	193	60	65.5	29.5	13	91	26	0

[a] Hybrid devices (0.5 DSA & 0.5 COR).
Source: ÖBIG (21).

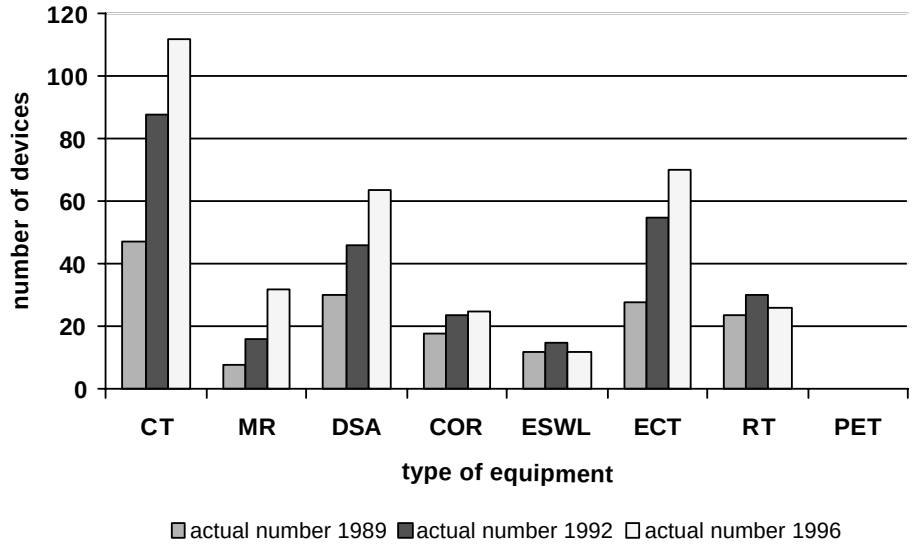


Figure 2. Development of large devices in hospitals: 1989, 1992, and 1996. From *Grossgeräteplan 1996*. ÖBIG: Wien, 1997, unpublished update.

Developments in the fields of lithotripsy and RT were different. Austria was oversupplied with extracorporeal shock wave lithotripsy (ESWL) devices (hospitals purchased them for reasons of competition and prestige). Endoscopic surgery was introduced without having been considered by the KRAZAF Study Commission or by the actual purchasing hospitals. Although expansion was recommended in 1992 based on need, the slow increase in purchase of RT equipment was due to very high investment costs. Two PET scanners were purchased in 1998.

Capacities in the private practice sector regarding CT, MRI, and ECT expanded even more than did the number of large devices in hospitals. No KRAZAF recommendations or investment restrictions hindered this development; on the contrary, the health insurance agencies' coverage policy of rewarding high-technology medicine supported it. The number of CTs increased more than 400% between 1989 and 1996, ECTs by 700%, and MRIs by 1,000%. The 112 CT devices in Austrian hospitals compare with 81 CTs in private practice (with MRIs at 32 and 28, respectively).

A further expansion of diagnostic imaging devices can be foreseen. According to a survey under the GGP, 18 radiologists in private practice intended to buy a CT in 1998, and another 36 intended to invest in MRI (Figures 2, 3, and 4).

