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**Hospital Utilization and Expenditure
by Israeli Health Plans
in an Era of Health Care Reform**

First Year Report

Principal Investigator: Bruce Rosen
Co-principal Investigator: Stuart Altman
Co-investigators: Marc Cohen, Ziona Haklai,
Michal Ivancovsky, Mia Mohilever, Yaakov Nevo
Consultant: Avi Yisraeli

This project was funded in part by a grant from the Israel National Institute for Health Policy and Health Services Research.

This project was a cooperative effort of the JDC-Brookdale Institute, the Brandeis University Health Policy Institute, the Israeli Ministry of Health, and Hadassah-Hebrew University.

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Executive Summary

Background

The objective of this project was to investigate trends since 1995 in the health plans' hospital utilization and expenditures, given government-initiated health care reform and efforts by the health plans to contain spending on hospital services.

In 1995, two major policy changes were introduced, which had significant implications for the hospital-health plan relationship. The passage of the National Health Insurance Law redistributed health care monies from Israel's smaller health plans to its largest one, Clalit Health Services. As such, it provided the smaller health plans with a strong budgetary incentive to reduce spending in all areas, including on hospital services. The imperative to reduce spending was further supported by the introduction of a revenue cap in government hospitals in 1995 (and in almost all public hospitals in 1996), which curtailed the hospitals' incentive to promote utilization (in excess of the cap).

This project sought to provide the government, health plans, and hospitals with information about the rapidly changing hospital-health plan relationship. To this end, it sought information on changes in the hospital/health plan system and their impact on key actors in it. In order to make informed decisions about policy levers such as modifications of the cap and in the per-diem rate, government policymakers need information on how utilization and expenditure have changed since 1995. This report may also help the managers of health plans (roughly 50% of whose operating expenses may be ascribed to hospitals) and hospitals (roughly 80% of whose revenue comes from health plans) improve operating efficiency and organizational effectiveness. The project extended over three years; this document is a report of the information gleaned during the first year.

Study Goals and Design

The following were the specific aims of this project:

1. To review the history of capping, and determine how it changed incentives for the health plans and the hospitals.
2. To assess whether, when national health insurance and the cap were introduced, there were opportunities for reducing hospital utilization in Israel.
3. To document changes in the health plans' hospital utilization patterns in the wake of national health insurance, the capping initiative, the revised capping initiative, and health care reform.
4. To document and analyze changes in the pattern of health plan expenditures on hospital care in the wake of health care reform.
5. To document the nature and scope of specific measures taken by the health plans to contain hospital expenditures.
6. To place the Israeli experience in an international context regarding both trends in hospital expenditure and utilization levels and efforts by managed care organizations and other purchasers of care to control their hospital expenditures.

The study design distinguished among three key time periods:

1. The period immediately preceding national health insurance (1993-1994).

2. The period during which both national health insurance and strict hospital revenue caps were in effect (1995-1996).
3. The period during which the National Health Insurance Law was in effect, but revenue caps were modified so that health plans were charged marginal costs when exceeding the cap (1997-1998).

This report focuses on the first two on these periods.

Findings

1. An Historical Overview of Revenue Caps

The historical overview presented in this report was based on interviews with key government, hospital, and health plan officials. These interviews revealed that the idea for Israel's hospital revenue cap grew primarily out of the concern that the health plans would be caught in an impossible financial trap. In the early 1990s, hospital activity levels and revenues from the health plans had increased rapidly. However, the 1994 signing of a new financial rehabilitation agreement by Clalit Health Services implied that the nation's largest health plan would not have the resources to fund rapid growth in hospital activity. Moreover, the adoption of the National Health Insurance Law in 1995 suggested that all of the health plans' ability to increase their revenues would be severely constrained, and that the per capita revenue of the smaller health plans would decline with the introduction of capitation financing.

The primary objective of the revenue cap was to limit the rate of growth of health plan spending on hospital services. It sought to do so through two mechanisms: a) direct effects – that is, reduction of the amount of money the health plans would have to pay hospitals for a given level of utilization (if their activity levels exceeded the cap); and b) indirect effects – that is, changing the hospitals' incentives, and thereby reducing utilization rates.

