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THE HEALTH CARE SYSTEM IN POLAND

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by
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ABSTRACT/RÉSUMÉ

This paper reviews the performance of Polish health care system from an economic perspective. High on the reform agenda of the government for several years, a new national health insurance system entered into force on 1 January 1999. This reform marked an important shift from a centrally controlled, budget-based system to a decentralised insurance-based system, operating through multiple regional funds and a special fund with nation-wide coverage. The reform is also intended to encourage the development of primary care services and in this context to promote the role of family doctors. However, the new system suffers from certain deficiencies and has not so far attracted active public support. This paper examines some of the efficiency problems, costs issues and equity concerns that remain to be addressed. It presents a series of policy options for further improvement of the system, including ways of enforcing harder budget constraints on health funds and better defining minimum benefit packages.

JEL classification: I10, I18

Keywords: Health, Poland

Le présent document examine, dans une perspective économique, la performance du système de santé de la Pologne. La réforme des soins de santé figure depuis quelques années parmi les toutes premières priorités du gouvernement et un nouveau régime général d'assurance maladie obligatoire est entré en vigueur le 1er janvier 1999. Cette réforme et les mesures qui l'accompagnaient marquaient une nette rupture avec le passé, un système décentralisé, financé selon le principe d'une assurance, géré par l'intermédiaire de caisses régionales d'assurance maladie et par une caisse catégorielle supplémentaire se substituant au système antérieur, contrôlé par l'Etat et budgétisé. La réforme vise aussi à encourager le développement de services de soins primaires et à attribuer aux médecins de famille un rôle plus important. Cependant, le nouveau système s'est heurté à certaines difficultés entraînant un mécontentement croissant de l'opinion. Cette étude examine les problèmes d'efficacité, de coût et d'équité auxquels la réforme est censée remédier. Elle présente un certain nombre de recommandations pour améliorer le système, incluant des moyens d'imposer une discipline budgétaire aux caisses d'assurance maladie et une meilleure définition de ce que constitue un ensemble minimum garanti de prestations.

Classification JEL : I10, I18

Mots-clés : santé, Pologne

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THE HEALTH CARE SYSTEM IN POLAND

Nathalie Girouard and Yutaka Imai¹

Introduction

1. The health care system that Poland inherited in 1990 from the communist era offered universal coverage with a comprehensive programme of health care benefits distributed through facilities owned and run by the state. Although the system provided universal health care coverage, it was over-centralised, over-specialised and did nothing to nurture cost awareness. Regional inequalities, rationing and misallocation of resources emerged, with growing unofficial payments to public health care providers. Increasingly, patients perceived the quality of health care offered by the system to be poor and the general public dissatisfaction has grown. Health care reform has figured high on the government's list of priorities in recent years. Some changes were introduced in the early 1990s, most notably as regards the public health care providers and the role of primary care physicians. A new general obligatory health insurance system entered into force on 1 January 1999. This and accompanying reforms marked a radical change from a centrally-controlled, budget-based system to a decentralised insurance-based system. Implementation of the new system has experienced certain difficulties and social pressures for further changes remain important. A comprehensive law on health care is currently under consideration.

2. This paper first presents the on-going reform of the Polish health care system. The next section examines efficiency problems, cost issues and equity concerns that the reform is expected to address. The last section provides assessment of the reform and suggests policy options for further action.

Reforming the system

Background

3. The current setting of the Polish health care system (see Box 1 and Figure 1) is the result of several reforms since 1990 in the finance, management and organisation of the health sector (see Box 2), which have aimed at changing the nature of this sector and improving the efficiency and quality of care. They include: the abolishment of state monopoly in the health care sector, the decentralisation of ownership and financial and management responsibility to municipalities and regions, the development of a family doctors model, and the creation of new payment and contracting methods. During that period, ownership of some 2 000 public health care establishments was transferred from central to local authorities. Regional governments own most big hospitals, and local authorities polyclinics, specialist

1. The authors are Economist and Head of Division, respectively, in the Economics Department of OECD. An earlier version of this paper served as input into the 1999 OECD Economic Survey of Poland which was published in January 2000 under the authority of the Economic and Development Review Committee. The authors gratefully acknowledge the assistance of Leszek Bartoszuk and Jenzy Ciechanski in the preparation of this paper and would like to thank Jeremy Hurst, Jacek Ruzskosky and Andrzej Rys for helpful discussion about the Polish health care system. We would also like to thank Roselyne Jamin who contributed invaluable technical assistance with tables and graphs, and Nadine Dufour and Doris Schombs who provided expert word processing. Remaining errors are our own responsibility.

clinics, and a few hospitals. Conditions were set for private sector service provision, and by mid-1996 700 contracts for the supply of health services had been signed with medical practitioners in private practices (NERA, 1998). Pharmaceutical companies and pharmacies have been privatised². These policy responses have prepared ground for creating an institutional structure which forms the basis for an efficient health care system. Nevertheless, there remained scope for further increasing the efficiency of health care provision, improving the system to deal with inevitable increases in cost pressures and reducing inequities in terms of access to quality care.

Box 1. Institutional setting of the Polish health care system

The Polish health care system provides services through three tiers of a highly structured network, corresponding in part to the former administrative organisation of the country. The three tiers comprise the central level, the regional level (voivodship), and the communal level (gminas) with autonomous health care administration units (ZOZ). Parallel health services organised on corporatist lines operated independently. At the central level, the Ministry of Health (MH) is directly responsible for national health services and programmes, including hospitals associated with medical academies, medical research institutes, and education and postgraduate training of medical staff. Recent devolution of power to regions and communes, and increasing privatisation within the health care sector have reduced the role of the MH in the provision of health services. Moreover, with the introduction of health insurance, the financing role of the central government has been reduced.

At the regional level, hospitals provide acute care and hospitalisation and usually have an emergency unit. Outpatient health centres provide specialist and primary care. The autonomy of regions and their independence from the MH has been strengthened since 1992 with funding coming directly from the Ministry of Finance.

