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The next step of reform in the healthcare sector

Gur Ofer and Ilana Grau

Address: Gur Ofer
Department of Economics
Hebrew University of Jerusalem

Address: Ilana Grau
School of Public Health
The Hebrew University of Jerusalem

Gur Ofer and Ilana Grau*

BRINGING THE GOVERNMENT HOSPITALS INTO LINE: THE NEXT STEP OF REFORM IN THE HEALTHCARE SECTOR

Abstract

On January 1 1995, Israel introduced a law on national health insurance. Since then health insurance to all residents has been financed by an earmarked health payroll tax (later abolished), general taxation and very limited co-payments. Health care services are provided by "sickness funds" which assume full responsibility for all health problems specified in the 'basket' of services. The sickness funds are paid through the Institute of National Insurance according to an age-adjusted annual capitation rate. Residents are free to switch from one sickness fund to another once a year. Government hospitals, which provide about 40 percent of all acute care hospitalization, are owned and run by the Ministry of Health (MOH). The paper argues that, in addition to the conflict of interest created at the ministry, this institutional arrangement contradicts the logical industrial structure assumed by the law. The paper discusses the various alternatives, using literature on vertical integration, on the pros and cons of for and profit versus non-profit institutions, and on innovations (many in the US) in contracting. It concludes that hospitals should become independent entities (public 'trusts') that will contract directly with the sickness funds for the provision of services, and that such contracts should have elements of 'virtual' vertical integration and risk sharing.

* Department of Economics and the School of Public Health, respectively, The Hebrew University of Jerusalem. The authors acknowledge the financial support of the Koret Foundation.

I. Introduction

On January first 1995, a new law on National Health Insurance (NHI) was introduced in Israel, entitling all Israeli residents to health services, defined within a given 'basket of services' through one of four Sick Funds (SF) that have existed in Israel for many years. Exactly one year later Victor Fuchs delivered his presidential address at the conference of the American Economic Association in Chicago including his 'dream' healthcare plan for the US (*American Economic Review*, 1996). The two plans are extremely similar in their major elements. Fuchs's plan includes almost all the elements of the Israeli system, and what is still missing in the latter, are steps that were called for by an Israeli state investigating committee a few years earlier and we hope will be implemented before too long. No, we don't accuse Victor Fuchs of plagiarism. As one of the leaders of health economics in this country he had many previous opportunities to present his ideas. Rather, we invoke his name as an authority for some of the views expressed in this paper on how to complete the Israeli health care reform, in this paper in the hospital sector.

a. The Israeli system and the law on national health insurance

Under the new law, Israelis are free to choose a SF (twice a year), and SFs cannot refuse applicants. The sick funds, while responsible for all services, can choose to provide services directly or through contracts with outside providers. The system is financed through a combination of employee and employer-wage taxes and general government revenue. Funds are allocated to the SFs by the Institute of National Insurance (INI) in the form of a risk (age) adjusted annual capitation payment that is designed to cover the obligatory basket of services. The law on NHI specifies that appropriate mechanisms should be developed in order to determine the content and cost of the obligatory basket of services, and how to update it.[1]

[1] At the beginning a few services were not included in the basic basket the capitation payment to the SFs: mental health, nursing, mother and child stations, and few others. In what follows we ignore these services.

The four existing SFs, have always been public, not-for-profit HMOs, played the double role as insurance companies and providers of care, were responsible both for all health services and for providing most outpatient care. This basic status of the SFs was now set by law. The main changes were the replacement of direct and somewhat differentiated fees to the SFs, by central taxation and uniform allocation, and the free choice of SF which has led to competition between them to achieve the highest the quality of services. These changes have largely limited the adverse selection and cream skimming that flourished before, but they have not altered the role of the SFs as the main risk-takers in the system.

b. Government hospitals (GHs) before and following the law on NHI

All along, SFs have purchased inpatient services from government and public hospitals on the basis of a per-diem price, average for all uses and determined by the government. Only since 1990 have a number of procedures, mostly elective, been transferred to a DRG basis, the rates of which are also determined by the government. The major SF, (Kupat Cholim Klalit, KCK), which in the past covered as many as 75 percent of all insured, has always owned hospitals (about one third of the bed capacity) that serve its members and the members of other SFs. But KCK needed to use other hospitals because it did not have enough beds (both nationally and regionally). KCK can best be described as a full-staff HMO.

During the period of 15 years before the reform, KCK and the Ministry of Health (MH) have a long term prospective payment agreement on the total annual use of inpatient services by KCK members in government hospitals. This agreement was combined with a mandatory allocation of patients to regional hospitals. Together, KCK and to some extent the other SFs were partially protected against the over-use of services. In addition, the hospital costs were controlled through global budgets imposed by the MH (or KCK over its own hospitals), and through price controls on most inpatient and ambulatory services. When the reform went into effect, the regional arrangement had already broken down. Following the reform and in order to protect the SFs, the government imposed a temporary ceiling on the payments from each SF to hospitals at 1995 levels plus 2 percent a year. All this was in addition to the global budget and full price control. The arrangement was partially eased in

1997. All these administrative controls reflect the need to protect the SFs that face the entire burden of the health insurance risks. While in the past SFs could translate part of the increased use of inpatient services to higher member fees and to deficits (eventually paid up by the government budget), the SFs can no longer raise fees and now face a credible hard budget constraint at the level of the capitation payments. Administrative controls on hospitals proven to be quite effective in many countries (White, 1995; Harrison, 1996). But they remain very cumbersome and inefficient in many other directions.

In the past, the replacement of bureaucratic controls with market controls (more flexible arrangements) has motivated the reform of the organization and operation of government hospitals. This is one of this paper's themes. Given that inpatient services make up about half the entire cost of the present basket, hospitals should share part of the risk now assumed by the SFs.

The law on NHI, by making the government the main financier and allocator of healthcare, made the direct government ownership and operation of hospitals more problematic than before. Before the law, in addition to owning hospitals and providing most inpatient services, the government regulated the health sector. Even under such conditions, a conflict of interests might arise in the form of an asymmetry in the treatment of the outpatient and inpatient sectors. Under the new law, the conflict of interests becomes much sharper, and the need for changes in the ownership structure and in the provision of inpatient services becomes more acute.

c. A short profile of the hospital sector in Israel (and stylized comparative facts)

Table 1 presents comparative data on the main variables related to the hospital sector between Israel and the OECD countries. We first observe that the population in Israel is younger than in most OECD countries, even following the wave of immigration from the former Soviet Union. This preliminary observation is important because older people require three to five times more healthcare services than the average patient. Even so, the share of GNP spent on health in Israel, before the enactment of the NHI law is (according to Table 1) at average OECD levels. According to early estimates for 1994, still before the reform, the share touched 9 percent, a relatively high share. Also, the share of those employed in the

health care sector as part of the total workforce tends to be somewhat higher, at 5.7 percent in 1992 by ranking.

Turning to the specific data on hospitalization, Israel is characterized by a small number of general beds, as well as a small number of hospitalization days per 1,000 population. Conversely, the total number of discharges per 1,000 people remains relatively high and continued to rise considerably during the last recorded decade, whereas the opposite trend occurred in the OECD. Both the level and the trend are reasons for concern. This increase, together with the small number of beds is largely responsible for the high rate of occupancy in Israeli hospitals and for the pressure to shorten the length of each stay.

Given the young demographic structure of the population, the upward trend in the rate of admissions is the main variable to be watched and to worry about. It is, most likely, the hard bed constrained (a direct result of explicit government policy) that is shifting the pressure on hospital capacity to a decline in the length of stay. As the latter has probably reached a lower limit, the choice seems to be between an increase in the number of beds or careful scrutiny of the justification for additional admissions, or a combination of both.

d. Changes in the status of hospitals: New modes of remuneration and a new role

Over the last two decades, two main groups of changes have taken place in developed countries regarding the place and role of hospitals in the health sector:

First, there are changes in the industrial organization of the hospital sector, in the institutional interrelations with the other parts of the health sector, and in the ways hospitals are remunerated.[2] Most of these changes have come in response to the rapid increase in healthcare costs, of which hospitals have assumed the majority, and in response to the serious market failures in health insurance and in healthcare. The institutional changes that are discussed and in some cases implemented range from the replacement of administrative control over hospitals to the implementation of more flexible management modes, to full trustization, and in the US, to full privatization. There is a tendency to increase the degree of competition between hospitals, even if public, through "internal markets" and "managed competition". There is a revolution, mainly in the US, in the way hospitals are remunerated: payment by case (diagnosis related groups, DRG) has become dominant, and it is slowly spreading elsewhere.

There are also increasing instances of more radical risk adjusted (capitation) payments, in which hospitals share a larger proportion of the health insurance risks. Government control is being replaced more and more by "managed care" (MC) management methods, involving direct controls by MC organizations over hospitals' treatment practices through required guidelines and pathways and control over costs. Both capitation payments and MC management (which also include risk adjusted remuneration to hospitals) involve contracts that restrict the independence of the hospitals and transfer some of their control rights to the MC organizations. Such a partial or 'virtual' "vertical integration" goes one step further: a trend toward fuller and real vertical integration of hospitals with the other stages of care so as to form a unified care organization. The most extreme form of vertical integration is the full staff HMO, but there is a range of organizational arrangements that internalize in different degrees previous market transactions.

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[2] This is based mostly on Altman, 1995; Enthoven 1993; Saltman, 1997; White, 1995; OECD, 1992, 1994a,b, 1995; Shortell *et al.*, 1995; Conrad and Shortell, 1996; Robinson, 1994.