During the initial years of the cap's implementation, uncertainty prevailed regarding several key issues, such as whether the cap was being applied to individual hospitals or to hospital systems, whether the cap constituted a temporary measure only, whether research accounts were subject to the cap, and whether spending in excess of the cap during a given year would be reflected in the next year's cap (and if so, how).

In 1995, the cap was applied to government hospitals only, and was set at a different percentage for each health plan (7.3% for Maccabi and Meuhedet, 5.5% for Leumit, and 2% for Clalit). In 1996, the cap was applied to all public hospitals (except Sha'are Zedek in Jerusalem), and a uniform rate of 2% was set for all health plans. At first it might appear that in 1995 the cap favored Clalit, which, after a mere 2% increase in activity level, would have been freed from paying for services. However, in effect, the cap favored the smaller health plans (in both 1995 and 1996), whose growth in membership far exceeded the cap, such that even if their per capita use rates remained stable or declined, they would be paying less to the hospitals.

2. Analysis of the Potential for Reducing Spending on Hospital Services

Data from the Central Bureau of Statistics (CBS) and the Ministry of Health for 1993 were used to compare hospital use rates by health plans prior to the introduction of national health insurance and the cap. Our analysis revealed that, relative to other health plans, Clalit had substantially higher

hospital admission rates and rates of visit to specialists in hospital outpatient departments (although it should be noted that Clalit's rate of visits to specialists overall was lower than that of the other plans). Controlling for differences in socio-demographic and health status variables (via logistic regression analysis) narrowed these differences, but did not eliminate them. Moreover, our analyses of health plan financial statements and data on hospital activity were consistent with the findings of the CBS and the Ministry: that is, that Clalit had substantially higher activity and expenditure on hospital services than did the other health plans. The consistency of these findings suggests that the changes introduced during the period under study offered Clalit a significant opportunity to reduce its use of hospital services. (Of course, it is possible that Clalit's hospital use rates were higher because of member characteristics not factored into our analyses.)

Data from the 1997 OECD data base and the Israel Ministry of Health's 1996 publication *Hospitals and Day Treatment Units* were used to compare Israel's 1995 hospital admissions rate and average length of stay with those of other industrialized countries. Analysis of the raw data revealed that the admission rate in Israel was close to the OECD median, whereas when the data were age-adjusted (as Israel has a relatively young population), Israel's admission rate ranked among the highest of the OECD countries. Regarding length of stay, however, both the raw and the age-adjusted figures for Israel were lower than those for the other OECD countries. This suggests that Israeli health plans seeking to reduce hospital inpatient use may have had greater opportunities for reducing admission rates than for reducing length of stay. (Of course, as in all international comparisons, these findings must be interpreted cautiously, as they may be due to differences in how the individual health care systems define or structure care; these issues will be examined more thoroughly during the second phase of the project.)

3. Analysis of Changes in Health Plan Utilization Patterns

Data were collected from the health plans about their activity at each of four types of hospital (government, Clalit-owned, owned by a non-government public association, and private) for 1994-1996. Activity was denominated in NIS, and reflected the amount of money the health plans would have been required to pay the hospitals in the absence of volume discounts and direct savings derived from exceeding the cap. The data were also adjusted to remove the effect of change in hospital prices (i.e. the per-diem rate). In addition, the data on total activity were translated into age-adjusted per capita data, based on the age distribution of each health plan's membership (as noted by the National Insurance Institute) and the age weights *for hospital use* that the Ministry of Health inputs into the calculation of the weights for the national health insurance capitation formula.

Our analysis reveals that in 1995, the activity at government hospitals of Leumit and Meuhedet far exceeded the cap; clearly, then, the cap generated significant direct savings for these two health plans. The activity at government hospitals of Clalit and Maccabi exceeded the cap only slightly; as such, their direct savings were marginal. However, it is possible that these two health plans may have had additional, indirect savings, due to the removal of the incentive to hospitals to increase activity levels.