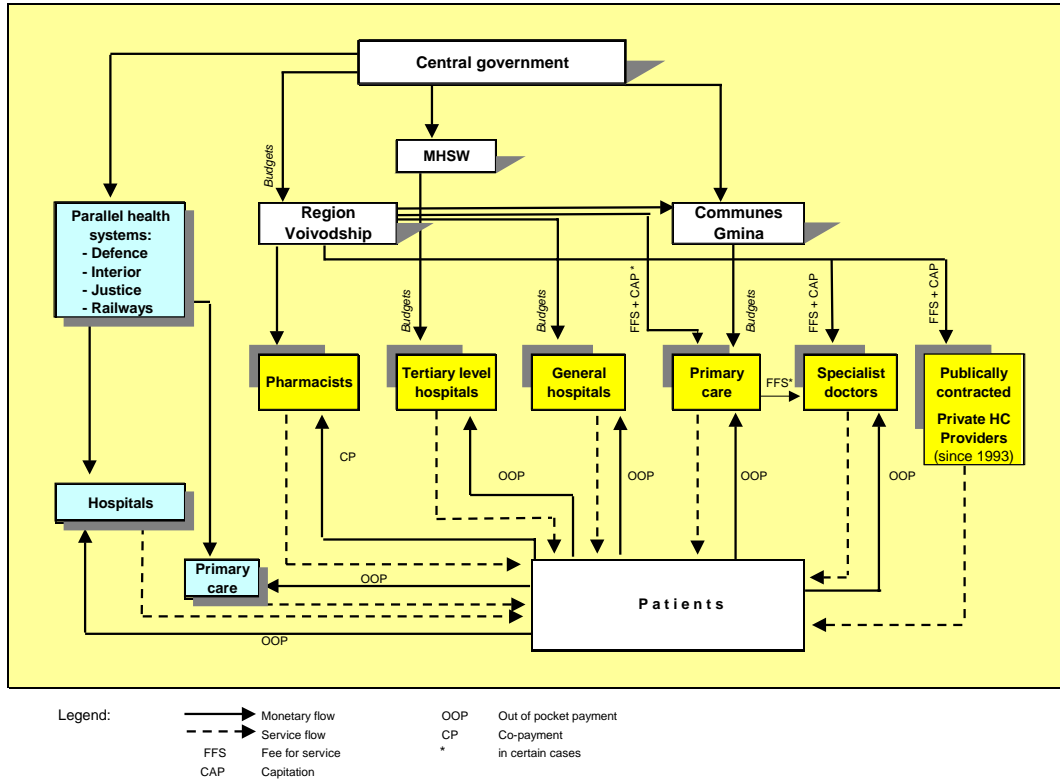
At the local level, autonomous health administration units (ZOZ) were established in the mid-1970s to provide basic health care. A single ZOZ serves a population of 30 000-150 000 people. Primary and secondary cares are vertically connected through ZOZs. Each ZOZ was expected to have at least one hospital and several ambulatory care facilities; however, in practice there are several facilities which only provide outpatient services. Long-term care is provided in both general hospitals and sanatoria. Local hospitals provide extensive outpatient care through specialist outpatient clinics, diagnostic and physiotherapy departments, and emergency services.

Certain government ministries (Defence, Interior, Justice, and Transport) operated parallel health care services for some of their employees and their dependants. These systems provide both ambulatory and hospital care. Expenditure on drugs and salaries are financed through the MH budget, and non-medical salaries, maintenance, and capital outlays are financed through the respective ministries. While these parallel systems offered an additional source of capacity with about 10 per cent of total hospital beds, lack of accountability towards the MH and poor national co-ordination resulted in duplication of facilities and excess capacity.

There is limited private health care provision in Poland, which has developed rapidly over the last years. Private medical practice which existed legally under communism increased sharply in 1988 with the enactment of the Law on Economic Activity and a number of private companies, mostly located in big cities, have opened facilities for ambulatory and hospital care. The majority of them operate on a "fee-for-service" basis. In the mid-1990s, there were several thousand private clinics and some private hospitals.

2. Since 1990, the privatisation of both manufacturers and wholesalers of pharmaceutical products is proceeding gradually. Among the 57 enterprises in the industry, 39 are private, and the remaining state-owned, accounting for more than 50 per cent of the Polish market in 1998. By contrast, pharmacies have been rapidly privatised. Between 1990 and 1997, the ratio of pharmacies in the private sector rose from 44 per cent to 93 per cent..

Figure 1. Organisation of the health care system: pre-reform



Source : National Economic Research Associates, The Health Care System in Poland.

Box 2. A chronology of reform measures in health care

1988 The Act on Economic Activity enabled private practice.

1990 Proposal for a National Health Programme aiming at preserving the features of the system that were being eroded. These included, guaranteeing equal rights for all citizens, access to immediate health care in case of emergency, the continuity of medical services, and the promotion of individual responsibility for health.

1990 Central government devolved ownership, financial, and management authority to local (mainly for primary care) and regional governments.

1991 Act on Health Care Institution abolishing state monopoly in the health care sector: health care institutions could be set up and financed by a wide range of entities.

Act on Payment for Drugs and Medical Materials and privatisation of pharmaceutical market.

1993 Amended National Health Programme.

Urban Pilot Programme: payment, contracting, and management at the local level.

Contracting and payment system experiments.

1994 The Ministry of Health and Social Welfare introduced the Strategy for Health programme aiming at improving the health status of the population, ensuring universal access to health care services, increasing the effectiveness and quality of services by shifting to a decentralised primary health care system, and ensuring stable sources of funding and control of expenditure.

Development of ‘family doctors’, a new model of general practitioner for primary care delivery.

1995 Law on Large Cities and Public Services Zones delegates authority formerly held by the central administration and their provincial governors to municipalities over primary care providers (out-patient clinics, some hospitals).

1996 Amended Act on Health Care Institutions: first registration of independent unit operating according to the provision of Poland’s commercial law allowing private facilities to have contracts with the government.

The National Health Programme voted in Parliament sets objectives for disease prevention and health promotion to be achieved by 2005.

1997 National Health Insurance Act provides new mechanisms for resource mobilisation, resource redistribution through and across the regional insurance funds and a new provider payment system. The new constitution granted equal access to health protection for every citizen.

1998 Amended National Health Insurance Act.

Initial steps to develop new patient-level information systems and a new standardised cost accounting system for hospitals and clinics.

1999 National Health Insurance Act came into force 1st January.

The 1999 reform

4. The new health insurance system which started on 1 January 1999 aims at providing a stable and transparent means to raise funds, through compulsory income-based health insurance premiums from the eligible population or from the state for those unable to make such contributions³. The insurance premium is set at 7.5 per cent of taxable income, deductible from personal income tax. Prior to 1999, health care services were funded by social security contributions, which covered all forms of social insurance without a clear demarcation.

5. Key responsibilities of the health system continue to rest with the Ministry of Health (MH)⁴, such as essential decisions concerning the directions and priorities in health policy, regulatory decisions regarding prevention and treatment measures against the main health hazards, monitoring, assessment and analysis of the health of the population under projects such as the National Health Programme, and provision of certain specialised care.

6. The organisational structure consists of 16 regional health funds (covering at least one million insured each) corresponding to the new administrative division into 16 voivodships plus an additional branch fund⁵ which operates nation-wide. The branch fund was created to cover employees of the Defence, Interior, Justice and Railways sectors. These are non-profit organisations financed directly by insurance premiums collected by the social insurance office (ZUS) and the farmers' social insurance office (KRUS), a share of an equalisation fund, and any subsidies from the MH for specific programmes (see Figures 2 and 3). As of January 1999, residents of each region are automatically members of one sickness fund. There is no opt-out mechanism, but from January 2000 patients are free to change funds including the branch fund. On their part, health funds are allowed to register members living outside the fund's region, so that they are expected to compete with each other for members.

7. Competition between service providers is encouraged with each fund negotiating contracts with public and private hospitals, clinics, laboratories, doctors or other medical professionals following a bidding procedure. Such contract approach involves some form of prospective agreement with health care providers, establishing the terms and conditions of payments for health services. However, specific payment methods are left to the discretion of the individual health funds. With such a variety of supply arrangements, there will be a need for significant effort to monitor and evaluate the effects of different payment regimes.

8. A supervisory Board which consists of representatives of the insured and of local and regional governments governs each regional health fund⁶. But the overall supervision of the financial management of health funds is the responsibility of the Health Insurance Supervisory Office. Its tasks include adopting the statutes and the resolutions cleared by the Boards of the funds, controlling contracts compliance between funds and providers, approving financial reports submitted by the funds, acting as an auditor, controlling premium collection and transfer of contributions from ZUS and KRUS, and developing and implementing a risk-adjustment procedure among funds. Funds are allowed to borrow under the control of the Supervisory Office and the regional authorities.