The second major change is strongly connected with vertical integration but it has originated and emerged from improvements in medical treatment in view of the development of new technologies, new knowledge, and recent social changes. Vertical integration is manifested first in a shift from the management of individual stages, or links, in the chain of health treatment to a unified management of medical cases across all stages, and second, in the shift of the leading role in the chain to primary care (Conrad and Shortell, 1996; Robinson, 1994; Stoeckle, 1995 Shortell *et al.*, 1995). In this way, the medical considerations coincide with the economic and organizational ones (see more on this in Section II).

e. General theoretical considerations

There are a number of theories that are closely relevant to the discussion of organizational and economic status of hospitals and of the nature of their interaction with other health organizations. One body of literature discusses the differences between government, for-profit, and public not-for-profit, non-government organizations (NGOs), and then weights the advantages and drawbacks of organizations in certain branches associated to each of them. (Rose-Ackerman, 1996, and many references there; Weisbrod, 1988; *Health Affairs*, Vol. 16, No. 2 (March–April) 1997, the entire issue; Hart, Shleifer and Vishny, 1997xx; Shleifer, 1998). This literature shows why hospitals fit neatly into the status of NGOs, and whether or not recent changes may alter this view.

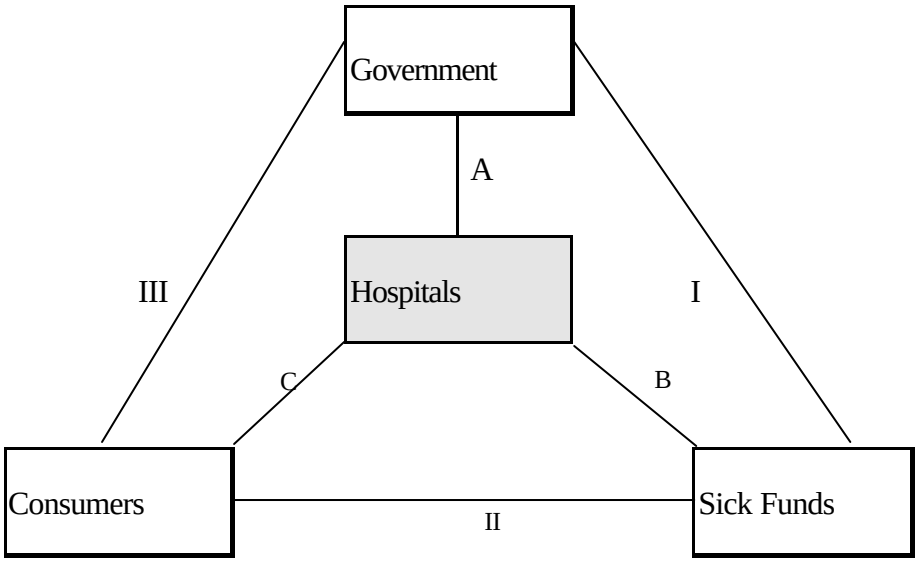
A second relevant body of economic theory is in the area of property rights and markets, and in the related field of the concept of the firm and its relation with the market. The relevant questions raised are: what are the proper limits of the firm, when do the market starts, and what types of transactions and contracts between firms fit different industries or products, different industrial structures, and, most importantly, different situations of market failures and 'non-complete contracts'. This body of theory starts with Coase (1960) and goes through North (1981), Chandler (1990), Williamson (1991), Ben-Porath (1980); Hansmann, 1996xx; Grossman and Hart, 1986xx; Hart, 1995xx; Shleifer, 1998; and many others. This literature is closely related to the issue of the extent and nature of vertical

integration and to the issue of contract types between healthcare organizations, as discussed above (See also Gaynor, 1998).

f. The plan of the paper

The paper assumes and accepts the basic structure of the Israeli healthcare system following the NHI law: financing by the government, capitation payments to the SFs, and total responsibility of the SFs for the entire basket of health-care services stipulated by the law. These are links I, II, III in diagram 1 (the outer circle). The paper concentrates on the links in the inner circle in the diagram: the main link (A) between the government and its hospitals (trustization, privatization and the new needed regulation regime), and the complementary new links. (The status of the hospitals owned by the General Sick Fund will have to be taken into account here). Link B, between hospitals and the SFs, mentioned above, is the subject of the discussion in Section IV.

Diagram 1
The Healthcare System in Israel: A Road Map



Finally, link C between the hospitals and the consumers, involves mostly services not included in the obligatory basket. The main issues here are: First, whether to allow at all the provision of private services on top of the obligatory basket in public facilities. The dangers here are those of shifting the public funds to private services (cross subsidization), the dilution of the basic basket, the creation of two levels of service, and the use of private services for cream skimming of preferred customers. Second, if the answer is yes, what are the limits, if any, on the type and extent of the provision of such services (the dangers of moral hazard and supply-induced-demand, SID).

II. Changes in the Status of Hospitals: Theory and Policy

As mentioned in the introduction, there are two areas of discussion in the literature that are relevant to any consideration of a new status for hospitals and their mutual relationships with the other players in the healthcare market, including the consumers. We start with a survey of recent changes in the economic and medical environment within hospitals. We continue with more general considerations on the theory of not-for profit organizations, and on the joint theory of property rights, transactions in property rights, the concept and domain of the firm and its relationship with the surrounded market: How the nature of the industry and the product and the characteristics of the market, industrial structure and market failure, affect these concepts and relationships.

a. Changes in the status of hospitals: new modes of remuneration and a new role

The (developed) 'World' in this context can be divided into two parts: most of the developed countries in Western Europe, Canada, Australia and New-Zealand, where government control over hospitals prevails (through direct ownership and\or global budgets), and the US, where until not very long ago indemnity insurance and Fee-For-Service (FFS, itemized or in the form of per-diem) dominated the remuneration for hospital services. In the 'rest of the world', there has been a slow process of replacement of governmental direct

control over hospitals with less direct administrative and more market-friendly means, some of which were developed during recent times, mostly in the US. The main new tools of payment and of control over hospital spending are various forms of prospective payment (DRG, partial capitation), the family of new methods coming under the general name of 'managed care' (MC); and the introduction of "managed" or "internal " competition (Enthoven, 1993; White, 1995; Altman, 1998; Saltman, 1997). These tools were applied to public and private, as well as to government-run hospitals. Internal competition had been tried for example in Sweden, (Saltman, *ibid.*) where hospitals remained under government ownership and control. This kind of managed competition has been tried in the UK where hospitals had been 'trustisized' and competition among them was encouraged. (Bartlett and Le Grand, 1994; see more below). The trustization of hospitals in the UK also signals the shift of the provision of healthcare services from the government sector to the private sector (mostly non-profit). In addition to the expected efficiency gains, 'trustization' is also intended to promote improvement in the quality and consumer-friendliness of services, service diversification, and increased consumer choice. In a number of developed countries, The Netherlands, Germany (OECD, 1994b; White, 1995) various prospective type and MC contracts are introduced, though at a relatively slow pace.

In the US, the new modes of payment have been replacing the ordinary FFS (including per diem) mode of payments to hospitals. Prospective payments and MC are spreading very fast. By the end of the century, the various types of HMOs and MC type organizations, are expected to consist of up to two-thirds of the entire healthcare sector (Gamliel *et al*., 1995). The essence of prospective payment contracts is in the sharing of risks between the two sides: health insurers and\or primary care providers, and hospitals. MC methods of management involve control over the provision of care through decision trees, care guidelines and obligatory pathways, enforced by insurers and primary care providers on higher level providers (including hospitals). Under this definition of MC, while there is no risk-sharing, there is nearly full control of costs by the management organization. MC organizations usually contract for reduced rates and FFS type payments. The MC organization thus takes all the risks upon itself but controls the medical files of patients, that is all information and most decisions. Under the two arrangements, prospective payment or

MC, there is a degree of 'virtual' vertical integration between the stages of health insurance and healthcare. Such 'virtual' and to a lesser extent also real vertical integration between primary and inpatient providers are growing, at least in the US (see Conrad and Shortell, 1996; Shortell, Gillis and Devers, 1995; Robinson, 1994; Stoeckle, 1995; Gaynor, 1998 and many references there). Vertical integration is justified on the basis of market failures in the spheres of risk-sharing and lack of information (see more below).

At the same time, there is a growing support for vertical integration and for the changing of the role of hospitals on *medical* grounds. This is an outcome mostly of technological and other innovations in treatment, but also of the rise in the standard of living (housing), in the availability of information and its dissemination, and in the level of education of the population. All make the treatment before and following hospitalization more important links than was the case before, and emphasize the importance of the integrated chain of treatment over the isolated value of each stage. The case management of the entire treatment process throughout all the stages becomes more meaningful than the management of individual stages, the inpatient stage included. This calls for a new organization that will oversee the entire process of treatment, and where the positions responsible for individual stages of treatment will be subordinated to organization's top management (Shortell *et al.*, 1995). Much diagnostic activity and treatment by medicine, as well as many surgical interventions, can precede, and more frequently also replace, hospitalization. Recovery and continued treatment, in nursing homes but also at home, assume similar increased importance. As a result of all the above, the function of the hospital as a medical institution has also been changing: there is more emphasize on expensive diagnostic procedures (some performed as outpatient services) and complicated expensive interventions. Beds are less important and are less indicative as a proxy for output levels, as top level technology and expertise become the key to the operation of hospitals

b. General theoretical considerations

WHICH SECTOR? There are a number of relevant theoretical contexts in different spheres of economics that bear on the question of the position of hospitals in the health-care chain: First, there is the literature on the balance of advantages and drawbacks of positioning

hospitals in one of the three major sectors of the economy: government, NGO (not-for-profit) and the business sector (Rose-Ackerman, 1996, and many references there; *Health Affairs,* Vol. 16, No. 2 (March–April) 1997, the entire issue; Shleifer, 1998). Market failures, information failures, relative efficiency, cost to the budget, government failures (rent seeking), extent of diversity, social equality and equity, all play a role in the balancing of pros and cons in the preferred sector. A key observation is that most hospitals in the developed world are either government owned or NGOs, and only a minority are in the private (for-profit) sector. This development is partly a result of market and information failures and partly out of equity preferences by the society. The latter consideration is clear. The former is a result of moral hazard, adverse selection and cream skimming in health insurance, and as a result of the supply-induced demand (SID) in the healthcare market. The ambiguity in the nature of the final product of healthcare and the large information advantage of physicians over patients make consumers prefer NGOs on the belief that they will emphasize quality of service over financial considerations. Asymmetric information also leads to SID, the expansion of services beyond the social optimum. All these constitute what Hart and Shleifer term 'non-contractible' properties. Given that non-contractibility, for-profit organizations with strong material incentives will tend to take advantage of the consumer by providing a lower quality or unnecessary services. Even Andrei Shleifer, a chief advocate of private markets sees here the envantages of non-profits with what he terms 'softer (material) incentives. Given their more diverse goals they will keep higher levels of service even with some material losses Shleifer, (1998, p. 140).