In 1996, the cap yielded significant direct savings for three of the health plans. The smaller health plans' activity at government hospitals exceeded the cap (this was particularly true of Meuhedet, whose activity increased by 31%!), but that of Clalit exceeded the cap by less than 1%. In Clalit-owned hospitals, the total activity of Maccabi and Leumit grew by over 10% (i.e., well above the cap), but that of Meuhedet grew by just over 2%.

In addition to examining whether activity exceeded the cap, the project team also examined changes in age-adjusted per capita activity over time, by health plan. That analysis revealed that the age-adjusted per capita activity of the four health plans as a group declined by 3% in 1995, and remained stable in 1996. In 1995, all four health plans experienced a decline in age-adjusted per capita activity, whereas in 1996 this activity remained stable in two of the plans, and increased moderately in the two others.

At first, these findings appear to be at variance with the widespread perception, confirmed in the data cited above, that Meuhedet's hospital utilization substantially exceeded the cap. In fact, between 1994 and 1996, Meuhedet's total hospital activity increased by 28% (in contrast to the 9.3% envisioned by the cap), primarily due to the growth in that health plan's age-adjusted membership: 31%. Moreover, there was a major increase (50% overall, and 15% per age-adjusted member) in Meuhedet's use of government hospitals between 1994 and 1996, due in part to its having shifted activity away from other types of hospital: Whereas government hospitals accounted for 33% of Meuhedet's activity in 1994, their share had risen to 38% by 1996.

In this context, it is important to note that one way for the health plans to benefit from the cap was for them to concentrate their activity in selected hospitals systems. Interestingly, the distribution of activity among hospital systems remained virtually unchanged for Leumit and Clalit, while Meuhedet shifted its activity to government hospitals and Maccabi shifted its activity – slightly -- from government hospitals to Clalit-owned and private hospitals (particularly those owned by Maccabi itself). These shifts began in 1995, and continued in 1996.

Data from the Ministry of Health's National Hospitalization Data Base were consistent with these findings. They revealed that, between 1994 and 1996, age-adjusted hospital days per thousand population declined in all of the health plans. This was primarily a result of declining lengths of stay, rather declining admission rates.

4. Trends in the Health Plans' Patterns of Spending on Hospital Services

Trends in health plan spending on hospital services are influenced not only by changes in activity, but also by changes in official per-diem rates, the size and prevalence of volume discounts, and savings from utilization in excess of the cap. Accordingly, it is important to analyze changes in expenditure as well as in activity.

Our analysis of expenditure was based on audited health plan financial statements for the 1994-1996. Certain adjustments were made to ensure comparability among health plans and over time (see the full report). Data were analyzed in terms of real per capita expenditures, using the Consumer Price Index as the price deflator.

The analysis revealed that in 1995, the age-adjusted per capita spending on hospital services of the health plan as a group rose by 4% despite the following: a) age-adjusted per capita activity decreased by 3%; b) the smaller health plans were granted a 4% volume discount at government hospitals (which had been the sole province of Clalit in 1994); and c) both Leumit and, to a greater extent, Meuhedet realized significant direct savings from the cap at government hospitals. Savings

from these three factors were more than offset by the major increase in the hospital per-diem rate – 10% beyond the rate of increase of the Consumer Price Index.

In contrast, in 1996, the per-diem rate rose at only slightly above the rate of inflation, and no major new volume discounts were introduced. In addition, some of the smaller health plans realized non-negligible direct savings from the cap in 1996. As a result of the combined effect of these factors, age-adjusted per capita expenditures and age-adjusted per capita activity declined at the same rate: 1%.

5. Health Plan and Hospital Efforts to Influence Activity and Expenditure

Over 30 in-depth interviews were conducted with hospital directors and health plan executives to “tease out” the managerial story behind the numbers cited above.

The key finding of these interviews was that the health plans, particularly the smaller ones, viewed the cap as likely to be temporary. As a result, they made only marginal departures from their longer-term strategy of reducing hospital utilization. The two key measures employed by the health plans to reduce utilization were the development of community-based alternatives to hospital-based specialty services, and the reinforcement of utilization review within the hospitals. Strikingly, the interviews also revealed that while Clalit had sought to monitor and review utilization in government and other public hospitals for several years, it had only recently applied these techniques in its own hospitals.