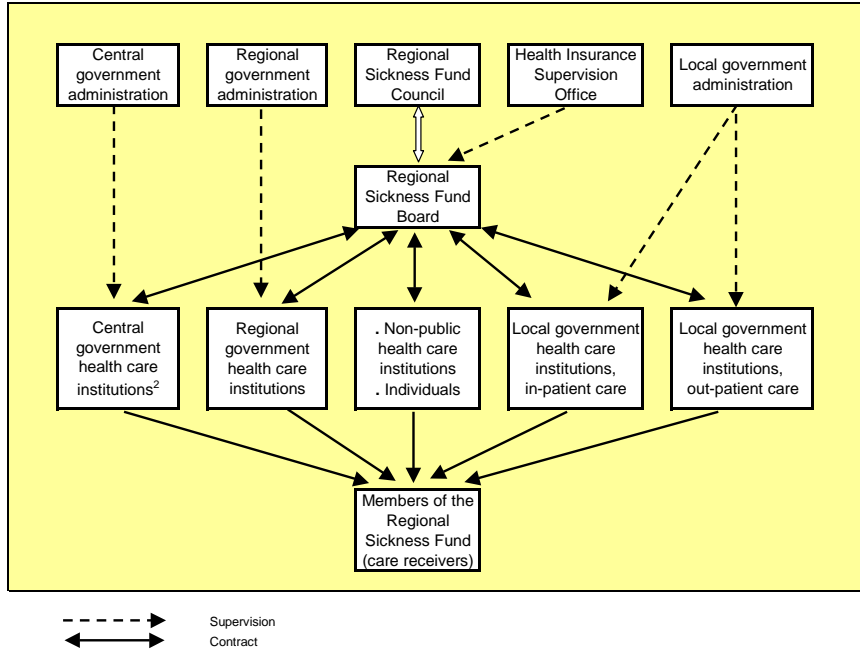
3. The non-paying sector of the population includes farmers not paying personal income tax and unemployed not receiving benefits. See footnote of Figure 3 for more details.

4. Other responsibilities include providing education and post-graduate training of medical staff, financing of major health care investment, and setting standards for medical service quality.

5. The branch fund obligations are the same as those of regional health funds.

6. The Board of the Branch Health Fund consists of representatives of the Transportation Ministry (6), Defence Ministry (6), Interior Ministry (6), Office of the State Protection (1) and Justice Ministry (2).

Figure 2. Regional health funds: institutional arrangements after the 1999 reform¹



1. In addition, there is a fund which operates nation-wide.
 2. Including teaching hospitals, hospitals run by Ministry of Defence and Interior.
 Source: Jacek Ruskowski, Medical Centre of Postgraduate Education, Warsaw.

9. A package of benefits, including basic general and specialist treatment in clinics and hospitals, along with pharmaceuticals and medical materials, is covered by the insurance premium⁷. Co-payment regulations have started to be implemented, or are in preparation, for dental services, diagnostic examination, pharmaceuticals, orthopaedic devices and aids, and medical technical devices. For example, in the case of dental services, the co-payment may not exceed 50 per cent of the total cost, and there is free services for persons under 18 years of age, pregnant women and military invalids. Co-payments are important mechanisms for limiting inappropriate over-utilisation of scarce and expensive resources. If designed and implemented correctly, they can have a large impact on cost-containment, while at the same time avoiding adverse effects on equity.

10. A system oriented towards primary care services is being established, which strengthens the function of family doctors as gatekeepers. Outpatient services in specialist health care centres and hospital treatment are provided on the basis of a referral from a family doctor, with the exception of services provided by clinics such as gynaecology, mental health, drug addict rehabilitation and HIV carriers' care. Each family doctor should not have more than 2 500 patients. Patients are entitled to a choice of any service providers, private or public, registered as approved providers to a sickness fund⁸. However, patients going to private doctors or hospitals which have no contracts with the fund will be charged the cost of the health services provided. A new specialisation as a family doctor has been created, and training is made available both to currently practising physicians as well as to medical students.

11. Measures have been taken to limit the number of specialist on post-graduate training with a target of 50 per cent of specialist and 50 per cent of primary care doctors⁹. Substantial programmes of financial assistance (by PHARE, the World Bank and local governments) to enable family doctors to rent and furnish office space have been put in place. At the same time, the government has introduced family doctor experiments in several regions (see Box 3). While this project has helped to raise the profile of family doctors and encouraged patients to use them as gatekeepers to the health care system, attempts at rebalancing the proportion of specialist and generalist have so far been modest and piecemeal, and results in terms of the cost reduction ambiguous.

12. An equalisation fund has been created to address inequalities in income and health risks across individual health funds with the objective of making all potential members equally attractive in financial terms. In such a system, health funds would have less incentive to recruit members selectively, and all citizens would face similar opportunities of access to care. The Polish equalisation fund amounts to 40 per cent of the income derived from health insurance premiums. The risk adjustment formula currently applied only allows for some basic correction for age and income of the population¹⁰.

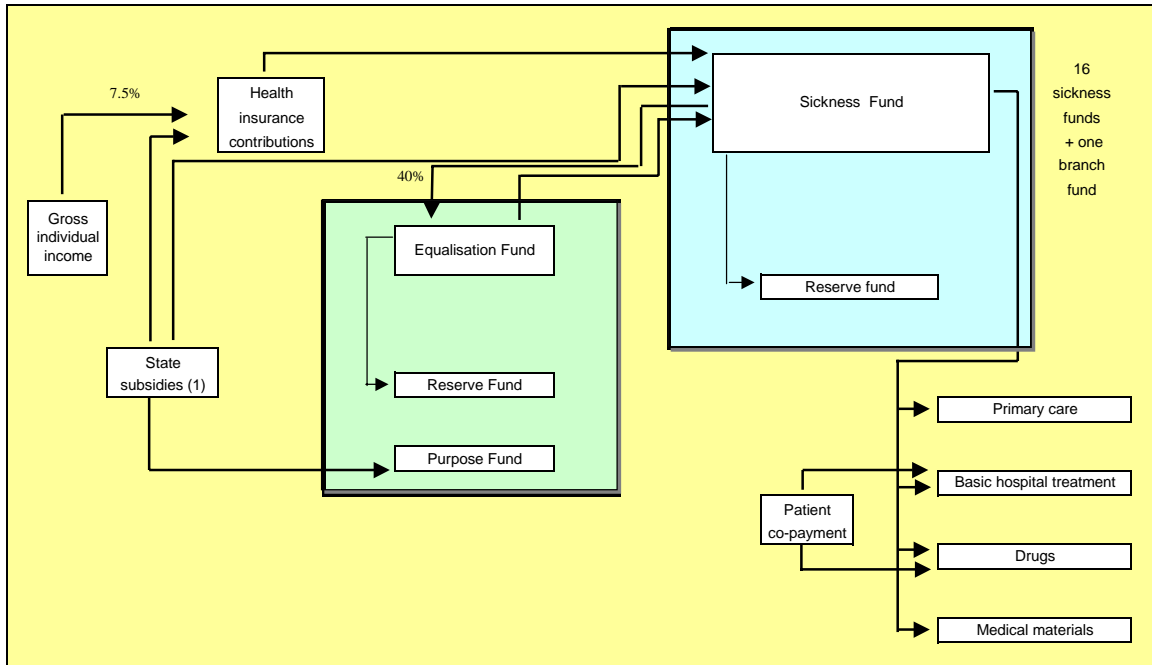
7. It includes diagnostic procedures, care for pregnant women, basic dentistry services, medicines and medical products, orthopaedic aids, health resort treatment for a primary disease or number of diseases and transportation by medical vehicles.