In recent years, since cost containment has become a major goal in the health sector, in tandem with the development of the new methods of cost control mentioned above, there developed a tendency (mostly again in the US) among non-profit hospitals to shift to the for-profit sector (*Health Affairs, ibid.*). At the same time and for the same reasons traditional or 'old fashioned' HMOs (SFs), especially in Europe, and in Israel, increased their concern about financial matters and started to move from a state on very weak material incentives to harder ones, but yet softer than the for-profits.

As to the choice between government and non-government (not-for-profit) organizations one can cite the wide literature on inherited government inefficiencies even if benevolent, not to mention the less favorable claims of the students of public choice (as summarized in Shleifer, 1998). In addition NGOs are sometimes considered less costly to the budget because they can raise contributions and assemble volunteers, and because they are more flexible in operations and in labor relations, making them more efficient. In addition, NGOs usually provide a greater range of services, and are typically more consumer-friendly (Rose-Ackerman, 1996, Weisbrod, 1987). They are also in a better position to mix properly public and private financing and to provide at the same time both mandatory services and privately elected additional ones.

FIRMS AND MARKETS: Chandler (1990), Williamson (1991), Ben-Porath (1980) Hart and moore, 1990, Shleifer, 1998 and many others offer theories on the nature of firms and markets and on the boundaries and the implied contracts between them. The above discussion on vertical integration and on risk and information sharing contracts between firms in healthcare, provides a good example of the issues involved. Market failures and information difficulties cause simple impersonal market transactions and equilibrium prices — 'perfect competition' — to create non-efficient outcomes, incomplete markets or no markets at all, even among suppliers. Such market failures encourage firms to internalize additional transactions (vertical integration) or to resort to the more restrictive, even exclusive types of contracts among them. Such restrictive transactions involve the exchange of some property rights, either control rights, transfer of internal information, and\or of cash flows. Restrictive contracts are different from simple market transactions in that they exchange, in addition to a given quantity of a good for a price, also long term commitments, information, and the right of one party to intervene in the decisions of the other. In so doing, such transactions amount to partial, 'virtual' integration (following Coase, 1960. See also Boycko, Shleifer and Vishny, 1995. Ch. 2; Shleifer, 1998). The choice of firms between real and virtual, and partial or full integration, as well as the need for government intervention in such choices, depends on the size of the markets and the number of actors, and the extent of competition.

The above theoretical discussion is very relevant and applicable to the health insurance and healthcare sectors, where information failures and asymmetric information cause serious market failures, and where the sensitivity of the service requires deeper, longer-term, more trustworthy relationships between consumers, insurers and providers, than what is provided by the impersonal atomistic market relations Gaynor, 1998). We have seen above the organizational dilemma concerning the degree of vertical integration around hospitals. In a large market with many (health-care) firms, full vertical integration maybe the appropriate solution, while in a more limited market with fewer firms, 'virtual' partial integration through competition-restricting-contracts may be the right balance between the needs for integration and the advantages produced by competition.

III. Hospital Trustization and Ownership Structure

As has been emphasized above and in the diagram, the choice of an ownership status of the hospitals must be closely related to the market relations and environment, and to the regulatory regime. Direct government ownership of natural monopolies (like electricity generation and supply) demands a different body of regulations than the one that fits the situation following their privatization. Yet, in this section we concentrate on the various options for ownership and management regimes of the government hospitals in Israel, leaving the discussion of the market and regulatory environment to Sections IV and V below.

The ex-ante situation

One can characterize the "ex-ante" 'ownership' situation of hospitals in Israel, during the early 1980s with two observations: First, the government, through the Ministry of Health (MH), had full control over its hospitals. In addition to full ownership, hospitals were managed in an extremely centralized fashion as regular budgetary units like any other government bureaucratic department. All personnel were government employees subject to the strict straight-jacket of government wage and placement regulations. Hospitals managers complained frequently about the need to turn to the MH for trivial day-to-day decisions. The second major observation on the ex-ante situation is that this regime inside the government sector reflected strongly on most other hospitals: those belonging to the KCK were run pretty much in the same manner by the KCK management. Even the few public (NGO)

hospitals were heavily controlled by the MH: they had to submit their budgets as well as all major investment plans for approval and control. When a scheme to assign the population to regional hospitals was concluded between the MH and KCK in 1981, all other hospitals were forced to join it.

Having overall responsibility as MH, and at the same time controlling 40 percent of the acute care capacity of the country, creates conflict of interest and contaminates the control of the MH throughout the entire sector. The dominance of strictly regulated sector of GHs explains why the presence of private NGO hospitals, structured more or less along the model of the 'public trust', had only a very limited effect on the activity patterns of the entire sector: the government tended to include those few hospitals under the same regulatory umbrella that it applied to its own hospitals. Per contra, following any kind of trustization of the GHs, one can expect a major shift in the mode of operation, the market characteristics, and the outcomes in a direction typical of a larger and dominant NGO sector. Such characteristics include larger flexibility in management, better internalization of the hard budget constraint including higher ability to adjust wages to it and, finally, a more friendly environment for the introduction of a combination of private and public services (SHARAP). Still, the mode of operation of public NGO hospitals, even if under the shadow of the government sector, include elements that can provide a guide of sorts, in the Israeli environment, for the specific form and characteristics of the new trusts. A number of well established as well as more recent innovations in these hospitals have been subject to examination and then also to experimentation and implementation in a number of GHs during the period. Since the mid-1980s, the two processes have occurred in tandem, and while moving in a generally similar direction, they have not always been inherently consistent. These twin trends consisted of a process of incremental changes dubbed by Shirom *et al.* (1997) "creeping trustization," and a number of more heroic and radical full-fledged trustization schemes. The chronological story of both processes is recorded in a number of documents and academic works, and summarized recently by Shirom *et al.* (*ibid.*). Let us therefore only summarize the main elements of these two processes:

<u>Creeping Trustization:</u>

This process that started sometimes during the 1980s is characterized by a slow and gradual transfer of some control over operational decision making and by some degree of financial independence by the management of GHs. These changes were motivated by the general tendency toward decentralization and privatization in Israel and in other countries by the increasing pressures for cost containment of the growing health expenditures, and by adopting partial segments of the more radical schemes of trustization or privatization as mentioned above (Section II.a.). This process was characterized in Israel by the following:

a. A gradual increase in the authority of hospital managers to take independent decisions concerning the day to day operation of the hospitals (not on investments). These steps, some of which remained on paper, were designed to make the management more independent 'agents', even at the risk that they will deviate from the policy directives of the MH. In order to work properly, such an independence had to be accompanied by appropriate operating tools.
b. The legal status that corresponds to that degree of financial independence is one of an "adjunct budgetary unit", still part of the budget, and with management reporting to the MH (and to the ministry of finance, MF). As part of one of the trustization schemes (that was shelved as all the others so far), six GHs were 'trustisized' and boards of governors were appointed and are still in place. Nevertheless, they play a marginal role and make very little difference.
c. The first tool was an increase in the control of the management over their budgets. Gradually, larger proportions of the budget, aimed eventually to turn the hospitals into full-fledged profit centers, basing total expenditures on expected revenues within a 'business-plan'. It must be emphasized that hospitals were never given any independence (within their main budgets) with respect to wages or personnel norms, nor with respect to (major) investments (but see point d. below). Labor costs amounted to nearly 70 percent of all operating costs, so that with the addition of other 'fixed' costs (like medicine and others), this financial independence was very limited. Add to this other constraints on contracts with SFs that further limited it.
d. As a second tool, GHs were gradually allowed to engage in some "extra-budgetary" activities, both for SFs and for private people. These activities went through a

variety of steps and culminated, since 1992, in the creation of a "research-fund" (RF) that manages all the extra-budgeted activities of the hospitals. The RFs are managed by special bodies in each hospital under their general management, and in a few cases report to the hospital's boards of governors, when such boards exist.

There are detailed regulations on all aspects of this activity, including a ceiling on its relative volume as a share of the entire activity of the hospital. Under the RFs hospitals are allowed to sell services that are not included in the obligatory basket of services under the law on NHI, including 'supplementary' services covered under various supplementary insurance programs, services offered by the SFs, services to non-residents and the like. Such 'private' services are provided in the hospital during extra-hours, a second shift, or through other regulated arrangements. This option encouraged hospitals to offer extra services like alternative medicine, periodical checkups, and to compete much more fiercely with each other. Hospitals had been allowed to raise funds through separate related organizations, and part of this activity was also run through the RF. In order to provide these services, hospitals are allowed to employ the regular hospital staff under more flexible rules. The net income from the RFs can be used in order to improve the research and physical infrastructure of the hospitals. So far (1996) the total budget of the RFs amounted to 3-5 percent of the total budget of GHs and they employed an equivalent of about 6 percent of the entire personnel of the sector. The RFs are unevenly distributed among the hospitals. In a few of them — Shiba, Soraski, and Rambam — they are much more important, up to one third of the total activity. In these hospital the 'Trust' is assuming a much more meaningful presence

e. In 1991 the MH introduced DRG-like remuneration to hospitals for an increasing number of inpatient and outpatient procedures and treatments. At least some of the rates turned out to be quite generous and created strong incentives to increase the volume of these procedures (for many of which the patients also selected the physician for extra, private pay) and to compete for celebrity specialists and for patients (Chinitz and Rosen, 1992).

The private activities of GHs follow the steps of the existing public hospitals in many respects. There 'extra-budgetary' activities of the forms mentioned above existed for a long

time, including the "Private Medical Service" first in Hadassa and then in Sha'are Zedek, both in Jerusalem, which covered more or less the same span of services and arrangements. Finally let us point out that none of the creeping steps towards trustization included a radical separation of the MH from the hospitals.