The interviews also revealed that most hospital directors tried to ensure that activity would reach – but not exceed – the cap. In only a few cases, typically in peripheral regions, did hospital directors report trying to expand volume significantly beyond the revenue cap.

Interestingly, both hospital directors from around the country and health plan managers reported that quite a few hospitals offered the health plans various package deals. Typically, these proposals involved the provision of certain services in volume for a discounted rate (with short waiting times and a high level of service), in return for payment outside the cap. With few exceptions, the health plans rejected these proposals, as they preferred to receive services under the cap.

Discussion and Conclusions

The key finding of this project, to date, is that between 1994 and 1996 age-adjusted per capita hospital activity remained stable or declined in all four of the health plans, despite the introduction of the hospital revenue cap, which eliminated, or at least reduced, the short-term financial incentive to the health plans to reduce age-adjusted per capita activity. Several factors probably contributed to this:

- ◆ The health plans adhered to their long-term strategy of reducing their reliance on hospitals.
- ◆ Many hospitals attempted to restrain the growth of activity beyond the cap.
- ◆ There were capacity constraints and high occupancy rates in key inpatient departments.
- ◆ Apparently, the 4% of the population who “suddenly” became insured under national health insurance tended to use hospital services at below-average rates.

Interestingly, the greatest decline in age-adjusted per capita activity was found in Maccabi, which already had a low hospital use rate. It is possible that the introduction of the capitation formula

under national health insurance gave Maccabi a financial incentive – in the form of decreased revenue – to reduce costs.

Conversely, the smallest decline in age-adjusted per capita activity was noted in Clalit, which already had the highest hospital use rate. It is likely that Clalit's owning hospitals contributed to its ambivalence regarding utilization review and the development of community-based alternatives to hospital care. Furthermore, unlike Maccabi, Clalit experienced an increase in operating revenues immediately following the introduction of capitation, which may have "distracted" it from reducing hospital use. More recently, however, growing financial pressure on Clalit seems to be increasing its determination to reduce hospital use and expenditures.

Clearly, the cap did its part in reducing overall health plan expenditure on hospitalization. Exclusive of any indirect savings, the health plans enjoyed significant direct savings because their hospital activity grew more quickly than did the cap. To a large extent, these "cap over-runs" were due to growth in health plan membership, rather than to inappropriate behavior by either the hospitals or the health plans (although one of the health plans may have deliberately concentrated its activity in government hospitals). In determining the extent to which each health plan realized savings from the cap, policymakers should note the key role played by membership growth; in the future, it may be appropriate to set the cap relative to utilization per age-adjusted per capita membership, rather than relative to total utilization.

For the health plans as a group and the health system as a whole, it is likely to become increasingly difficult to reduce lengths of stay as a means of reducing hospital activity overall. It will therefore be important to monitor whether the health plans begin trying to avoid *unnecessary* hospital admissions – an effort that will require them to replace their administrative approach with a medical-administrative approach.

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The report was edited by Marsha Weinstein.

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1. Background

The objective of this project is to investigate recent trends in the health plans' hospital utilization and expenditures against the background of government-initiated health care reforms and health plan efforts to contain their level of spending on hospital services. The project seeks to provide the health plans, the hospitals, the government and the public with up-to-date information about the rapidly changing hospital-health plan relationship.

In this section we provide background information on the health plans, the hospital sector, and why health care reform has made the link between the two sectors even more critical than in the past.

The Hospital Sector

In 1995, Israel had 13,170 acute care beds in 487 hospitals (Table 1). The two largest owners of hospitals are the government and Clalit Health Services (Israel's largest health plan), with approximately 45% and 30% of the beds, respectively. Another 20% of the beds are in other voluntary or church-affiliated hospitals, and the remaining 5% are in private, for-profit hospitals (Ministry of Health, 1996).