8. There is a charge for changing family doctor within six months of choosing them.

9. Recent regulations on medical professions introduced supply-side measures to restrict the number of specialists resident in medical school training. A specialisation course raising requirements for family doctors has been introduced with a fast track option for those who have already worked extensively in primary care sector.

10. The age correction is established for persons over 60 years old, and the revenue correction is based on average premium rather than individual's premium.

Figure 3 . Financial flows after the 1999 reform



1. The non-paying sector includes unemployed not receiving benefits, farmers not paying personal income tax, some students, persons receiving welfare annuity or allowance, serving soldiers, army, veterans, some pregnant women, children, pupils and students staying at a welfare home and clergymen who have no source of income. Also includes subsidies for specific programmes/projects.

Source: National Economic Research Associates, The Health Care System in Poland.

Box 3. Primary care: Family doctor experiments in Krakow

Experiments to provide primary care through family doctors have been conducted in Krakow City¹. The introduction of family practices in Krakow in 1996 was designed as a pilot exercise to promote family medicine by demonstrating that the quality of services can be enhanced by improved structures and processes. Family practices offer personalised and comprehensive primary and specialist consultation services, diagnostic and laboratory tests, nursing and rehabilitation services, and minor surgery in relatively well equipped clinics with friendly reception and registration services, and competent staff². Contracts are signed between primary care doctors, specialist doctors and hospital departments and either the regional or local authorities. They involve a capitation-based remuneration scheme for doctors with an allowance made for the age structure of the population³. As in the United Kingdom, family doctors are fundholders on behalf of the municipality for most of outpatient services.

The number of referrals to specialists was expected to fall significantly. It did fall but slightly. Problems were encountered with the preparation and signing of contracts reflecting the limited knowledge of the process by doctors and administrators of contracts, due to the lack of model contracts, appropriate standards, general rules of execution, and limited financial support. Differences have also arisen in the interpretation of contracts by the contracting parties.

A recent study by Chawla *et al.* (1998a) on the enrolment procedures of family practices in Krakow found evidence of ‘adverse selection’ by physicians depending on the procedures followed. Two enrolment procedures were used to join a family practice. Initially, individuals were automatically enrolled, unless they notify their refusal. Then, the procedure was revised and individuals had to make a request to be enrolled. Comparison of the two procedures indicated that individuals making a request for enrolment used on average considerably more quantities of health care than those enrolled under the first procedure and that individuals more likely to fall ill signalled themselves by opting for the second enrolment procedure. As a result, physicians had an incentive to avoid enrolling such patients in their practices in order to limit costs they risk incurring in the context of a capitation-based remuneration system. This enrolment procedure may undermine efforts for promoting an effective and equitable primary care system.

These results highlight the importance of developing a capitation payment system carefully. In shifting to a capitation payment system, governments need to look closely at a variety of issues ranging from legal basis of capitation contracts to the determination of the payments, the risk-adjustment, the basket of services and the enrolment of prospective patients. The family doctor experiments offer some prospect for a more efficient primary care sector, but a more concerted effort and additional funding will be required before family doctors can act as effective gatekeepers to the higher levels of health care.

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1. There have been experiments with family doctors in a few other regions of Poland including Suwalki, Pila and Zywiec.
 2. A report published in 1998 by the Harvard School of Public Health (Lawthers *et al.*, 1998) presented the results of a survey on the quality of outpatient services in Krakow. The overall patient evaluation of the services was good, and patients tended to be satisfied with their own doctor. However, the waiting time for doctors on day of appointment was long, reaching 53 minutes on average.
 3. Per capita rates are weighted by age-adjusters of 1.3 for every individual less than 7 years of age, 1.0 for every individual 7 to 59 years of age, and 1.8 for every individual 60 years of age or more.

Problems that need to be addressed by the reform

Improving efficiency

13. A key problem that the reform needs to tackle is inefficiency of the health care system. Increasing efficiency which is low by OECD standards would release resources to reduce waiting times, lower cost pressures and improve consumer satisfaction. Several factors affect the efficiency of the health care system. These include deficiencies in the running of hospitals, insufficient use of primary and preventive care, and remuneration structure which does not reflect performance.

Deficiencies in hospitals

14. The performance of the Polish health care delivery service is affected by inefficiency relating to poor control and management of labour and physical resources in hospitals. Hospital administrators are usually doctors with little or no training in health care management even though an increasing number of them (including non-doctors) are getting managerial training in academic centres and abroad¹¹. As well, in the absence of long-term care hospitals, nursing homes or hospices both acute-care and long-term care patients are treated at the same hospitals, leading to considerable misallocation of resources and higher costs¹². However, short and long-term care beds have been separated since the mid-1990s, which resulted in a decrease in the number of short-term care beds as well as the average number of beds per 10 thousand inhabitants (from 57.2 in 1990 to 54.1 in 1997). And, as in other OECD countries, the average length of hospital stay decreased from 12.5 days in 1990 to 10.1 in 1998, while the average occupancy rate of beds remained virtually unchanged over the last decade. Most of the 700 hospitals in Poland have inadequate capital infrastructure and minimal maintenance of existing building and equipment, which has resulted from a long period of under-investment and was in part due to the failure to make adequate allowance for depreciation¹³. The limited control of stocks of material and the lack of investment in medical equipment over the years have contributed to a lower stock of hi-technology medical equipment than in most OECD countries, including Hungary and the Czech Republic. Modern diagnostic and therapeutic tools are more easily available in some newly built hospitals, academic centres, regional hospitals and private clinics offering inpatient facilities.

15. The information necessary for effective decision-making in the hospital sector has been weak. The poor statistical support adds to the problems. Little is known about the relative costs of different medical treatments, their effectiveness or the costs of caring for individual patients.

16. Prior to 1999, hospital funding was mostly based on historical costs and capacity criteria (such as the number of beds) rather than on local population needs. This has penalised efficient hospitals and put little pressure on inefficient ones to improve. Medical personnel are paid salaries, and the remainder of hospital spending is bulk funded. There are no penalties for overspending¹⁴, and hospitals have large debts mainly to suppliers as there are no spending caps imposed by the MH. Regional and local hospitals have

11. Three Schools of Public Health (Warsaw, Krakow and Lodz) and some other university schools (Warsaw, Katowice and Wroclaw) offer courses leading to qualifications in health care management.

12. This problem is commonly found in other Eastern European countries and is not unknown in some OECD countries.

13. Depreciation allowance was introduced in 1999.

14. The public finance law for 1999 required, however, that hospitals monitor their spending carefully.

been formally transformed into autonomous health administration units responsible for their own budget and more accountable for their expenditure.

Limited role for primary and preventive care

17. Primary care is important in increasing effectiveness of the health care system and controlling costs. Normally, the first contact with the health care system is with the primary doctor or nurse and they can resolve a wide range of health difficulties (OECD, 1995). Primary health care is not, however, well established in Poland, even though polyclinics provided primary care services. Polyclinics were staffed by paediatricians, internists, and several other basic specialists, with frequent use of referrals to other specialists after an initial consultation. But physician practice before the 1990s included no formal general practitioner (GP) in primary care. Despite the introduction of formal regulations on speciality in general medicine since 1993 and of educational programs, GPs are still in short supply. Although the number of physicians per population is comparable to the OECD average, incentives in place have created an over-supply of hospital-based doctors and other specialists accounting for 80 per cent of the total number of physicians¹⁵, and a severe shortage of primary physicians, particularly in rural areas¹⁶ (see Table 1).