FORMAL TRUSTIZATION SCHEMES: Apart from an early attempt to separate the management of GHs from the MH by the establishment of a semi-independent "hospitalization council" (Shirom *et al.*, 1997, p. 12), serious attempts at radical trustization started with the Netanyahu Committee[3] (NC, 1988-90), a formal state investigation committee set up by the government to look into all the ills of the health-care sector and to suggest reforms (Netanyahu, 1990). The NC recommended full trustization of the GHs (as well as of hospitals belonging to KCK) into independent public (not for profit) trusts, completely separated from the MH. On the basis of these recommendations, the MH developed during 1991-92 a trustization scheme as the first stage of the reforms in the healthcare sector and before the law on NHI, which is indeed logical. The plan included all the elements that are normally called for (see below). Following very difficult negotiations with the Association of Government Physicians and other health sector unions, the scheme allowed all employees to keep their status and rights as state employees (including job security and lucrative pension schemes) as long as they wanted, and also set generous regulations regarding the provision of private services in the new trusts. The implementation of the scheme was discontinued following the 1992 elections and the change of government, though discussions and position papers continue to abound. The newly elected government preferred to start with the NHI law and had to devise various ad-hoc arrangements in order to make it work whilst the hospitals remained under its direct control (see below). In the mean time both governments made marginal concessions, mostly to physicians, on the provision of private services. The labor government (1992-96) concluded in 1994 a rather generous wage agreement with the sector's unions that did not include in return any concessions regarding trustization. Both moves make any reform in this direction in the near future even more difficult.

Options of Trustization

Simply stated, there are three major options for trustization: trustization within the government sector, full privatization into the business sector, and trustization as a public NGO, not for profit. The status quo with some further decentralization is a 'timid' variant of the first option. In what follows, we show why the status quo and any other arrangement that keeps hospitals under direct government control is unwarranted under the new system; and then why full privatization is not an optimal solution either. We then concentrate on the advantages of the not-for-profit status as the best organizational solution, even though it is only a second best.

A second dimension that cuts through all the above options relates of the question of which elements of the entire spectrum of 'ownership' or of property rights should be transferred from government control to the new institution. While such decisions may depend on which trustization option is selected, the degree of such an inter-dependency is quite small. We therefore begin with a short discussion of this second dimension:

Which property rights to trustisize? Control property rights can be divided between the long and the short terms: purchasing and selling an organization, making major investments (including dis-investment), and in exceptional situations of deep crisis and gross mismanagement, also the replacement of the management, are all long-term decisions. Control and decision making rights over current operations and the resulting cash flow rights are shorter term. Another way of division is between property rights over the organization (as long as it operates as a going concern) and property rights to create, sell, transfer, and (dis)invest. In a way, property rights for a going concern are equivalent to and can be obtained through a long term leasing contract. Long term rights involve (almost) full purchase of the organization.

There are a number of compelling arguments in favor of keeping the long-term property rights over hospitals in the hands of the government (or, under appropriate market

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[3] Named after its chairwoman, supreme court judge.

environment, in the hands of the SFs).[4] First, with almost full responsibility for the financing of the provision of healthcare services at the hands of the government, it must maintain some control over the quality of the management or the organization that runs the hospital. The government is also responsible for the long-term investment plans for hospitals and over their proper spatial and sectorial distribution. This is so in most developed countries. Even in the US there is a demand for a "Certificate of need" in order to establish a new hospital, (or for any substantial investment in health facilities) . In a small country like Israel such government control over (most of) the inpatient capacity (including beds and also large diagnostic or intervention systems) and its spatial distribution is even more important.

The employees of every large organization are acknowledged as legitimate 'stakeholders' in the organization, and even more so in a public one. The 'stakes' include job security, the existing remuneration system, established work habits and norms, pension rights (some may be non transferable), the manifestation of specific skills (that may not be transferable to other organizations or fully manifested under a different management set-up). Such 'stakes' are sometimes recognized as and translated into 'property rights'. Employees may demand, as they usually do, compensation for any expected (real and sometimes less real) potential loss of control rights and cash flow rights caused by the change of legal status and management. The process of creeping trustization leads to looser compensation rules for those employed by the RFs, but (almost) all employees retain their status as government employees. The different options of trustization have to consider also which 'stakes' (or property rights) of employees should be preserved and which should be compensated for.

If all the above is valid, then it has an impact on the choice of the sector of operation of the trustisized hospitals. While some kind of a leasing arrangement for hospitals can be made with for-profit firms, the limitations on the freedom of action involved make choosing NGO status less cumbersome.

[4] This later option is discussed below and we assume now that GHs are not to be transferred to the direct control of SFs.

Separating government responsibilities: One of the most important motivations behind the move towards trustization is the separation of the two responsibilities of the MH (and the MF) — for the entire healthcare system on the one hand, and for the hospital sector on the other hand. The asymmetric dual responsibility of the MH distorts the way the government relates to the system by giving the GHs a much higher priority status. Such separation can be achieved by all three options of reform listed above, though possibly with different degrees of isolation. This happens when the real partner of all hospitals should be the SFs, which, in turn should remain sole partner of the government as far as the provision of services are concerned. Specifically, there is a danger that because of the direct impact on its deficit, the government will favor the financial status of the hospitals, at the expense of the SFs, its main responsibility[5]. Per contra, SFs can withhold payments to GHs as a means of pressure on the government to raise the capitation fees or to meet other obligations; this is also unwarranted. Since the direct oversight of the hospitals occupies a disproportionate share of the energies of the MH (but also since hospitals employ many of the leaders of the health-care field), hospital managers are over-represented among the top administration of the ministry. This situation is reflected in the of decision-making process. The authority over major investments has always been and most likely will remain the responsibility of the MH. Given that the investment is in bed capacity and that the major technologies are in hospitals, there is an additional major source of disruption to the logical decision making process. This basic conflict of interest does not completely exclude some form of trustization of GHs inside the government sector, though it makes such a move less desirable. In such a case special steps will have to be taken in order to effectively separate the two responsibilities. What is excluded in any case, is the continuation of the status quo of direct MH control over GHs.

In what follows, we discuss first the advantages and disadvantages of trustization into independent trusts outside the government. Many of the advantages listed are, by nature, the

[5] For instance, the government recently allowed an increase in the per diem hospitalization price, without an equivalent updating of the capitation fee paid to SFs, which are expected to bear that cost. The same is true regarding the role of the government as a fixer of most other prices in the healthcare sector.

elimination of the drawbacks of continued direct government provision of inpatient services. In addition to the above-mentioned conflict of interest, most of the advantages fall under the heading of better and more efficient provision of services. Another major drawback of keeping the hospitals inside the government sector is the potential for irrelevant petty political intervention. Given a more independent status, there is a better chance of keeping the operations of hospitals at the professional level and of confining the political involvement to where it really belongs — in major strategic policy issues. Finally we would like to reiterate our great doubt that any intra-government separation between the MH and the GHs will significantly mitigate the inherited conflict discussed above. This is, among other things, due to the deep and direct involvement of the MF in all government units, no matter where located. Before turning to the option of NGOs, which we prefer, let's discuss very shortly the for-profit option.

For-Profit Hospitals: As mentioned above, only a very small proportion of hospitals in the developed countries (and the rest of the world) are private for profit.[6] The reasons are twofold: market failures and social and equity considerations. Due to the nature of the product and asymmetric information there is the triple danger of over-supply, of cheap quality and of inequities (even beyond the level of inequity that is determined by income differentiation and different economic ability to buy services). As far as efficiency is concerned there is no compelling evidence that for-profit hospitals are more efficient than NGOs (See for example Bosman and Fecher, 1995; Becker and Sloan, 1985; Bruning and Register, 1989). One reason for this may be that for-profit hospitals in a generally NGO environment internalize some not-for-profit motivations in order to meet the competition, and vice versa. Private hospitals are also at a larger risk of closing down due to lack of funds, even if they are still important on the basis of social cost-benefit (Bazzoli and Cleverly, 1994).

Both considerations, of efficiency and of equity are very powerful and both are present in the discussion that now occupies the stage in the US *(Health Affairs,* March-April,

[6] In the US, in 1985, less than 20% of all hospitals were for profit. (Schulz and Johnson, 1990).

1997, the entire issue; Claxton *et al.*; and Gray, *ibid.*). Indeed, during the last few years there has been a thin flow of 'conversions', both self-made and through takeovers, of NGOs into for-profit hospitals (also of HMOs). This process coincides with and is to some extent consistent with the much faster expansion of the new modes of the provision of care: HMOs of all kinds with prospective payments, and new managed care (MC) organizations. During the last decade or so many of these new organizations have opted for the for-profit option. However, it has to be pointed out that even not-for-profit organizations in the US have always been more 'commercial' and finance-oriented than similar organizations in Europe and in Israel, and were always exposed to a fiercer competition.[7] Therefore, such a conversion to the new types of HMO and MC organizations represent a somewhat less significant change in the US than almost anywhere else. For the same reasons, in the US there also exists a much better information infrastructure and more open public information norms that can support the operation and control over such a system. Yet, even in the US there are serious doubts as to the potential benefits of this process and as to whether it will persist (*ibid.*). In the UK, even under the Thatcher government, when privatization of almost all public services was a top priority, reform in the health sector had to wait at the bottom of the list and public hospitals were not privatized, only trustisized as NGOs (Bartlett and Le Grand, 1994).