Table 1: General Hospitals in Israel: Basic Statistics (Acute Care Beds Only)

	1975	1985	1995
Hospitals	46	43	47
Beds	11,309	11,908	13,170
Average length-of-stay	8.0	6.1	4.5
Occupancy rate	86.9%	89.8%	94.8%
Per 1,000 admissions			
Beds	3.3	2.8	2.4
Discharges	130	148	177
Days	1,037	911	818

Source: Ministry of Health. 1994. *Hospitals and Day Care Units in Israel 1993*. Division of Information and Computer Services, Jerusalem. (Hebrew)

Recent trends in admissions, patient days, and length of stay parallel developments in many other Western countries. The admissions rate has increased dramatically over the past ten years – from 148 to 177 per thousand population per year (an increase of 20%). At the same time, however, the number of patient days per thousand population has declined by 10% in the past decade, as the increase in admissions has been more than offset by declining lengths of stay. Indeed, as in many other countries, the average length of stay has fallen rapidly in the past two decades, from 8.0 days in 1975 to 6.1 days in 1985 and 4.5 in 1995 (Ministry of Health, 1996). Not surprisingly, cost per day (as reflected in the official per-diem rate for hospital services) has increased substantially – from approximately \$110 in 1986 to over \$300 in January, 1995 (Government of Israel, 1995). In addition, in recent years there has been substantial growth in hospital outpatient activity.

In 1992, the nation spent approximately \$2 billion on the care provided in general hospitals¹ (Central Bureau of Statistics, 1995a). This figure has probably increased in recent years, due to substantial wage hikes recently granted to physicians, nurses, and other professionals working in hospitals, the absorption of immigrant physicians, technological advancement, and other factors.

The Health Plan Sector

Under the new National Health Insurance Law, all residents of the State of Israel are entitled to health insurance, and they can currently choose from among four competing health plans. As noted, the largest of these is Clalit Health Services, which has an approximately 60% market share – a decrease from close to 80% in 1981. Until recently, Clalit was owned and operated by the Histadrut, Israel's powerful labor federation, but the National Health Insurance Law effected a separation between the two organizations. Clalit, which is operated essentially as a staff model health maintenance organization (HMO), owns and operates eight general hospitals. Among the health plans it has the highest concentration of elderly members, members with low income, and members with chronic illnesses.

The next largest plan is Maccabi Healthcare Services, with a 20% market share. Maccabi, which has doubled in size in the past six years, provides most of its services through independent physicians, and as such can be considered an IPA model HMO. During the 1990s, Maccabi acquired two small acute care hospitals; however, it continues to purchase most of its hospital services from external providers.

The two smallest health plans, Meuhedet and Leumit, have a market share of 10% each. Meuhedet relies primarily on independent physicians, while Leumit uses a mix of independent physicians and salaried staff physicians. Both plans have grown rapidly in recent years. Neither owns any hospitals.

The Hospital-Health Plan Relationship

Health plans are the largest purchasers of hospital services in Israel. For example, in 1995 they accounted for 81% of the revenues in government hospitals. The other major purchasers of care were the National Insurance Institute (Israel's social security administration, which at the time paid for maternity care and work-related injuries), the Ministry of Defense, tourists, and insurers of road injuries.

The purchase of hospital care by health plans is governed by a number of different reimbursement arrangements. Generally speaking, outpatient services are reimbursed according to a fee schedule established by the Ministry of Health, although health plans have begun to secure discounts from the official fee schedule for some outpatient services. Approximately two-thirds of hospital admissions are reimbursed on a per-diem basis, where the per-diem rate is established by the Ministry of Health. Other admissions are reimbursed on a DRG-type basis; the Ministry of Health has established "differential", per admission rates for 26 different procedures and diagnoses. A

¹The \$2 billion spent on general hospitals in 1992 accounted for approximately one-third of Israel's current health expenditure. The national health account category "hospitals and research", which includes psychiatric and geriatric hospitals as well as general hospitals, accounted for 42% of current expenditure on health and 68% of capital expenditure.

hospital revenue cap was introduced in 1995 and subsequently modified; it is discussed in detail below.