18. The very high figure of potential years of life lost in Poland (Figure 4) suggests that preventive care is narrowly focused and not as effective as it should be. Health status is largely determined by the interaction of many factors including genetic susceptibility, behaviour and lifestyle, socio-economic status and environmental conditions (OECD, 1995). Allowing for such factors broadens the scope of government policy to influence health. In particular, a good ability to monitor trends in diseases and sufficient support for the development of integrated programmes to deal with them is important. In addition, as in many OECD countries, the elderly dependency ratio is projected to rise steeply when the baby boom generations start to retire, implying increased need to provide health care to deal with different pattern of diseases, which often involves multidisciplinary teams. In belated recognition of these problems, the Polish authorities adopted in 1996 (6 years after the initial proposal was made) a 10 year National Health Programme aiming at greater disease prevention and health promotion including reducing smoking and alcohol consumption, and improving the early diagnostic of those at risk of heart disease.

Remuneration scheme not geared to performance

19. The remuneration of health workers is relatively low and provides little pecuniary incentives to work. Remuneration for medical professionals is poor not only in comparison with other sectors of the economy but also *vis-à-vis* the rest of the public sector. The average monthly salary in the health sector in 1996 was 84 per cent of the average salary for the public sector. Remuneration of doctors includes basic salary, as determined by the central threshold schedule, and bonuses for seniority and for additional duties such as activities related to health prevention and promotion. Ancillary staffs are remunerated on a similar basis. Salaries are often supplemented by payments for private sector consultations and by unofficial out-of-pocket payments which constituted an important source of earnings for providers, increasing take home pay of all medical personnel by about 15 per cent on average, with a much higher impact on physicians' earnings, according to one estimate (see Chawla *et al.* 1998b). According to the government statistical office, about 30 per cent of doctors practice privately. Many medical professionals seek supplementary employment to boost incomes.

15. The largest numbers of specialists are those in internal medicine and paediatrics (accounting for 21 per cent and 16 per cent respectively of the total).

16. Consultations per primary care physician at around 2 per capita per year reflect the under-use of family physicians.

Table 1. **Indicators of resource use in the health sector**
1996¹

	Physicians per 1 000 inhabitants	Proportion of specialists	Beds for 1 000 inhabitants	Average bed occupancy (per cent)	Average length of hospital stay (days)
Poland	2.4	78.9²	5.5	71.0	10.6
United States	2.6	50.0	4.1	66.0	7.8
Japan	1.8	..	16.2	83.6	43.7
Germany	3.4	62.6	9.6	80.9	14.3
France	2.9	50.2	8.7	81.1	11.2
Italy	5.5	..	6.0	72.0	9.8
United Kingdom	1.6	..	4.5	80.6	9.8
Canada	2.1	42.4	5.1	84.2	12.0
Australia	2.5	36.4	8.7	82.9	15.5
Austria	2.8	54.4	9.2	78.8	10.5
Belgium	3.4	46.9	7.2	83.6	11.3
Czech Republic	2.9	74.4	9.5	77.6	12.8
Denmark	2.9	..	4.9	81.3	7.3
Finland	2.9	56.3	9.2	87.7	11.6
Greece	3.9	55.7	5.0	69.4	8.2
Hungary	4.2	64.4	9.3	76.5	10.8
Iceland	3.0	..	14.8	84.0	16.8
Ireland	2.1	..	3.7	83.2	7.2
Korea	1.2	63.2	4.6	69.6	13.0
Luxembourg	2.2	64.4	10.7	75.0	15.3
Mexico	1.5	45.8	1.1	68.6	4.1
Netherlands	2.6	35.8	11.2	88.7	32.5
New Zealand	2.1	30.4	6.8	57.3	6.5
Norway	2.8	62.9	15.0	82.2	9.9
Portugal	3.0	68.6	4.1	73.9	9.8
Spain	4.2	..	4.0	76.7	11.0
Sweden	3.1	71.1	5.6	81.9	7.5
Switzerland	3.2	35.7	20.6	82.6	25.2
Turkey	1.1	42.1	2.5	57.4	6.3
EU ³	3.1	56.6	6.9	79.7	11.8
OECD ³	2.8	54.2	7.8	77.4	12.9

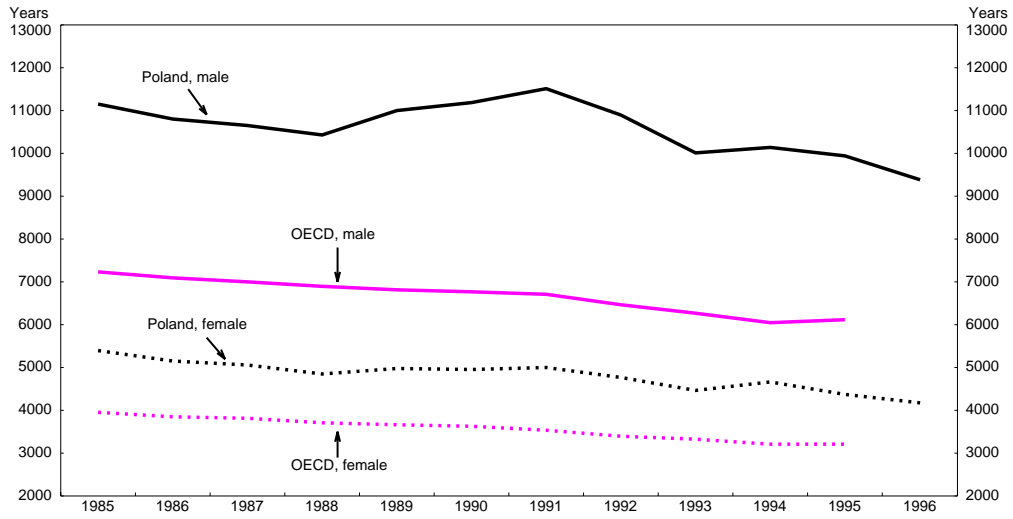
1. Or nearest year available.

2. In 1995.

3. Unweighted average.

Source: OECD (1998), *Health Data*.

Figure 4. Potential years of life lost(1)



1. It is a measure of premature mortality which provides an explicit way of weighting deaths occurring at younger ages, which are, a priori, preventable.
 Source: OECD Health Data 99.

The need for cost containment incentives

20. Health care costs seem low by international comparison, even after allowing for informal payments. But experience of other OECD countries shows that latent cost pressures are strong. The system before the current reform had neither incentive mechanisms for cost control nor good information about costs. A modern standard costing system was only beginning to be introduced in 1998. It is not surprising that the budget was repeatedly overshot, and the health sector incurred a rising indebtedness¹⁷. Moreover, cost-effectiveness concerns are not emphasised enough in the pharmaceutical system.

Spending level in international comparison

21. Total health spending in Poland at 5.2 per cent of GDP in 1997 is among the lowest in OECD countries. The share of public health spending in GDP has been relatively stable since the early 1990s at around 4.5 per cent. The central government budget accounted for about 25 per cent of total public outlays on health care. Since 1992, most of the health care programmes have been financed through the regional budgets, which fund the regional health authorities and a number of independent communes. The regions received their budgets directly from the Ministry of Finance accounting for 75 per cent of total spending in 1997 (see Figure 5).