Israel as well as most of Western Europe is in a completely different situation. Therefore, both from the point of view of social norms and because of the absence of the required informational and academic infrastructure, these countries will find it very difficult to move into such a stormy environment. Most government organizations and NGOs in healthcare belonged for a long time to SFs that just recently began to shift attention to financial and efficiency considerations. Even if at the end of the day, when all new management methods and needed infrastructure is developed, it is highly questionable whether the for-profit approach will prove superior. In any case, such a move at this stage is premature for Israel. Even the present changes, which call for more competition, for the introduction of new

[7] In the US there had been for a long time very large eccess capacity in acute beds, a factor that contributed to the extent of competition and to the higher priority for financial considerations. (Until recently it contributed much less to cost containment).

management and financial methods, and for a better balance between medical and cost considerations, are confronted with resistance on both market failure and equity grounds. There is a fear that the introduction of the new methods, even in a not-for-profit environment will expand the supply of services beyond the social optimum, will generate moral hazard, cream skimming and adverse selection and that at the same time there will be a decline in the quality of care. On the equity issue there is a fear that the system will develop into a 'two tear system', one for the poor and one for the more affluent. Such fears are at least partially founded, but they also may make a radical move to complete privatization politically non-feasible. It seem to us, therefore, that as a first, long-term stage, the balancing and countervailing power of the 'non-profit' principle is a preferred environment for the introduction of the new efficiency and cost-conscious methodologies. This doesn't mean that existing, even new, private hospitals should not be allowed to operate. To the contrary, the existence of a small private sector serves as an important benchmark and a permanent threat against inefficiency and shirking in the NGO sector.

Trustization of GHs: Trustization of GHs in one form or another is therefore preferred, at least on paper, for three major reasons:

a. It frees the MH (and the government) to concentrate on the health sector as a whole without a conflict of interest. Taking the direct responsibility over hospitals away from the government compensates for the increased government involvement in the financing and planning of the health sector.
b. Trustization completes the shift of the provision of most health services to the private non-government sector, where there is a potential for higher service quality, with greater efficiency.
c. If carefully designed, trustization will also achieve a better balance between quality of care and cost effectiveness, better system-wide sharing of the health insurance risk, and better balance between SFs and hospitals and between primary and inpatient care.

The achievement of the goals presented in b. and c. above depends to some extent on the legal status and the exact institutional structure of the new trusts. It also depends significantly on the rules of the game, that is the relationship between the new trusts and the other

players: the SFs, the consumers, and the government as the regulator (relations B, C and A in diagram 1). The choice of the non-government-not-for-profit status is intended to produce the proper degree of independence, flexibility, competition, and cost considerations (as opposed to for-profit status). In order to work well, this arrangement will have to be reinforced with appropriate government regulations. In what follows, we first sketch the character of the new trust. Then (in the next section) we expand on the market structure and market rules needed to complete the system. Under proper rules it is not impossible to have the hospitals adjunct at the edge of the government sector, or per contra, after a while, as fully for-profit.

The new Trusts. The new trust will therefore be a not-for-profit organization governed by a board of directors (BOD) appointed for an extended period of time (like 5 or 7 years). The BOD will be responsible for the ongoing operation of the hospital, in order to best provide medical services under its responsibility, in accordance with the charter of the trust. The trusts will run on a commercial basis, balancing expenditures with revenues. They will collect revenues for services, and from other sources, as stipulated by the regulations of the new market. It is important to determine who will appoint the BODs. Preferably, they should all be appointed by a public body, but the law must guarantee their full independence to execute their responsibilities. The management of the hospitals will be appointed by the BOD and will report to it. The assets of the hospitals will be leased to the trust by the government on a long-term basis for the purpose of its current operations, and the hospital will pay the appropriate rent (net of maintenance costs, under the responsibility of the hospital). There must be a built-in incentive for significant keep-up and maintenance. The long-term property rights of these assets will stay in the hands of the government The government will also have the right to intervene in cases of deep crisis: situations that might cause the hospital to close, etc. The government will also keep overall veto power over major investments.

Medical personnel who chose to remain government employees will be able to do so. The new trusts will be allowed to offer their workers an alternative employee status that will balance the advantages and disadvantages of the status of government employees. This will

be an integral part of a gradual internal reorganization of the hospital, including the introduction of incentives to units and to individual employees. The experience in the UK, shows that gradually more employees are opting for the more flexible status. Since most of their income will come from the government (through SFs), hospitals will also be subject to control by the comptroller general.

The general trustization scheme outlined above is quite similar to earlier schemes described here (Yishai, 1994; Shirom *et al.*, 1997; the documents), and to the new British trusts, (Robinson and Le Grand, 1994). In many ways, they are also similar to Israeli universities. Hopefully, there will also be an appropriate public authority (a statutory professional health council, parallel to the Council of Higher Education and its Planing and Financial Committee, VATAT) that will assume governmental responsibility over the *entire* NG health sector. We shall not discuss here the exact nature of this institution.

At least some of the properties of the trustization scheme described above can be preserved in a quasi-trustization program, keeping the trustisized hospitals in an independent and isolated enclave inside the government sector. This option is discussed below.

Trustization inside the government sector: The fact that long-term property rights may remain in government hands even after trustization, and that these rights may include retaining most personnel as government employees, tilts the decision in favor of keeping GHs within the government, though outside the MH. Other advantages of this solution are that it may save some of the financial and institutional 'transaction costs' that any more radical change brings with it. If this is indeed the chosen option, at least for now, then a number of changes in how hospitals are run must be introduced. First, each hospital will have to separate within the framework of a full-fledged 'independent adjunct unit', or as a defined "profit (or financial) center", both with well-defined rules of operation, fully integrated with the NHI law (see more below). There must be a radical 'upgrading' of the treatment of the Research Funds. First, the euphemism must be replaced by an appropriate name. In view of what follows, we suggest a "Private Budget" as the twin brother of the "Public Budget". Second, all extra-budgetary activities must be established as a legitimate and equal partner of the main budget, with clear dividing lines, rules of operation, appropriate accounting and audit,

and full outside control by the Comptroller General. Like the Public Budget, the Private Budget must also be fully transparent to all. All these must be supported by improved information and reporting systems. These safeguards are essential in our view, in order to protect the private budgets against accusations of misuse. As we note below, we support the provision of all health services, publicly and privately financed in the existing public (government or NGO) facilities. This is impossible unless very strict rules are applied and unless they are fully transparent (Section V.).

Any increased level of independence of the GHs will expose them to a competitive environment for the sale and provision of services, mostly to the SFs and directly to the population. In the next section we discuss the nature and merit of this competition and the options for its regulatory regime.

IV. Competition, the Players, Regulation, Contracts, Integration

As is emphasized time and again in this paper, the rules of the game, the existing industrial organization, and the resulting extent and nature of the competition are more critical in determining the efficiency (both in quality and equality) of services than the exact ownership status. In this way, stricter rules on direct government intervention can help make GHs more independent, while more restrictive rules over competition and quality control can make private hospital behave closer to NGOs. Under a NGO regime there may be less need for regulations of these two kinds. In what follows we discuss the various elements of the industrial organization and regulatory regime of a competitive hospital sector, under Israeli conditions, assuming in most instances a NGO environment with the resulting internally self imposed constraints. Eventually the other hospitals, especially those owned by KCK, will have to enter the picture. This is so in order to assure fair competition among all hospitals and a higher level of operational efficiency among KCK hospitals. We come back to this issue below. In this section we concentrate exclusively on hospital services included in the obligatory basket of services, that is provided to the and paid for by the SFs (link B in diagram 1). Other services (mostly link C there) will be dealt with in Section V.

It has to be pointed out that the earlier trustization schemes concentrated much more on private services (link C) to win the approval of the physicians and the health care unions. Much less attention was devoted to the SFs — hospital link (Yishai, 1994; Shirom *et al.*, 1997). According to these schemes, at the first stage service prices were to be determined by the MH according to the ex-ante situation, and gradually liberalized to a certain extent. There have been different approaches to capitation payments (full or partial) and different views concerning the attachment of patients to hospitals by districts, as was the case in Israel during the 1980s as was recommended by the Netanyahu committee, and in the UK under the old NHS.

The exogenous constraints on the extent of competition are the number of players, the size of the market, and the spatial distribution of hospitals. There are four SFs, each spread across the country (though with different geographical distributions), receiving services from 32 acute care hospitals, 11 of which are GHs. Along the sea strip between Haifa and Ashkelon, and in Jerusalem, the population has many hospitals within easy reach (the choice is somewhat thinner in the Southern edge). At the far north and south and in the eastern inland areas, the choice is much more limited. There is clearly more room for competition in the 'center' than at the periphery, and therefore the principles of competition may be somewhat different. We must mention, however, that improvements to the transportation and communication networks continue to increase the accepted travel distance for most people, especially in the more complex cases.

Who refers to (chooses) a hospital?

Both the level of competition and its form depend to a large extent on who chooses the hospital: the SF, the physician acting in the name of the SF, or the patient. In the past, even when patients were assigned to specific hospitals by region, about 15 percent of all admissions took place in non-designated hospitals. With the dissolution of these rules, a more liberal mixed system evolved, in which SFs tried to direct patients to particular hospitals. This was difficult to enforce, not only on the population but also on the referring

physicians.[8] Still, according to one study, only about 20 percent of all those admitted said they chose the hospital themselves (Chinitz *et al.*, 1996). Under trustization, a major decision will be how much choice should be given to SF members, and how much of the cost of allowing choice should be passed on to the member. One variant is that the obligatory basket will allow exclusive referral of members by SFs, and leave it up to the SF to allow and to charge for a wider choice. This option follows the 'point of service' stipulation in many healthcare insurance policies in the US.

A more limited member choice allows the SF to concentrate its cases among fewer hospitals, to get better deals, to develop better information networks and quality and cost control, and to save on administration costs. Most importantly, it increases the feasibility and reduces the cost and complexity of risk-sharing (capitation) agreements. In principle there could be free choice with capitation, in which members choose a hospital on a yearly basis and the SF signs with the hospital for the registered population. Since the population can choose between SFs (twice a year), since SFs may have the option of shifting their contracts among hospitals from time to time, and because complete free choice is extremely expensive and complex, it seems reasonable to move free choice into the supplementary basket, passing the extra costs onto either SF or the patient (possibly through supplementary insurance; see below). Even so, the degree of choice will be larger than in the UK under the reform, where the district principle remains largely in force (Bartlett and Le Grand, 1994).

Finally on choice, let us point out that even today, when restrictions on patients' choice of hospital are looser than in the past, the pattern of hospitalization remains similar to the prevailing pattern during the regional arrangement period, when most people were admitted to the nearby hospital. The issue of choice is more common among the wealthiest ten percent of families, where there is a greater ability and readiness to pay more for the right to choose a physician and for private services (Chinitz *et al*., 1996).