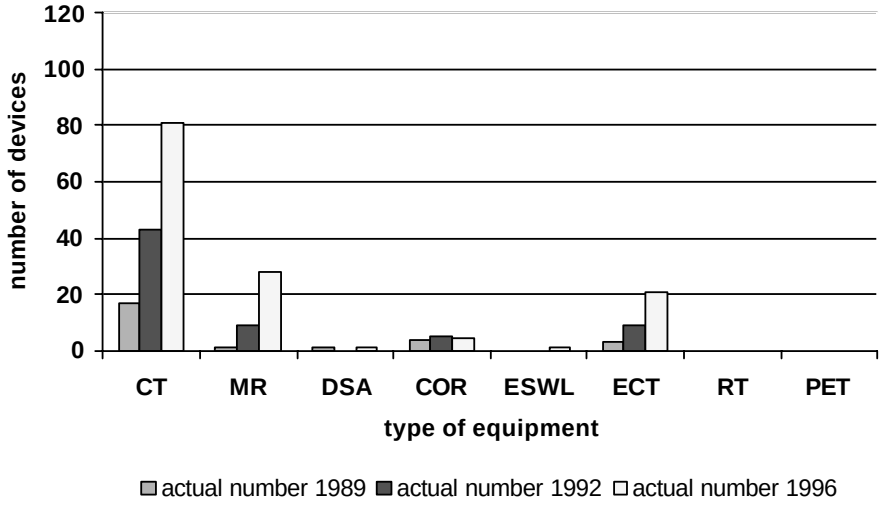
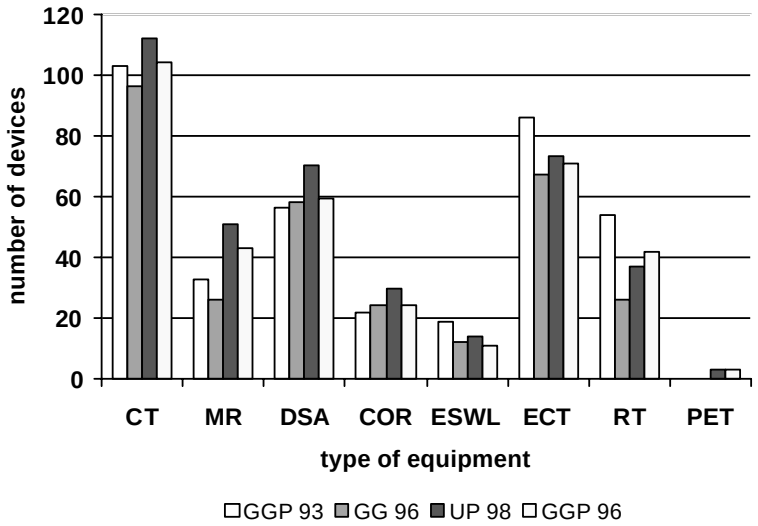


Figure 3. Numbers of large devices in the extramural sector: 1989, 1992, and 1996. Equipment in COR column is part of rehabilitation centers. Four devices listed in the ECT column are in rehabilitation centers. From *Grossgeräteplan 1996*. ÖBIG: Wien, 1997, unpublished update.



GGP 93 – large devices plan 1993 according to KRAZAF- BP study, 1992–93
GG 96 – large devices actual numbers per June 30, 1996
UP 98 – user plans for large devices until end of 1998
GGP 96 – large device plan, 1996 until 1998

Figure 4. Numbers of large devices in public and public-subsidized hospitals: comparison of actual numbers and planning. From *Grossgeräteplan 1996*. ÖBIG: Wien, 1997, unpublished update.

Other devices were not included in the GGP (1996–98) but are being considered: picture archiving and communication system (PACS), combined devices for DSA/percutaneous transluminal angioplasty for interventional surgery, ESWT, and pressure chambers (under debate). The circular accelerator has been removed from the list, and the CT may be taken

off as well. While the plans are binding and definite for public hospitals and sanctions will be imposed for violations, the plans have only the status of recommendations for private hospitals and for-profit acute care hospitals.

Planning for the use of large devices is supposed to be coordinated with plans for outpatient departments, performances and services of contract-bound physicians in private practice, home care services, and rehabilitation. These plans exist only in rudimentary form. Planning in the private practice sector is hindered by lack of data on performances and services delivered in different specialized fields, as well as by a lack of international models. Other countries try to regulate this sector by strengthening the position of the general practitioner as a care manager, but this is not under discussion in Austria.

Coverage of Hospital Costs

The LKF (1997) replaced the old system that paid an average flat rate per day. The first steps to reform the reimbursement system in hospitals were taken in 1989, committing all hospitals to code all patient diagnoses with the ICD-9 classification. The LKF system was introduced in 20 reference hospitals and became obligatory in January 1997.