22. In real terms expenditure on health care rose steadily since 1990. Figure 6 presents per capita levels of national health spending and GDP in OECD countries in 1997, and a regression line relating the two variables. At around \$390 per capita (PPP exchange rate), health expenditure in Poland was well below the OECD average and comparable to that in Mexico and Turkey, though it was in line with what might be expected given its level of per capita income¹⁸. International experience shows that no country is immune to pressures towards higher health care spending. As income levels rise, demand for better health care increases, which is reinforced by advancement in medical technology. Moreover, the ageing of population exerts upward pressure on health care costs.

Pharmaceutical spending

23. Polish public expenditure on pharmaceutical goods per capita (at PPP exchange rate) is fairly low compared to other OECD countries. As in other less developed countries, however, pharmaceuticals

17. By the end of 1998, the overall debt of the health sector was estimated by the MH at around Zł 8-10 billion. As part of the reform process, the state is obliged to eliminate the debts of public health care establishments before concluding agreements with the health funds. Therefore, the Ministry of Finance has announced the debt conversion into treasury bonds and has signed agreement with banks, including Bank Handlowy and BIG Bank Gdanski group, for buying up part of the debt. About Zł 6 billion has been underwritten by the Treasury. The other part will be repaid in cash to suppliers.

18. The level of health expenditure in Poland is higher if unofficial out-of-pocket payments are included. One estimate put a figure of 3 to 3.5 per cent of GDP in 1997, according to a bulletin published by the Government Information Center (Polityka) in January 1999. Such payments are, however, fairly widespread in low-income OECD countries such as Turkey and Mexico and other Eastern European countries, and so are underground activities which make measured GDP smaller than otherwise. Further reasons, the ratio of health expenditure to GDP may not be as inaccurate a comparative measure as one might think.

represent a higher relative burden, reflecting their higher prices relative to the costs of other medical inputs, notably wages.

24. The supply of pharmaceuticals to the health sector has been distorted by unequal treatment of drugs from domestic and foreign enterprises, and this may be reflected in a relatively low share of domestically manufactured medicines, which amounted to 37 per cent of total sales in 1997. The Ministry of Finance sets prices of domestically produced drugs, and determines wholesaler and pharmacist margins. Domestic medicines are estimated to be 3-6 times less expensive than foreign equivalent. Low profit margins contribute to reducing domestic manufacturers' incentives to launch innovative products. The announcement by the Health Minister that the state would withdraw from controlling domestically produced drugs was expected to give an incentive to foreign producers to start manufacturing in Poland. A large anticipatory buying of drugs at the end of 1998 was caused by patients' uncertainty about the new organisation of health care at the beginning of 1999.

25. Regulatory and prescribing practices are not conducive to efficient utilisation of drugs. The registration process is slow and little use is made of cost-effectiveness information¹⁹ (NERA, 1998). The reimbursement process is not fully transparent either. There are no written procedures for applying for inclusion on the MH reimbursement lists. Depending upon the drug, medication is reimbursed at a zero, 50, 70 or 100 per cent rate²⁰. Moreover, doctors are fairly free to prescribe drugs: there were few guidelines to encourage greater standardisation in prescribing practices until the recent introduction of those on the use of antibiotics and generics.

Achieving equity objectives

26. The uneven availability of health care services across Poland suggests that the past financing arrangements and regional supply capacity have not been enough to ensure access for low-income earners or the elderly. In addition, the widespread practice of informal out-of-pocket payments tends to work against low-income earners. Both of these problems are not, however, unknown in Eastern European countries.

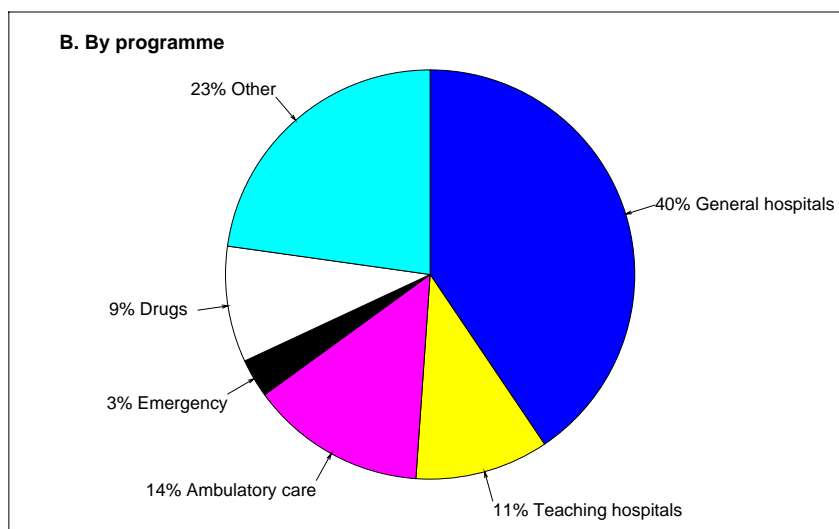
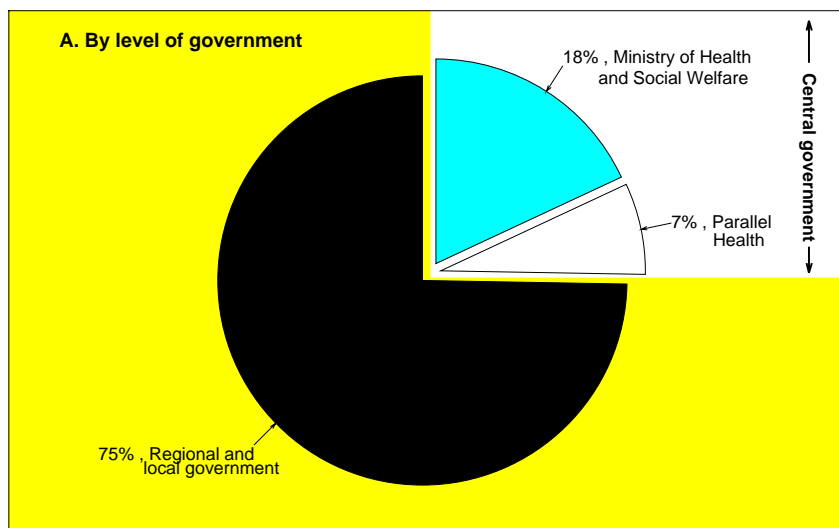
27. The regional structure of expenditure in Poland broadly reflected the institutional arrangements in place with a health service largely financed and supplied by the public sector. In theory, each region should receive a similar amount of funds per capita; however, important inequities in resource distribution exist. The budget allocation for medical services is largely funded retrospectively with less than 10 per cent of the funds going to capital investment. The share of expenditure on primary and secondary care in each region's budget varies. However, since 1995, improvement has been made with one quarter of the budget for drugs and ambulatory care being allocated on the basis of an index which takes into account the number of the population as well as other characteristics such as age, gender, morbidity and mortality.

19. A new Drug Committee was formed in 1997 and has reportedly taken a more dynamic approach over registration procedures than did the previous body.

20. Additional reimbursement categories exist for specific illnesses (such as infectious diseases, special mental illnesses, tumours and cardiovascular disease) or particular groups (war and disable veteran patients, and voluntary blood donors).