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[8] In Israel, at this point, most referring physicians are not the ones who will treat the patient in the hospital. Most hospital physicians are hospital employees. They may refer patients in their role as specialists in outpatient clinics or when working a second job with one of the SFs.

SF – hospital contracts

Possible contracts between SFs and hospitals range between competition-based fee for service or DRG per procedure, to full real vertical integration. In the middle, there are options involving various degrees of 'virtual' or real vertical integration: risk-sharing, long-term contracts, transactions in control rights over each other's property, and ad-hoc joint ventures. Full vertical integration, the equivalent of a full-fledged full-staff HMO, cannot serve as a general option due to the limited number of players. This is a pity because of the many economic and medical advantages of integration (White, 1995; Newhouse *et al.*, 1993; many others). It may still be an option for some of the hospitals. Whenever this happens, there must be a provision for members of other SFs to receive equivalent services, an option that is difficult to enforce.

Of the remaining choices, let's discuss two stylized contracts: the FFS contract based on the methodology of managed care (MC), and the full capitation agreement between an SF and a hospital (or a department thereof) over the membership of the SF in a given region. It should be noted that the simple, FFS option is not included. It is 'enforced' with the help of MC methods. Both methods proved themselves to be more efficient than simple FFS in the US and their use is expanding quickly (Gamliel *et al.*, 1995). The cost advantages and advantages in quality of service under MC stem (i) from the gate keeping, the case management and control functions assumed by the leading (purchasing) organization, (ii) from its superior knowledge of treatment pathways and guidelines, and (iii) from its ability to bargain for better prices. The organizations that provide services to the head MC organization are ready to relinquish part of their freedom of action and control over information. The various risk-sharing contracts leave most of the decision making and the relevant information with the contracting parties — only the risk is shared in accordance with the expected treatment costs. A DRG-based agreement with hospitals is also very common in the US (Altman, 1998). Under such a contract, the risk assumed by the hospital is relatively limited, mostly because hospitals are not adversely impacted by a rise in the number of cases. The method therefore encourages an expansion in the number of cases when the rate of payment is profitable. In order to limit the expansion of services, DRG agreements are increasingly reinforced with MC or capitation provisions.

The main trade-off between the MC and risk-sharing contracts is that, in the latter, the provider (in many cases the physician or a group of physicians) retains his professional freedom at the self-imposed price of having to take into account cost considerations. Professional freedom (to ability to treat as you believe you should), which is without any 'social' cost-benefit consideration, is an unrealistic proposition. It was an illusion in the past and remains so today. The choice is therefore between keeping this freedom for the physician at the cost of internalizing economic efficiency considerations or losing it to the MC organization. Our belief that retaining professional freedom of action is important tilts our view in favor of the risk-sharing option. A range of hybrids of the two stylized contracts are also possible, as indeed it is preferred by some (Newhouse, 1997).

In Israel today, there is, in our view, a clear advantage to the risk-sharing (partial capitation) option in contracts between SFs and hospitals. There are a number of specific arguments to support this stand: First and most important, the information infrastructure for the management of MC is not in place, despite important first steps (like in Maccabee). MC that is not based on credible information is bound to develop into conflict between the parties involved. As the basic body of information develops, there may be room for additional MC-based contracts. Second, at a time government should be working hard to enforce its regulations on SFs and to internalize the capitation principle (to make the SFs true *insurers*, as one or another form of HMO), it is important to reduce the threat of cost expansion by hospitals. Without having to share the health insurance risk, hospitals will be inclined to expand services, to charge their cost to the SFs, and thereby to endanger their financial stability. The alternatives that were used from 1995 to 1997, involving global budgets and specific budget caps, may have been necessary as transitory measures, but they cannot continue much further. Third, the replacement of government budget and (some) price controls by direct risk-sharing contracts with the SFs will remedy the system's 'chain of integration': from the government to the SFs and from them to the hospitals.

Fourth, given the high level of capacity utilization in Israeli hospitals it is doubtful that there is potential for meaningful competition among hospitals that can sustain effective price (FFS-based) competition. Even in the US where excess inpatient bed capacity has been large, it took a long time and strong regulatory measures to mitigate the trend of steep price

rises. Let us also note here that DRG-type payments may behave under certain circumstances as FFS. While it is true that, under DRG pricing, hospitals assume some degree of risk, they are usually able to compensate themselves by increasing the number of (less severe) cases.[9] Finally, the management of the hospital sector in Israel consists of the leadership of the health sector and that of most of its organizations. Giving the hospitals a share of the overall health insurance risk will instill in this leadership the need to balance medical and financial considerations, which will help set the norm for the entire sector. At the present time it is less likely that hospitals will readily accept instructions on forms of treatment from the SFs.

It is sometimes claimed that capitation-based contracts give patients less hospital choice than FFS-type contracts, because capitation agreements lock a given population to a given hospital. But, this is only true when FFS contracts leave the choice of the hospital to the patient. Most new FFS contracts operate on a wholesale basis, under which the promise of large volume is exchanged for a lower FFS rate. They are also enforced by MC arrangements that further limit choice. As long as this is true it is not clear whether the new FFS really offers a wider range of choices. In both cases, as was suggested above, the basic basket may offer the basic choice, and people will be offered supplementary insurance for a wider range. Among the two more sophisticated contract types — partial capitation and MC-controlled FFS (and/or DRG) — we therefore prefer the former.

Somewhere between restricted contracts and full vertical integration, there are additional options involving tighter integration. We mentioned above that full vertical integration of the provision process (fully integrated HMO) cannot work everywhere in Israel due to the limited number of SFs. The intermediate options consist of the creation of ad-hoc formal partnerships, or joint ventures between hospitals and SFs to run and manage inpatient service (even all secondary and tertiary professional services), for a well-defined part of the

[9] DRG-type payments for a list of procedures, introduced in Israel a few years back, did not constrain the use of services by hospitals. As expected, a number of very expensive and overpriced procedures became more prevalent (which prices, determined by the MH were much too high), which even contributed to an unexpected rise in the rate of inpatient admissions.

SF membership (in a region or otherwise). Such joint ventures reduce the transaction costs of making detailed contracts, facilitate and expedite the transfer and the use of information, avoid duplication of services, and increase the cooperation that benefits everyone. On the other hand, joint ventures (JVs) are more flexible than full vertical integration and there could be many more of them. Such JVs can also be remunerated through an agreed 'slice' of the entire capitation. Each SF and each hospital may have many such partnerships, so that the general competitive environment will be preserved. Appropriate regulations should ensure fair competition and non-discriminatory treatment of patients from different partnerships or SFs. Given the limited number of SFs and the limited size of the market in Israel, JVs may be the preferred industrial organization of the sector.

Full Integration

Given the clear advantages cited in the literature, from both the economic and the medical points of view, full vertical integration should not be completely ruled out, though it does prevent fair competition. Full integration of the outpatient care of an SF and a hospital at the periphery (like the Galilee or around Afula), however, may give such a union an unfair competitive edge over members of other SFs. Full vertical integration may be less harmful from the point of view of competition in the center, where there are a number of inpatient alternatives. But, even in the center this cannot be an exclusive arrangement. Strict regulations must ensure the non-discriminatory treatment of members of other SFs.

In Israel, the SF that is the best candidate for full vertical integration is KCK, which owns many hospitals and provides about a third of the general inpatient capacity in the country (its total membership is about 60 percent of the population, so it is also in need of purchasing inpatient services outside). So far, KCK has behaved unlike the typical (American) full-staff HMO: KCK used more inpatient care as a portion of its basket of services than the smaller SFs that didn't own hospitals. This occurred even after adjusting for the characteristics of the respective populations and other variables (Ofer, 1998; Rosen and Lavi, 1995). The reasons for this behavior is a mixture of internal management patterns, the strong position of hospitals inside KCK, and the government-set modes of remuneration for inpatient care (Chernichovsky, 1996; Ofer, *ibid.*). With the right management and

incentive structure (specifically, a full sharing of the insurance risk by a semi- or virtually-integrated organization as discussed above), one can expect changes in the right direction. In order for this to happen, KCK must reorganize into smaller regional units, each one including an outpatient system and a local hospital (as a subsidiary or under a contract that provides for close integration) that will receive capitation-based revenues in accordance with the composition of their respective populations. Under such an integration, there is a good chance for a radical change in the pattern of care, away from inpatient care.

Partial capitation agreements are inferior to full capitation and a fully-integrated system because they must precisely divide the responsibilities of each side in providing the services included in the basket. Without a clear division there will be a tendency of each party to the contract to shift responsibility (and services) to the other side. In our case, unless fully spelled out, the primary care partner will tend to increase the number of admissions and the responsibility of the hospital for tests, recovery, secondary admissions etc. With full integration this is an internal organizational matter that while simpler to resolve, also needs careful managerial attention and the right incentives. Since the last decade or so, one has seen (mostly in the US) the proliferation of partial capitation deals and, at the same time, a fast development of supporting methodologies to improve their clarity and capacity to deal with complex cases.

Considering on the one hand that the perceived advantages of vertical integration will be restricted by the limited number of players and by the relatively small size of the healthcare market, and, considering on the other hand the improved performance of partial capitation contracts, it seems that such contracts as well as ad-hoc partnerships of primary and inpatient providers are the preferred type B links between SFs and hospitals in Israel. With the advent of information-based MC knowledge, MC contracts will fit as well, as will mixed risk-adjusted and MC elements in individual contracts. Full vertical integration can represent only a small section of the market.

V. Hospitals and Consumers

Hospitals can also improve the level of services by providing a range of private services, beyond the obligations of the NHI law. The potential benefits of such services are obvious, but their incorporation together with the public activities of the hospitals is very complex and full of difficulties. In addition to the even larger dangers of oversupplying services and raising prices (to private purchasers), larger than those in their relations with the SFs, there are also potential dangers of cross subsidization (the use of public funds for private services), of inequalities between patients ('two tier services'), and a few others. Let's treat them one by one. This section is a short discussion of link "C" in the diagram.[10]

Hospitals that will face hard budget constraints in their relations with SFs will look to the private market for additional revenues. This market, made up of people, some holding various types of 'supplementary' insurance policies, is less protected and much less informed against the hard selling of various services offered by experts and physicians, in most cases the same physicians that treat them for 'basket' services. The probability of SID, of moral hazard (in cases of supplementary insurance), and of charging high prices, are thus much larger.