Expenditure for hospital services constitute the single largest component of health plan spending. In 1992, hospital services accounted for 48% of total health plan operating expenditure;² the proportion of operating expenditure accounted for by hospital services ranged from 30% in Maccabi Healthcare Services to 54% in Clalit Health Services. On a per-capita basis, average health plan spending for hospital services was in excess of \$400 (Rosen and Nevo, 1996). That figure is believed to have increased since 1992 due to wage hikes, technological advancements and other factors.

With hospital care accounting for a significant portion of health plan expenditures, it is not surprising that even prior to national health insurance, the health plans had engaged in a variety of efforts to control hospital costs. These included the development of community-based services as an alternative to hospitalization, ongoing pressure on hospitals to reduce lengths-of-stay, and even the acquisition of hospitals.

The Hospital-Health Plan Relationship and Health Care Reform

The Israeli health care reform has three major components: the introduction of national health insurance, the decentralization of the hospital system and the reorientation of the Ministry of Health from direct care provision to policymaking, planning and regulation. Each of these changes has implications for the relationship between Israel's health plans and its hospital sector.

The decentralization of the hospital system is a gradual process which began in the early 1990s and has still not been completed. Full implementation of this element of the reform in the coming years could increase hospital expenditures, as it gives hospital managers greater incentives to develop new services, market old ones and, generally speaking, increase revenues. (As hospital managers around the world have learned, it is easier to increase profits by increasing revenues than by cutting costs.)

At the same time, however, the introduction of national health insurance has capped the total amount of money available to the health plans as a group. It has also brought about a major shift in the distribution of the money among the health plans, with some of the plans experiencing a drop of over 10% in real per capita revenues between 1994 and 1995.³ On the other hand, by specifying a legal entitlement to a basket of services, national health insurance may yet induce increased consumer demand for expensive hospital-based services. Clearly, in order to survive, let alone prosper, the health plans will have to work to contain their members' utilization of hospital services and hence their own expenditures for those services.

²Pharmaceuticals accounted for 16% of operating expenditure, while community-based services and administration accounted for the remaining 36%.

³Note that it is those health plans (Maccabi and Meuhedet) with the largest overall levels of pre-national health insurance spending, and lower levels of pre-national health insurance hospital spending, which have been hardest hit by the new financing scheme.

With its new emphasis on planning, policymaking and regulation, the Ministry of Health is also now a party to the health plan-hospital relationship. For example, in order to help the health plans make the transition to national health insurance, in 1995 the Ministry of Health established a system of hospital spending caps. In several other countries hospital spending caps have been used effectively to constrain hospital expenditure growth (Glaser, 1987) – in some cases by reducing the volume of service (Redmon and Yakobski, 1995). A key question is whether they have had a similar effect in Israel, as well.

2. Study Goals and Design

The following were the specific aims of this project:

1. To review the history of capping, and determine how it changed incentives for the health plans and the hospitals.
2. To assess whether, when national health insurance and the cap were introduced, there were opportunities for reducing hospital utilization in Israel.
3. To document changes in the health plans' hospital utilization patterns in the wake of national health insurance, the capping initiative, the revised capping initiative, and health care reform.
4. To document and analyze changes in the pattern of health plan expenditures on hospital care in the wake of health care reform.
5. To document the nature and scope of specific measures taken by the health plans to contain hospital expenditures.
6. To place the Israeli experience in an international context regarding both trends in hospital expenditure and utilization levels and efforts by managed care organizations and other purchasers of care to control their hospital expenditures.

Of course, efforts to reduce expenditures by moving services from hospitals to community settings do not always reduce total expenditures. Accordingly, changes in the hospital utilization and expenditure by the health plans will be analyzed in light of related changes in the health plans' community-based services.

Efforts to reduce hospital spending can also lead to a deterioration in quality. A full analysis of how such efforts by Israeli health plans affect the quality of care is beyond the scope of this project. Once the principal health plan strategies for containing hospital costs have been identified, their impact on quality of care may be a topic for more in-depth study by researchers who specialize in quality of care.