The new system is based on a costs-per-case-related payment. Groups of cases are classified according to resource use, where resources are expressed in monetary terms. The classification system has identified 1,850 performance-related cases, based on patterns of diagnostic, therapeutic, and demographic variables. Each performance-related case has a certain number of points (LKF scoring). The value of one point is fixed by the provinces' health administrations, depending on factors such as the type of hospital, medico-technical equipment, personnel, etc. For example, CT is assigned five points, bone marrow transplantation scores 250 points, heart transplantation 200 points, kidney, liver, and pancreas transplantation 150 points, and microsurgical interventions of the ear 40 points. The hospitals are reimbursed, according to the number of claimed points, by the Province Fund, to which the health insurance agencies, the federation, and the province have paid their fixed proportion in advance.

Expectations of the new reimbursement system are high; shorter lengths of stay in hospitals and more transfers from inpatient to outpatient care are supposed to contain hospital costs. By mid-1998, the results of the LKF system showed the well-known effects of diagnosis-related group (DRG)-type systems, namely reduced lengths of stay but increased hospitalizations, a shift toward high-scoring diagnoses, and so forth.

Moving from the continuum of implicit support measures to explicit control measures, the explicit control measure of rationing is not being considered. Equal accessibility to healthcare services for all and solidarity in the compulsory health insurance scheme are unquestioned values. Objectives and intentions of reform are based on the principles of ensuring public financing of the healthcare system for the future and ensuring that financing control does not hurt the poor, the disabled, and the elderly.

SPECIFIC POLICIES RELATING TO SPECIFIC TECHNOLOGIES

Health Promotion: Screening

The compulsory social security covers health screenings for several categories of the population: school children (6 to 15 years), adolescents (15 to 19 years), all adults (19 and above), and expectant mothers and newborns (7).

While 60% of adolescents make use of the offer (17), only 8% (in 1994) of all adults participate in screenings for early detection of common diseases such as arterioscleroses, cardiac diseases, high blood pressure, diabetes, diverse carcinomas (cervical, breast, etc.), diverse metabolic diseases, and chronic diseases of respiratory organs.

The mother-and-child health card covered by the social security agencies and the Family Burdens Equalization Fund includes not only monthly check-ups during pregnancy and of the newborn baby, but also examinations of the young child up to the fourth year. In the past, a state incentive payment in four installments totaling ATS 15,000 was linked to the compulsory examinations. This system, which was used by 90% of all expectant mothers, helped decrease infant mortality from 14.3/1,000 live births in 1980 to 7.8/1,000 in 1990. Despite this positive development, the financial incentive was discontinued in mid-1996.

Immunization

There is no compulsory vaccination in Austria. Participation in vaccination is encouraged through extensive information campaigns and recommendations. Vaccination of small children is obligatory in connection with the mother-and-child health card certificate. The following vaccinations are proposed by the Highest Sanitary Council: tuberculosis, diphtheria and tetanus, poliomyelitis, pertussis, measles, mumps, and *Haemophilus influenzae* type b (17).

Immunization policy relies on distribution of information on the effectiveness of vaccination. While immunization for poliomyelitis and diphtheria-tetanus-pertussis is at 90%, it is only 60% for measles-mumps-German measles. Vaccinations are not covered by health insurance agencies, but some communities, such as Vienna, occasionally offer free vaccinations.

Genetic Diagnosis

Human genetic examinations with gene analytic methods are regulated by the Genetic Engineering Law (6). In this area of regulating genetic analysis, Austria (together with Norway) leads the way in international developments. The law covers ethical as well as psychosocial aspects. It is important to note that tests made using gene analytic methods are regulated, while the common, widespread, and more numerous human genetic examinations with zytologic or biochemical methods (80%–90% of all amniocentesis, chorionic villus sampling, umbilical puncture) are not regulated.