The opportunities for cross subsidization, the transfer of public funds in order to better compete on private services, and to pay more to their providers are obvious, and most of the known ways and means of avoiding cross subsidization are far from perfection. This situation leads some countries, like Canada, to enforce a complete separation between the providers of public and private services. Public hospitals cannot provide private services and neither can publicly employed staff provide private services anywhere.

A patient who buys private services may be favorably treated in the provision of basket services by the management and the medical staff of the hospital, as it may increase the revenues of both. There is a danger to the hospital of loosing regular patients (directly or through complaints to the SF), but under present conditions this may be remote. Some of

[10] There is a very vast literature on the issue of P\P mix in the same facility. Among others see WHO (Saltman) 1997; OECD, various studies; Chernichovsky, 1996, plus references; Shirom *et al.*, 1997.

the privately purchased services are completely or mostly independent of ordinary services, and may be provided by different personnel. Such services include two main groups: amenities (private room, private nurse and the like) and medical services not included in the basket (like periodical checkups, cosmetic surgery, alternative medicine). The main extra service that is closely related to ordinary medical care is the use of private clinic services (SHARAP), when ordinary (basket) services are provided by a physician chosen by the patient, in a time frame set aside for such services and usually in a separate, shorter waiting line. In these services lies the most acute danger of 'two tier service' within the public sector, and of inequality between private clients and public ones.

How to deal with these problems while still allowing the hospitals to provide private services? The phrasing of the question already assumes the acceptance of some kind of private to public (P/P) mix inside public hospitals. This is indeed our view. The alternative of full separation between the two financing systems and baskets of services seems to us both unwarranted and unrealistic.

Full separation into public and private sectors is unrealistic in Israel in view of the tradition and precedents that have already been established, even inside GHs, as was described above (see also Shirom *et al.*, 1997). In addition to the private services allowed in a number of public hospitals, many GHs instituted the RFs mentioned above. Some physicians employed by GHs as full time staff, provide additional services on a private account in other (mostly for-profit) hospitals. There is also a lot of anecdotal evidence on large volumes of illegal, 'under the table' payments to publicly employed personnel in GHs and in hospitals belonging to KCK, where private services and payments are not allowed at all.

Finally, as was learned from previous negotiations over trustization with the physicians' organizations, the demand for extensive private privileges in public facilities was among their main demands, and most likely the main area where concessions were possible (Shirom *et al.*, 1997; Yishai, 1994). Given all these, it is very unlikely that the benefits expected from the trustization of GHs can be gained without allowing some degree of private activity for extra remuneration inside GHs.

There are, however, also intrinsic advantages to the creation of a cooperative public-private joint activity inside the NGO hospital sector. The entire public hospital sector in Israel, is a high quality industry, which includes the best teaching research and treatment facilities and employs the best professionals. There are all the reasons to preserve this center of excellence where it is and there is no reason to move it to the private (for-profit) sector. Such a move will cause a major institutional disruption and will hardly produce any additional benefits. If so, it makes sense to keep the existing facilities at full capacity and its personnel in-house during the entire working period. In addition to the financial savings created, in facilities, travel time and information flows, this will also improve the quality of inpatient service by the longer presence of the physicians in the hospital, and by a better integrated chain of treatment.

Even though the general trend is toward a decline in the share of inpatient and even hospital care in the entire costs of healthcare, it may well be that the share of healthcare costs in the national product will continue to rise. It is also likely that the public budget will find it more difficult to meet the rising financial needs. Ways must be found to incorporate an increasing share of private financing to cover additional costs. Building an appropriate institutional and regulatory infrastructure for such a cooperative P/P mix inside the same organizations, despite the difficulties, is a necessary step in preparation for such a future.

Ways to minimize the negative side effects of such a P\P cooperation may include separate sets of books and even separate financial entities inside the same hospital. There may be, at least initially, a limit on the share of private services, and a control over their nature and prices, the time devoted to private services and the salaries paid; an effective internal control mechanism must be put in place and there must be a body of government regulations. An important instrument developed in the US in the era of MC, an annual report card certified by an independent institution, may be gradually developed to assure consumer information and control. The task of joining public and private activities serving a common cause is very complex and the above are only the outline of the means to be used and not their content, which is not discussed here. One potential way to mitigate some of the problems of the P/P mix, is by covering some of the private services by supplementary insurance, run by independent organizations related to the SFs. One of the very recent

institutional changes observed in the US is the creation of joint ventures between for-profit and not-for-profit healthcare institutions, the SF or HMO is the first and the hospital the second (Gray, 1997). A variant of this arrangement may be a way to join in Israel the two providers of services: the provider of the obligatory basket and the outfit responsible for supplementary insurance and services. At least at the start, both should be NGOs.

A word must be said on equality and equity. The NHI law demands that medical care should be provided to all residents on an equal basis, that is according to their medical needs, as long as they are within the obligatory basket. The introduction of private services, especially those closely related to basket services, i.e. the choice of a physician and the cutting of the waiting time for included treatments, are the most threatening to equality. It is indeed very difficult to develop a treatment culture that will ignore the type of patient, but there must be a constant effort in this direction. As to the waiting lines, more control must be imposed on determining waiting lines (and of the operating physician in 'public' procedures) according to medical priorities. While intensive efforts must be invested in reducing inequality within the obligatory basket, more tolerance is called for less equality in the provision of private services. The obligatory basket is very generous and includes almost all effective treatments. There is no justification to be too orthodox with respect to what is above it.

VI. Conclusions

In this section we would like to sketch the essential elements of change in the status of GHs, given the industrial structure of the health sector in Israel, and the NHI law:

1. GHs must move away from the direct control of the MH. The chain of financial and contractual command should leave only the SFs in direct connection with the government. GHs have to be linked by contracts or otherwise to the SFs. Link A (in Diagram 1 above) must, therefore, be abolished. In this way the MH can assume its appropriate role as the main strategic planner and even-handed regulator of the system. During a transition period, the MH may assist the SFs and the GHs to shape the framework of their relationship, and

may continue, for a while, to control budgets and prices. The continued responsibility of the government over strategic investments and the property of the GHs, and its involvement with labor relations, should be kept at a necessary minimum, especially with respect to current operations.

2. Whatever the legal status chosen for GHs, the decision making process must be shifted from administrative control to flexible and independent management. We prefer independent trusts, with public boards of directors, operating as NGOs and balancing the goals of high quality service with prudent financing. Even if the existing employees initially retain their status as government employees, there is a good chance that labor relations and wage determination will gradually become more and more flexible and independent. In order to allow for private, non-basket related activity in the hospital, each hospital will be structured as a sort of a joint venture between two entities, each responsible for its own activity, and each managing a separate set of books (see below).

3. The most important link of the system is link B, between the SFs and the GHs: here one must assure the right balance of power in the system with regards to finances, risk assuming, responsibility, and political influence. In view of the market failure in healthcare, both medical and industrial organization considerations favor full vertical integration of out- and inpatient care under a unified management. The ideal structure may have been composed of full staff SFs (or HMOs) (serving as SFs in the meaning of the NHI law), competing with each other on quality of service. Given that at present there are only four SFs and the small size of the entire market, such a structure may be possible in only a small number of cases (for example, inside KCK, with adjunct regions competing with each other). The second best IO structure may be one in which specific joint ventures and\or longer term contracts for inpatient services, are signed between SFs and hospitals. Such contracts can take the form of partial capitation, and\or of the MC type as described in the paper; or a mix of both elements. Such contracts, dubbed above as virtual vertical integration, will allow the proper level of competition and a reasonably fair one. The hospitals will be constrained, either through the assumption of part of the health insurance risk, or through submitting themselves

to the gate-keeping practices of MC implemented by the SFs. For the beginning we prefer the risk-sharing option. This will impose more responsibility on the hospitals, and will better balance the 'political' power between SFs and hospitals. It will also allow more time to develop the information base needed for a proper MC.

Under both arrangements (capitation and\or MC), a dynamic process will emerge that will shift resources towards primary care and away from inpatient care, in line with both financial and medical preferences. This is the trend observed under such circumstances in the US and there is a good chance that it will happen here too.

4. Hospitals should give up dealing directly with private consumers concerning ordinary services included in the basket, unless agreed otherwise with the relevant SF. All 'basket' inpatient transactions will be included in the SF contracts. Hospitals will be able to offer additional services on a private account (paid also by supplementary insurance), through the non-public entity of the hospital mentioned above. Such services include amenities, special services not included in the basket, and extra services related to basket services: mostly choice of hospital and of a physician. We think that the right to buy the cutting of the waiting period should be limited only to cases when there is no clear medical priority. It is important to devise ways to minimize 'two tier service' with respect to the obligatory basket services. There is no requirement of equality with respect to extra services, as long as the basic basket is generous enough, as it is at present.

Finally, with the achievement of Trustization (or near trustization), the main role of the MH will be to negotiate the level of resources devoted to health care, to set priorities for the system, including on major investment programs, to oversee quality control, and, not less important, to develop information bodies on performance and to disseminate it to the public and the SFs, so that the competition will be more meaningful and the choices more informed. Finally, it will have to install the proper regulatory framework. and make sure there is a limit on the expansion of superfluous services (especially in link C, but not only).

This paper said nearly nothing on sequencing. If possible, the changes should begin by a move to risk-sharing (and MC, when the SFs are ready) contracts, and a process of incorporating the GHs under independent management and well organized financial structure.

The paper also did not deal in detail with the hospitals of KCK. We would like to see some of them organized with KCK regions into fully integrated autonomous SFs (within KCK), receiving directly the capitation payments from the government (as in pp. 31-32 above). When this is difficult, they should follow a similar institutional change as the GHs (though they can stay inside KCK). Until this happens it is essential, in order to assure fair competition, to prevent any form of cross subsidization inside KCK in favor of its hospitals, especially at the account of primary and secondary care.