Figure 5. Allocation of public health care budget

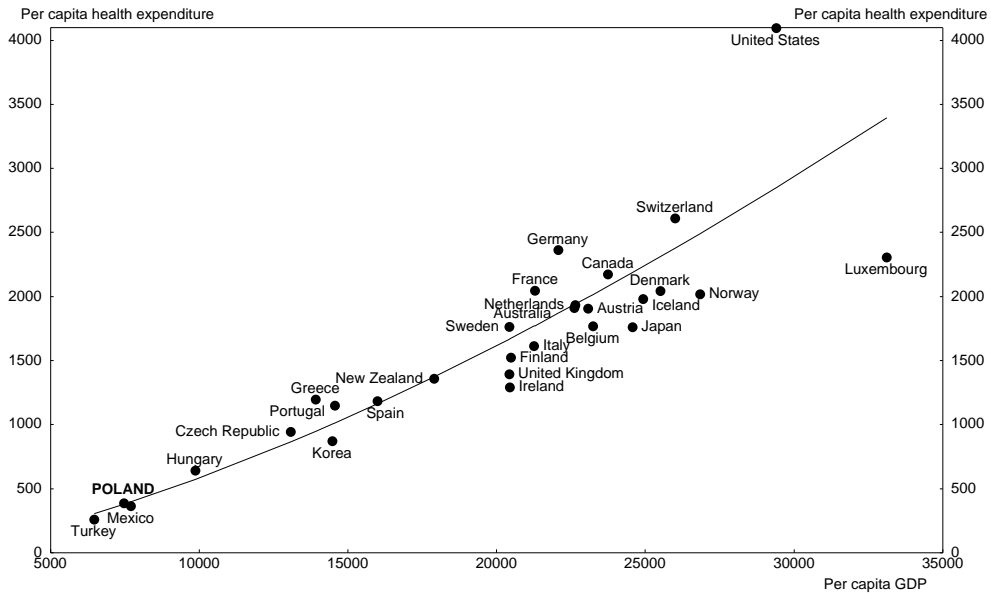
1997



1. Parallel health care systems for some employees and dependants of certain government ministries.
 Source: National Centre for Health System Management, Health care in numbers, 1998.

Figure 6. Health expenditures and GDP per capita

US dollars, converted using PPP's, 1997(1)



1. The equation of the regression line is the following:
 $\text{LN}(\text{health expenditure per capita}) = -6.80 + 1.43 \cdot \text{LN}(\text{GDP per capita})$
 R squared = 0.93 T: (-9.17) (18.95)
 Source: OECD, National accounts and OECD Health Data 99.

28. The distribution of equipment, beds and medical personnel across regions is relatively uneven, and the concentration of resources in large cities is important, in particular in Warsaw, which has several research institutes and specialist hospitals. Indicators of bed used in the hospital sector show that while Poland is roughly in line with the average of EU and OECD countries (see Table 1), there are considerable imbalances in the supply of hospital facilities throughout the country. Most hospitals are located near urban centres. The largest concentration of hospitals is found in Katowice (97), Warsaw (48), and Wroclaw (30) regions while Chelm, Konin, and Przemysl regions have only 3 to 4 hospitals. The supply of hospital beds varies significantly across regions ranging from 78 beds per 10 000 inhabitant in Wroclaw to 37 in Radom. The number of physicians per 10 000 inhabitants is about twice as high as the national average in Warsaw region. It frequently happens that a large number of medical specialists in the same field are employed within the same area. The supply of dentists and pharmacists is also uneven across regions with a concentration of resources being more pronounced in Warsaw, Wroclaw, and Lodz regions. By contrast, the supply of nurses appears to be more evenly distributed across the country. Patients in rural areas faced limited access to hospital care and to some specialised health services. Waiting lists have developed for some treatments which employ new technologies.

29. The widespread use of informal payments tends to accentuate inequitable access. While officially medical services were provided free of charge, patients started making informal payments to physicians from around the end of the 1970s in order to obtain faster and more personalised service. By the end of the 1980s, this practice became widespread. More than 25 per cent of patients are reported to feel obliged to make some form of payment when visiting a physician. These findings suggest that Polish health care may already be more privatised than it appears and that pecuniary incentives may be working to limit the supply of services at public hospitals available to low-income earners.

Assessment and recommendations

30. Health care is one area where the pace of reform has been slow and the approach piece-meal. To some extent the slow pace is understandable and might even be desirable where it inevitably takes time to nurture a new culture and develop certain capacity necessary for the proper functioning of the system, *e.g.* the development of a family doctor practice. The latest reform, which introduced a social insurance system operated through regional funds, split purchaser and provider functions and emphasised the role of family physicians, should provide a strong impetus to the reform process, despite some initial financial problems. It is regrettable that the lack of clear picture as to certain key details of the new health system as well as of apparent benefits of the reform has contributed to confusion and/or indifference among the public about the reform. The authorities are preparing a comprehensive health act which would provide a legal base for defining the missing key details. They should seize this opportunity to provide a clear account of what the reform is all about.

31. The introduction of multiple regional funds is consistent with the overall policy of decentralisation. Decentralised institutions have a number of advantages over centralised ones; they can be more flexible in responding rapidly to changing needs, more effective at identifying problems and opportunities, more innovative in the type of solution they adopt and generate stronger commitment and greater productivity in the workplace (Saltman and Figueras, 1997). However, decentralised arrangements are not without some weaknesses. These include the risks of high administrative costs²¹ and regulatory

21. Higher administration costs may be necessary and acceptable elements in the reform that Poland is pursuing to increase micro-efficiency in the financing and delivery of medical services. It may, for example, be costly to generate price and effectiveness data on medical treatments but these costs may well pay their way if integrated into better managerial and medical practice (OECD, 1995). The administrative

difficulties with multiple funds, the inequities and financial difficulties arising from an inadequate equalisation mechanism, for which technical solutions may be insufficient, and the risk of weak governance of new funds. Few of these concerns have so far been answered as the process is still in its infancy.

32. A decentralised approach requires an overhead function in certain domains. In this, the MH has at least two roles to play; public health promotion and the definition of a basic healthcare package. Public health services should include an improved approach to environmental health, communicable diseases, and an intersectoral and multidisciplinary approach to health promotion with greater involvement in planning and evaluating services. Reforming the public health function will necessitate professional skills and investment in training. Another area of intervention for the MH concerns its contribution to developing regulatory measures. In order to enhance public confidence in health funds, regulations concerning the benefit package need to be clear. Requirements in terms of coverage could differ significantly from one sickness fund to the other. It is important that all funds provide at the minimum, the nationally defined Guaranteed Health Care Package (GHCP) with clearly defined conditions and treatments to assure comparability of benefits across health funds.

33. The central co-ordination role of the Health Insurance Supervisory Office is also crucially important for the well-functioning of the decentralised system and needs to be strengthened. One area of priority is the further development of risk adjustment mechanisms operating across regions. The risk adjustment formula currently applied in Poland is far from adequate. A crude indicator of the morbidity rate is used. It is measured solely by the age of the population with no allowance made for the gender. Adoption of an oversimplified formula, such as the one which is currently in use, could lead to a worsening of situation in certain regions. In order to increase further the effectiveness of the risk adjustment mechanism, account may also have to be taken of a number of additional variables. The cost of providing services to a member also depends on the number of dependants. It may also vary with the location of the members (rural or urban), their health status, and the number of facilities that have to be maintained as well as that of personnel. However, using all these variables may result in a very complex indicator which may be difficult to implement. A balance must be found between the ease of implementation and the adequacy of risk adjustment since risks are far from being neutralised by any adjustment mechanism.