The law concerning genetic analysis requires that it can only be carried out in registered institutions and for medical purposes; examinations can only be carried out with the informed consent of the patient; extensive counseling must take place before and after the diagnosis; the counseling has to be nondirective, and it must be stressed (in writing) that it is entirely appropriate for patients to consult with a psychotherapist or a social worker; in prenatal examinations, only severe diseases—no unrelated characteristics—may be diagnosed; and employers and insurance groups are not allowed to use, ask for, or collect results of gene analyses.

In Austria seven institutions are registered for counseling on human genetic diseases, of which only two carry out examinations with gene analytical methods themselves. The demand for prenatal chromosomal analysis is steadily rising, as a result of the increased number of mothers above age 35, though this number is still smaller in Austria (34% of women above age 35 asked for a prenatal test) than in other European countries (in Germany and Denmark, it was 60%–70%). Demand for gene analytic examinations remains the same. Counseling and (pre-, post-, carrier status) diagnoses of families at risk are still a small percentage. There are no screenings of populations offered in Austria. While conscientious counseling before and after diagnosis of persons at risk takes place, almost no directive counseling on the consequences of prenatal chromosomal analysis is offered. If the result is positive, 95% of women decide to abort the embryo. Gene analytical as well as chromosomal analytical diagnoses, counseling, and medically indicated abortion are covered by health insurance agencies.

In Vitro Fertilization

In vitro fertilization (IVF) is regulated by the Reproductive Medicine Law (3;5). While artificial insemination and insemination using semen from a third person (without asking for payment) is allowed, the following is forbidden:

- The donation of ovular cells to or from another woman;
- Medically supported reproduction using the semen of a dead husband;
- Artificial insemination of women living on their own or in a same-sex relationship; and
- Profit-oriented trade with semen, ovular cells, viable cells, and surrogate mothers.

Since childlessness is not considered a disease by Austrian health insurance agencies, IVF is not covered and the costs of artificial insemination have to be borne by the couples. Though IVF may be offered by all registered gynecologists, it is usually offered by private clinics. The cost of a single insemination attempt is ATS 15,000 to 40,000.

Transplantation

Transplantation is explicitly supported in Austria. A Coordination Office for Transplantation (member of Euro-Transplant) was opened to support organ exchange, information and data exchange, and documentation on transplantation activities (24). Informally, it was intended to reduce competition among transplantation centers in hospitals and to enforce communication in order to coordinate supply and demand for organs. On the legal basis of the Federal Hospital Act, physicians are allowed to explant organs from brain-dead persons as long as there is no documented rejection of organ transplantation. Rejection of transplantation is not in the general public awareness: there are only 3,000 people (0.04% of the population) registered in the Austrian rejection register, very few compared with countries with a similar legal situation. This situation reflects the passive position of Austrian patients in medical activities.

Candidates for transplantation are chosen according to the various allocation criteria of Euro-Transplant, not by age. Exclusion of the elderly from transplantation is not under debate. Research funds for biomedical engineering support research on artificial organs and materials. Transplantations are covered by the health insurance agencies (Table 5).

HEALTH TECHNOLOGY ASSESSMENT

The terms health technology assessment (HTA) or medical technology assessment are not currently used in Austria. Evaluation of healthcare technologies—as an instrument to support or to control the dissemination of health technologies or their employment or to define differentiated policies—is not institutionalized or systematically used. Nevertheless, some elements of HTA are carried out, especially at universities and academic institutions. The following discussion on the potential for HTA in Austria describes a systematic analysis of the institutions that offer evaluative knowledge on healthcare (less on clinical research) and those that are or might be interested in or demand HTA as a decision support instrument.