With proper trustization the Israeli system of healthcare can approach an optimal structure with the following division of labor: a. The government, in addition to its normal role of the strategic decision maker and controlling body, is also the financial mediator of the sector: it collects the healthcare fund according to its social norms and distributes them to SFs, as closely as possible to 'ideal' (or 'true') risk adjusted health insurance policies. b. Provision of services is offered by the non-government, not-for-profit sector, by competing insurers-providers reaching further risk-sharing and\or MC type contracts with other providers. These are designed to assure higher quality, consumer friendly and diverse services, higher level of efficiency and effectiveness, all with the help of competition (over quality of service) among SFs and other providers. c. A proper private\public mix of financing and provision of all services by the NGO sector that will improve the quality of service and assure more stable financial base. These are the three main elements included in the plan presented by Victor Fuchs that was mentioned at the opening of this paper

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Table 1: Health Systems: International Comparisons

	% of population over 65 years		General beds per 1000 pop.		Hospitalization days per pop. per year (general beds)		Average length of hospitalization (general beds)		Hospital discharges per 1000 pop. (general beds)		Rate of occupancy (general beds)		Health expenditures as a % of the GDP		Employed in the health services as % of total employed	
Country	1983	1993*	1983	1992	1983	1993	1983	1992	1983	1993	1983	1993	1983	1993	1983	1993
Australia	9.9	11.7	6.1	n.a.	1.4	0.9	7.1	n.a.	n.a.	n.a.	61.7	n.a.	7.7	8.5	6.9	6.9
Austria	14.4	14.9	6.7	5.5	2.5	2.1	13.4	9.6	183	240	80.7	78.5	8.0	9.3	n.a.	n.a.
Belgium	13.8	15*	5.9	4.8	1.6	1.4	9.6	8.2	157	177	76.1	81.1	7.6	8.3	4.5	5.6
Canada	9.7	11*	5.2	n.a.	1.6	1.4	10.3	n.a.	146	n.a.	82.4	n.a.	8.6	10.2	4.9	4.9
Denmark	14.8	15.6*	5.3	4.2	1.5	1.3	8.3	6.3	185	198	79.0	82.8	6.6	6.7	5.0	n.a.
Finland	12.3	13.8	4.8	4.6	n.a.	1.1	8.2	6.1	n.a.	191	n.a.	70.1	6.9	8.8	5.4	8.3
France	13.1	14*	6.0	5.0	1.7	1.4	9.7	6.5	179	211	79.5	76.5	8.2	9.8	6.0	7.4
Germany	14.8	n.a.	7.5	7.2	2.3	2.2	14.2	12.6	166	n.a.	83.5	n.a.	8.5	8.6	4.6	n.a.
UK	14.9	15.7*	2.8	2.2	0.9	0.9	8.5	5.1	116	191	75.0	n.a.	6.0	7.1	5.3	4.8
Greece	13.3	14.8	n.a.	3.9	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		4.6	5.7	2.5	3.4
Holland	11.8	13.1	4.8	4.2	1.5	1.1	13	10.6	113	103	82.9	72.0	8.3	8.7	7.1	6.6
Ireland	10.8	11.4*	n.a.	n.a.	1.5	1.0	7.5	6.4	n.a.	n.a.	74.8	83.6	8.1	6.7	n.a.	5.4
Ireland	10.0	10.6*	n.a.	n.a.	n.a.	1.1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	7.3	8.3	6.4	n.a.
Israel	**8.3(23)**	**9.4(23)**	**2.8(15)**	**2.5(15)**	**0.9(14)**	**0.8(17)**	**6.6(17)**	**5.0(16)**	**138(10)**	**171(9)**	**89.4(1)**	**92.4(1)**	**6.8(15)**	**8.0(14)**	**5.5(8)**	**5.7(7)**
Italy	13	n.a.	n.a.	5.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	7.0	8.5	4.0	4.4
Japan	9.7	11.9*	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	4.6	5.7	n.a.	n.a.
New Zealand	10.1	11*	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	6.4	7.7	5.5	n.a.
Norway	15.3	16.1	5.0	3.5	1.5	1.1	10.1	6.9	145	n.a.	79.9	n.a.	6.8	8.2	8.8	n.a.
Portugal	11.9	n.a.	n.a.	3.7	n.a.	0.9	n.a.	7.9	n.a.	110	n.a.	67.6	5.8	7.3	2.7	n.a.
Spain	11.6	13.4*	n.a.	n.a.	n.a.	0.8	n.a.	9.2	n.a.	100	n.a.	75	6.0	7.3	3.3	3.6
Sweden	16.8	17.6	4.9	3.9	1.3	0.9	8.0	5.8	164	17.2	74.4	76.2	9.5	7.5	10.4	9.4
Switzerland	14.3	14.2	6.9	6.2	2.0	1.8	15.1	12.1	n.a.	n.a.	79.0	n.a.	7.8	9.9	n.a.	n.a.
Turkey	4.3	2.7	1.9	1.4	n.a.	n.a.	6.9	4.3	n.a.	n.a.	48.8	44	3.0	2.7	0.7	0.9
U.S	11.3	12.2*	4.2	3.5	1.2	0.8	7.6	7.1	155	130	73.4	n.a.	10.6	14.1	6.0	7.2
Av. OECD	11.8	13.0	5.2	4.35	1.6	1.23	9.8	7.8	155.4	165.7	75.4	73.4	7.23	8.1	5.26	5.6

( ) = Israel ranking from the highest. * 1990. **Source:** Israel Ministry of Health*: International comparisons: OECD Countries and Israel*. 1996. (Hebrew)

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W00:11 Helgi Tomasson: Signal-noise Decomposition in Financial Markets: An Empirical Stochastic Process Analysis for Infrequent Trading

W00:12 Thorolfur Matthiasson: Changing Rules for Regulation of Icelandic Fisheries

W00:13 E. Tumusiime-Mutebile: Economic Reforms and their Impact in Uganda

W00:14 Sveinn Agnarsson: Productivity in Icelandic Fish Processing Industry 1985 – 1995: A Comparison of Methods

W00:15 Sveinn Agnarsson: Development of Efficiency in Icelandic Fish Processing Firms: A DEA Approach

W00:16 Jon Danielsson, Bjorn N. Jorgensen and Casper G. de Vries: Risk Management and Regulation in Incomplete Markets

W00:17 Ragnar Arnason, Gylfi Magnusson and Sveinn Agnarsson: The Norwegian Spring Spawning Herring Fishery: A Stylised Game Model

W00:18 Helgi Tomasson: Estimation of Correlations in Financial Markets when Trading is Infrequent

W00:19 Helgi Tomasson: Computations of Bayesian Estimators in ARMA Models

W00:20 Helgi Tomasson: Monitoring the trading intensity of a stock market under infrequent trading

W01:01 Tryggvi Thor Herbertsson: The Economics of Early Retirement

W01:02 Tryggvi Thor Herbertsson and J. Michael Orszag: The Costs of Early Retirement in the OECD

W01:03 Asta Herdis Hall and Solveig Frida Johannsdóttir: Generational Equality in Iceland

W01:04 Gylfi Zoega and Yu-Fu Chen: Exchange Rate Volatility as Employment Protection

W01:05 Tryggvi Thor Herbertsson and Gylfi Zoega: The Modigliani "Puzzle"

W01:06 Thorvaldur Gylfason: Lessons from the Dutch Disease: Causes, Treatment and Cures

W01:07 Tor Einarsson and Milton H. Marquis: Bank Intermediation over the Business Cycle

W01:08 Tor Einarsson and Milton H. Marquis: Bank Intermediation and Persistent Liquidity Effects in the Presence of a Frictionless Bond Market

W01:09 Tryggvi Thor Herbertsson, Edmund Phelps, and Gylfi Zoega: Demographics and Unemployment

W01:10 Tryggvi Thor Herbertsson: Shrinking Labour Forces and Early Retirement

W01:11 Tor Einarsson: Small Open Economy Model with Domestic Resource Shocks: Monetary Union vs. Floating Exchange Rate

W02:01 Tor Einarsson and Milton H. Marquis: Banks, Bonds, and the Liquidity Effect

W02:02 Fridrik M. Baldursson and Nils-Henrik M von der Fehr: Prices vs. Quantities: The Case of Risk Averse Agents

W02:03 Thorvaldur Gylfason: The Real Exchange Rate Always Floats

W02:04 Tor Einarsson: Small Open Economy Model with Domestic Resource Shocks: Monetary Union vs. Floating Exchange Rate

W02:05 Gudmundur Magnusson and Saso Andonov: Basel Capital Adequacy Ratio and the Icelandic Banking Sector: Quantitative Impact, Structural Changes and Optimality Considerations

W02:06 Alison L. Booth and Gylfi Zoega: If you're so smart, why aren't you rich? Wage inequality with heterogeneous workers

W02:07 Alison, L. Booth, Marco Francesconi and Gylfi Zoega: Oligopsony, Institutions and the Efficiency of General Training

W02:08 Asgeir Jonsson: Exchange rate interventions in centralized labor markets

W02:09 Alison, L. Booth and Gylfi Zoega: Is Wage Compression a Necessary Condition for Firm-Financed General Training

W02:10 Tryggvi Thor Herbertsson and Gylfi Zoega: A Microstate with Scale Economies: The Case of Iceland

W03:01 Eirik S. Amundsen, Fridrik M. Baldursson and Jørgen Birk Mortensen: Price Volatility and Banking in Green Certificate Markets

W03:02 Tryggvi Thor Herbertsson and J. Michael Orszag: The Early Retirement Burden: Assessing the Costs of the Continued Prevalence of Early Retirement in OECD Countries

W03:03 Torben M. Andersen and Tryggvi Thor Herbertsson: Measuring Globalization

W03:04 Ingolfur Arnarson and Pall Jensson: The Impact of the Cost of the Time Resource on the Efficiency of Economic Processes

W03:05 Gur Ofur and Ilana Grau: Bringing the Government hospitals into line: The next step of reform in the healthcare sector