34. The reform correctly underlines the importance of strengthening primary care services with the help of strong enforcement of the gatekeeping role of family doctors. The high proportion of specialist doctors has resulted in distortions in the delivery system. Current family doctors experiments in several regions have proved to be largely successful in raising the profile of family doctors and in encouraging patients to use them as gatekeepers to the health care system. However, reform efforts so far have been isolated regional projects with limited overall effect. In order to attain the official target of 50 per cent of specialist and 50 per cent of primary care doctors, the family doctor network has to be extended with sufficient training capacities available for physicians to cover both those who are already practising and those newly qualified from Medical Academies. Transitory problems of insufficient supply of family doctors could be eased through the adoption, for example, of a scheme for primary care which provides patients with medical advice by telephone consultation with nurses, as in the United Kingdom. This scheme is intended to offer additional flexibility to a GP consultation by extending the primary care network and utilising limited resources in a more efficient manner. Given the shortage of family doctors in Poland, a phone advice service offered by highly trained nurses may reduce some of the burden on family doctors services.

costs of the insurance system are estimated to be around 2 per cent of total contributions according to a report presented by Vice-Minister of Health Anna Knysok.

35. An important input to hospital sector improvements is an adequate database and accounting system permitting all relevant participants to get accurate information on the situation. Poland has taken steps to develop and introduce some of the new information systems including a new standardised cost accounting system for hospitals and clinics, which calculates costs based on market prices and charges for depreciating capital items. A new patient-based record system is being tested allowing analysis of resource use and outcomes for individual episodes, and tracing the patient through different levels of the health care system. These efforts would facilitate the development of a Diagnostic Related Group (DRG) type payment system which has proved to be a potentially effective means of improving hospital efficiency in some countries. The computerisation of the health care system, however, is lagging the institutional and financial reforms, and more effort should be made to ensure that the information equipment is compatible across health funds²². Another major need for efficiency in hospital decision-making is the access to qualified managers, particularly with the ongoing decentralisation process of financial autonomy and their new role in contracting with health funds and services providers. Hospital management should be encouraged as a specific career, and posts of supervision should be made on the basis of a tender with remuneration linked to performance.

36. In January 1999, the MH introduced various cost-containment measures which included central purchasing (using tender) for medical equipment and certain drugs. Such purchasing decisions by hospital managers should be envisaged to take advantage of economies of scale. Another way to reduce costs in hospitals envisaged by the authorities is to establish day care facilities for certain treatments requiring minor intervention, diagnostic tests, and other procedures, which could result in a significant number of patients and resources shifting from in-patient care to day care. More targeted medical techniques could permit additional patients to be treated and a better quality of health care to be offered. In this vein, the conversion of some existing facilities into long-term care services would reduce the cost of such care and result in better reallocation of acute care resources currently used for providing these services. Private pay-beds as another source of revenue for public hospitals could be considered. The additional revenue could be invested in upgrading facilities and enhancing the standard of care in public institutions. Concomitantly, the private health care market would benefit from such an initiative.

37. The practice of informal payment represents an important source of inequity within the Polish health care system. A solution might be found in an increased funding for the public sector service providers to the extent that this problem emanates from insufficient supply capacity as well as inadequate remuneration for certain medical skills in the public system. The problem may also be alleviated by the development of private practices which could absorb some of the excess demand for those medical services for which unofficial payments have been a common practice. A well-established private sector with proper monitoring of referrals and prescribing practices could also contribute positively to the health care system by acting as a quality benchmark for public services and by providing an alternative supply of medical services. Contracts between public and private institutions could also enhance the effectiveness of the system by minimising duplication of resources and providing an important source of revenue.

38. A key thought behind splitting payers and providers has been to improve the delivery of services through competition among providers for contracts with payers. Experience in other countries amply demonstrates that payment arrangements matter a great deal in determining supply outcomes. In Poland specific payment arrangements are left for each health fund to decide. It is important that lessons from other countries be drawn on in making such a decision. As the reform in Czech Republic shows, fee-for-

22. The computerisation of the health funds has been delayed due to the cancellation of the public tender for the delivery of computer system in December 1998 by the MH. As a consequence, the budget allocation earmarked for the creation of the nation-wide system has been transferred to individual funds which are expected to buy the equipment on their own. Risks that these systems will be incompatible are not negligible, as hardware will be bought independently.

service payment tends to increase both quality, quantity and cost of services provided and makes the control of overall spending very difficult. The UK experience with fund-holding general practitioners, in contrast to non-fund-holders in Hungary, suggests incentives influence the effectiveness with which primary-care doctors play a gatekeeper role. In the absence of well-established primary care practice and appropriate incentives the effectiveness would be weakened further by competition among primary-care doctors as quick referrals minimise their costs and are appreciated by patients if the supply of specialist services is relatively abundant, as in Poland. In some regions, however, current financial incentives provided by fund-holding prevent primary care doctors from overuse of specialist services.

39. The latest reform plan envisaged to allow the health funds (including new ones to be created) to compete for members as from 2001, but this needs to be reconsidered. Health funds are not profit-making insurance companies and are financed through a tax. It is therefore not clear what incentives health funds have to engage in such a competition. Even if they compete, it is not obvious what positive results are achieved. Given imperfect risk adjustment, the most likely outcome would be so-called cream skimming, *i.e.* it is more beneficial for a fund to attract low risk members since the implicit insurance premium does not reflect the risk fully.

40. If inter-fund competition is meant to introduce a hard budget constraint on the funds, it should be achieved through other means. Indeed, the funds are expected to balance revenue and spending, but it remains uncertain if the Health Insurance Supervisory Office has sufficient authority to ensure this, and the risk of the funds accumulating debt cannot be excluded. In these circumstances, it is important to make managers of funds accountable for financial results and consumer satisfaction through performance-based pay and fixed-term contracts. However, where underlying cost pressures stem from factors which are beyond the remit of control by fund managers, a capping on total ambulatory-care spending at the level of each fund could be considered. Like in Germany, this would involve a partial deimbursement *ex-post* in case of spending overrun, written into contracts with service providers.

BIBLIOGRAPHY

- Chawla, M., T. Tomasik, M. Kulis, A. Windaw, and D. Rogers, (1998a), "Enrolment Procedures and Self-Selection by Patients: Evidence from a Family Practice in Krakow, Poland", Harvard-Jagiellonian Consortium for Health, Harvard School of Public Health, Boston.
- Chawla, M., P. Berman and D. Kawiorska, (1998b), "Financing Health Services in Poland: New Evidence on Private Expenditures", *Health Economics*, No.7, pp 337-346.
- Lawthers, Ann G. and Bogdan S. Rozanski, (1998), "Quality of Outpatients Services, Krakow Gmina", Harvard-Jagiellonian Consortium for Health, Harvard School of Public Health, Boston.
- NERA (1998), "The Health Care System in Poland", *Financing Health Care*, Volume 23, National Economic Research Associates.
- OECD (1995), "New Directions in Health Care Policy", *Health Policy Studies*, No.7, OECD, Paris.
- Saltman, Richard B. and Josep Figueras (1997), "European Health Care Reform: Analysis of Current Strategies", WHO Regional Publications, European Series, no. 72.

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