Development of Interest: Evaluative Research

In May 1997 the first Austrian conference on public health was held, which can be considered the first step in coordinating socioeconomic health disciplines and reflective, evaluative medical sciences. However, there is no pre- or postgraduate public health education in Austria. The 130-member Austrian Society of Health Sciences and Public Health decided in June 1997 to enforce "health promotion and prevention, health economics, planning, organisation and management, epidemiology and health reporting." These activities show

Table 5. Diffusion of Organ Transplantation in Austria

Year	Heart	Heart & Lungs	Liver	Lungs	Kidney	Pancreas
1971					17	
1972					34	
1973					63	
1974					95	
1975					85	
1976					61	
1977			1		72	
1978					70	
1979					92	1
1980			1		93	1
1981			2		106	
1982			7		156	1
1983	1		14		151	5
1984	8		18		233	7
1985	16	1	28		238	8
1986	36	3	30		280	11
1987	38	5	57	1	351	24
1988	43	3	32		306	8
1989	53	3	56	3	411	7
1990	77	5	80	17	424	11
1991	64	4	60	20	396	8
1992	84	6	66	26	322	14
1993	105	5	91	33	386	16
1994	91	4	96	33	350	12
1995	108		109	28	305	8
1996	104	1	131	28	363	8
Sum	828	40	879	189	5,460	150

Source: ÖBIG (23).

that there is a will to establish a network of Austrian research institutions working in similar fields, for the purpose of establishing coordination, strengthening certain capacities, decreasing competition, and creating long-term cooperation.

National and Regional Research Institutions

The Austrian Federal Institute of Health Care (*Österreichisches Bundesinstitut für Gesundheitswesen* [ÖBIG]), the research institution of the Ministry of Health and Social Affairs, is the main planning body in the Austrian healthcare system. The Hospital Plan, the Federal Hospital Act, and the GGP were carried out and are now administered by the ÖBIG with the provinces. It is the methodological principle to base planning primarily on computations, seldom on qualitative evaluations of alternatives. The institute, consisting of a staff of 50, is concerned with planning hospital capacities, physician staffing, curriculum and database development, and information and documentation maintenance. The head of the institute found "no demand for incorporating HTA as a work task, since it is an academic discipline." The ÖBIG is at the interface between supply and demand: it can influence political reforms by presenting innovative ideas in reform papers or data interpretations. The fact that ÖBIG has the monopoly on research money given by the Ministry of Health hinders other institutions working in the field of health research.

In cooperation with the World Health Organization (WHO), Austria has taken an active part in the International Network of Health-Promoting Hospitals since 1993 and in 1996 established an Austrian Network of Health-Promoting Hospitals, which has many different projects. Forty hospitals have conducted about 50 health-promoting and quality-assuring

projects. Because of this initiative, quality assessment in healthcare settings, coordinated by the Ludwig Boltzmann Institute for Medical Sociology, has become well known. At the heart of quality assessment is the evaluation of the providers and personnel of health promotion and care institutions.

A focus on quality management and quality assurance in healthcare institutions, implementation of external controlling mechanisms to assure minimal standards, and measures taken to maintain and improve high-quality standards must be seen in the context of the recent hospital reform and the fears expressed about loss of quality.

The Institutes of Social Medicine at the Universities of Graz and Vienna concentrate on research on the epidemiology of common diseases. There is growing interest in clinical assessments and epidemiology among the departments of medical informatics (at the university hospitals of Vienna and Innsbruck) and some specialized clinicians, but no working task has yet been defined. There are no databases or registers with results for clinicians to consult. No Cochrane Centre has been established. Health economic research is carried out at several academic sites, within departments of economics.

Biomedical research is carried out either at medical universities (Vienna, Graz, and Innsbruck) or at the technical universities, as mentioned before. There are about 100 institutions carrying out theoretical and applied/clinical medical research. In 1994, a cooperative program involving 29 research groups in biomedical engineering (TU-BioMed) was established at the Technical University of Vienna. Two years later, following biomedical developments, a social science research focus began at the Institute of Technology and Society, with the aim of shaping biomedical developments early in the developmental process.

Since the early 1990s, at the Institute of Technology Assessment (ITA) at the Austrian Academy of Sciences a small research field has been devoted to HTA. In this interdisciplinary institute with a staff of nine researchers and a yearly budget of ATS 10 million, only two researchers work in the field of HTA (28). Since ITA's focus lies in telecommunications/information technologies, biotechnology, environmental technology, and medical technologies, selection of health technologies for study is strongly influenced by the staff's capacities and expertise. Most assessments were qualitative rather than quantitative; comprehensive socioeconomic assessments were carried out on medical information technologies (patient card, PACS), on social-organizational extramural technologies for the elderly (neighborhood initiatives, counseling for house adaptation, alarm systems, living arrangements to keep the elderly integrated in communities, SeniorNets, etc.), and on pre- and postnatal genetic diagnoses (8;9;10;11;12;13).

Although the ITA is a nonprofit institution, about two-thirds of the projects are financed by third parties, often national (or increasingly EU) research funds or the Ministry of Science. As mentioned above, the research budget of the Ministry of Health is bound to the ÖBIG, an institution that is not actively seeking cooperation.

Level of Interest and Use of Results

When HTA first began, selection of the technologies assessed was almost always driven by the researchers' judgments and assessments were financed by national research foundations or the Ministry of Science, but the situation has changed in recent years. Technology assessment of PACS was executed based on an order from the financing body for all Viennese community hospitals (*Wiener Krankenanstaltenverbund* [KAV]), which financed the world's first full PACS installation at the Viennese hospital SMZO. Before investing in further PACS installations in other community hospitals, the KAV wished to learn about possible critical points and policy options. For the PACS project, the KAV spent about 1.5% of the budget for a full PACS installation on the assessment. Since the community of PACS users and PACS purchasers is still very small, the results have been distributed to all relevant persons working in this field.

The effects of results from gerontechnology projects financed by national research funds from 1993–96 on different forms of supportive technical aids, technologies, and organizational forms for the elderly were enormous. Responsible for offering services to the elderly, local communities and welfare institutions such as Red Cross or Caritas were interested in data, provided by interviews and statistics, evaluating their work. In contrast to the PACS assessment, where investors were interested in decision options but users (radiologists) and suppliers (especially Siemens) reacted with reservations, users and suppliers were eager to contribute to and receive results from assessments of social services for the elderly.

The Austrian Forecast Technology-Delphi, of which medical and social technologies is one of six fields, is not intended to copy earlier Delphi projects in other European countries (Germany, France, the United Kingdom, and the Netherlands), but to find Austrian niche products worth supporting and, in terms of social technologies, to find organizational models for health care in the upcoming 15 years. While a Delphi project on technology forecast can be considered either as market research or as an early warning system, the latter might be defined as early shaping of organizational structures within health care. The outcome of the expert survey resulted in a paper in early 1998 suggesting technology and research policy. The Delphi technology forecast, requested by the Ministry of Science, received ATS 2 million.

In looking at HTA in Austria, it is obvious that the capacities of the ITA are limited. Although experts (in informatics for PACS projects, in care giving for Alzheimer projects, etc.) are available (depending on funding) for a limited time, no more than two projects can be carried out at a time.

Development of Interest: Politics

In general, public policy makers are not yet aware of the potential for evaluative research, although some decision makers are becoming increasingly conscious of assessments as policy instruments. One of the key players in Austrian healthcare policy is the Minister of Health and Social Affairs, who is responsible for outlining directions and major reforms. She is counseled by the ÖBIG (with its research data) and by the Highest Sanitary Council, a consortium of a few experts. Provincial health administrators (along with financial administrators) are the major decision makers regarding financial investments in large devices, planning of new services, and expanding existing services. The heads of provincial hospital cooperatives also contribute to making decisions on issues, including investments.

These three key decision-making bodies (on different levels) have occasionally asked for evaluative research supported by HTA reports, but not in a systematic way. Decisions on coverage and reimbursement of new performances are made by the Association of Social Insurances and the health insurance agencies in negotiation with the Chamber of Physicians. No knowledge-based evaluations seem to be used by either of the parties. No interest group for HTA within the health insurance agencies could be identified.

The public is rarely involved in decisions on the use of medical technologies. Although patient rights are protected by the Austrian legal system, the patients themselves have far too little understanding of their legal protection due to the system's complexity. Although patients' advocacy groups began in almost all provinces in the early 1990s, their existence is not well known. Public participation, such as consensus conferences, is not practiced.

DISCUSSION AND SUMMARY

Problem Analysis

There are a number of grave problems regarding the control of health expenditures in Austria. The weaknesses of the Austrian healthcare system are all too obvious: because of the decentralization of responsibility to the provincial authorities to administer and control

expenditures and because of the mixed financing (contributions to the health insurances and taxes), there is no direct relationship between the contributions of the insured and the services consumed. Yearly compensation payments made to hospitals by the KRAZAF, the provinces and the communities, until the recent reform, hindered the establishment of economic thinking and gave no incentive for the hospitals to contain costs. The problems in the private practice sector include unlimited demand by patients because of seemingly low costs and supplier-induced demand because of the dominance of the physicians in deciding upon patients' needs.

Because of the system's multimorbidity, the treatment of the diseases is multivariant: the recent hospital reform strives to reduce the demand for services by giving budgets to performance-related cases, but leaves the decisions with physicians. The large-device reform strives to reduce the diffusion of equipment. Coordination of these groups strives to reduce inefficiencies. The introduction of care allowances attempts to ensure social services and long-term care at home for the disabled and the impaired elderly.

Mechanisms That Work (Relatively) Well

Since the recent reforms are still very new, an assessment of their impact proves to be difficult. To judge the impact of strategies to control large devices, in place since 1988, groups of planners are compared. Data on groups consisting of specialists, user/hospital planners, and a planning team of healthcare researchers working with province administration show that the users' wishes are ranked above those of the planning teams, but specialists (in radiology or nuclear medicine) looking at certain areas (CT and RT) rank above researchers and administrators.

It can be concluded that health research and administration teams are the most restricted in terms of planning, because they are less exposed to peer group influences and because they take into account needs and developments in the extramural sector. Additionally, a more long-term planning team is looking not only at current methods but also at upcoming and alternative procedures.

In contrast to the former large-device commission, whose plan had the status of recommendations, the Large-Device Plan is legally able to impose sanctions on hospitals that do not work according to approved plans (e.g., purchasing large devices themselves and incurring deficits). In such cases, the federation has the right to withhold the province's proportion of healthcare public payment. Because of the 1997 reform, which requires that hospital deficits be borne exclusively by the provinces, they are very willing to economize. Provinces are content with the new system, whose guidelines were developed on a federal level, because they can pass on the pressure they receive from clinicians to other higher federal decision makers.

The potential of the Large Device Plan to delay quick diffusion of expensive equipment has to be discussed in relation to other reform instruments or those areas not yet reformed and in relation to international data (Figure 5).

Compared to Germany, with its reputation of being very well equipped with large-device technologies, Austria is in some areas better equipped and possibly overequipped. Compared with other countries (Sweden, the Netherlands, and Switzerland), Austria possesses a higher CT density. In terms of MRI equipment, Austria is behind Switzerland with 7.4 per million inhabitants, but has a higher density than Germany, the Netherlands, and Sweden.

Mechanisms That Might Not Work Well

As mentioned earlier, by mid-1998 the effects of the LKF financing system could be seen on hospital performance. Control systems in hospitals have not been established, and cost control thinking will only develop over time. For this reason possible cost containment

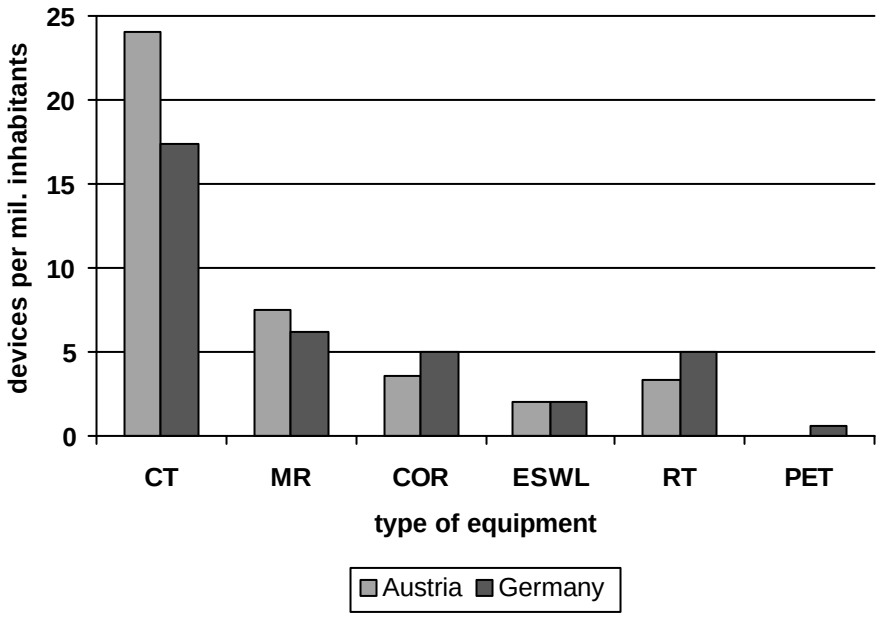


Figure 5. Large devices per million inhabitants in Austria and western Germany (Alte Länder)—Hospitals and extramural sector in beginning of 1996. From *Grossgeräteplan 1996*. ÖBIG: Wien, 1997, unpublished update.

might not occur within the first years of implementation. Some health economists criticize the concentration on performance and diagnosis rather than on the patient (performance related to age and health status).

The Medical Products Law requires the collection of data and information on medical devices, their clinical effectiveness, life cycle, etc. This means data will become available for more detailed evaluations of diffusion and use. Studies on utility and cost-effectiveness will be possible. Since data collection is the prerequisite for planning health services, the Medical Products Law, much like the LKF, will produce enormous amounts of data on clinical performances in relation to diagnosis, creating the potential for further evaluations.

Since a high proportion of healthcare costs is generated in hospitals, where costs have increased up to 10%, all reforms concentrate on the intramural sector, while less concrete effort is made to reform the extramural sector. The exceptional production and oversupply of physicians shows that there are now about 24,000 practicing physicians, with an estimated 28,000 in the year 2000, and 34,000 in 2010. The actual need for physicians is assessed at only 25,000 until the year 2015. This will drive costs beyond reason or cause an automatic regulation of the extramural market. If the health insurance agencies will not take more physicians on contract, which is unlikely, the market will be flooded with private practice physicians, and those without contracts will have to sell their services at competitive prices, driving down costs for the payers or reimbursers. However, physicians will try to compensate in terms of services delivered. In this context fee-for-service reimbursement is an incentive that has to be reconsidered very quickly.

CONCLUSIONS

While the policy for the dissemination and placement of expensive large devices has not been very effective, the new Large-Device Plan may be more so because of its ability to impose sanctions. Hospital reimbursement as an instrument to contain costs will need some time to

prove effective, given the lack of a cost containment culture. Fee-for-service reimbursement is highly inefficient, since it supports supply and consumption without increasing the quality of extramural care. While large devices are regulated more or less strictly, there are no real policies guiding the diffusion of new inexpensive methods or procedures, which can spread unhindered, unevaluated, or unsupported.

The impact of HTA in Austria is difficult to assess, since there is so little systematic work done. Provinces are under pressure to cover hospital deficits, and it is in their interest to get costs under control. It seems plausible that with enforced pressure for rationalization of resource allocation, the need for evaluation will increase.

Suggestions for Change

With no annual negotiations for an overall limited health budget, there is no real pressure for change. None of the introduced reforms is structural: the reforms will possibly be able to freeze costs in the intramural sector, but no effective reforms have been initiated to transfer high-quality services from the intra- to the extramural sector. Further reforms must find strategies to make hospital care not only less expensive but also less necessary (day clinics are not widespread in Austria) or less attractive. As in other countries, health managers (i.e., general practitioners) must be identified and strengthened by reimbursement. Institutions must become a target of healthcare reform.

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