While this project has considered all age groups, it will emphasize the elderly population. This age group, which accounts for roughly 10% of the population, is characterized by the most intensive hospital use, and accounts for 30% of hospital admissions and 40% of hospital days. As such, it is likely to be one of the foci of health plan cost containment efforts. The elderly are also particularly vulnerable to deterioration in the quality of care, due to their poor overall health condition, and social and economic factors that may complicate post-hospital care. Moreover, the health plans and the Ministry of Health are currently developing post-acute care options for the elderly; it will be important to track how this affects utilization and expenditure.

The original hypotheses that guided the design of the study may be found in Appendix I.

The study design distinguished among three key time periods:

1. The period immediately preceding national health insurance (1993-1994).
2. The period during which both national health insurance and strict hospital revenue caps were in effect (1995-1996).
3. The period during which the National Health Insurance Law was in effect, but revenue caps were modified so that health plans were charged marginal costs when exceeding the cap (1997-1998).

The study compares the health plans' hospital utilization patterns, expenditures for hospital care, and efforts to contain hospital expenditures during each of the three time periods. In addition, it compares each of the health plans and the health plans as a group over time.

This project spanned three years, making it possible to monitor changes in health plan behavior, utilization, and expenditure both in a period when hospital revenues were capped and when they were not. While the final report will only be published in 2002, policy-relevant results have already been made publicly available.

3. The Hospital Revenue Cap: An Historical Overview

Much has been written about Israel's National Health Insurance Law, and as such there is no need to recapitulate its history and content here. On the other hand, almost nothing has been written about the other major change that has influenced the hospital-health plan relationship: the hospital revenue cap. Accordingly, this chapter reviews the history of the cap in some detail, and analyzes the incentives inherent in it. This lays the groundwork for subsequent chapters, which analyze changes in hospital utilization and expenditure between 1994 and 1996. The historical overview presented in this chapter was based on interviews with key actors and a review of relevant documents.

Israel's hospital expenditure cap was instituted in 1995, but its roots are in several key developments that took place in the preceding years: the end of the global budget agreement between Clalit Health Services and the government hospitals in 1991; the move toward decentralization of the government hospital system; the 1994 financial rehabilitation agreement for Clalit; and the passage of the National Health Insurance Law.

The hospital expenditure cap has its historical antecedents in the 1980s. From 1981 to 1989, a global budget governed payments by Clalit Health Services to the government hospital system. The global payment for inpatient services was set at the per diem rate times 1.08 million days (which in turn was the result of multiplying .94 days per member by 1.14 million – the number of members of Clalit residing in regions served by government hospitals under the prevailing regionalization agreement). An additional 18% was added to this figure to cover the cost of hospital-based outpatient services. The global budget agreement lapsed in 1990. Until that time, real per capita

spending in government hospitals had been fairly stable. In the early 1990s spending took off, with real per capita spending increasing by approximately 35% between 1991 and 1993!

In addition, some respondents discussed the process that was initiated to gradually transform government hospitals into independent, non-profit trusts. The change in the hospitals' ownership and legal status was stymied by opposition from key labor unions. Nonetheless, by 1994 the hospitals' autonomy from the Ministry of Health central office had increased considerably. Key personnel changes no longer required central office approvals, there was more flexibility in allocating the budget and, perhaps most importantly for our purposes, hospital budgets had become primarily a function of their revenues. The combination of an enhanced incentive to increase revenues and the greater freedom to undertake certain initiatives without central office involvement led the hospitals to develop new services and undertake efforts to increase the utilization of existing services.

Of course, the flip side of increased revenues for the hospitals was increased expenditures for the health plans (what with the health plans accounting for approximately 80% of hospital volume). These increased expenditures came at a particularly delicate time, as in 1994 Clalit Health Services signed a landmark financial rehabilitation agreement with the government in which Clalit undertook to severely constrain the growth in its expenditures. Clalit's management argued that it would be difficult for it to constrain expenditure growth without some help from the government in restraining government hospitals' efforts to increase activity levels and sales. The term "hospital spending cap" was first used officially in section 33 of the financial rehabilitation agreement with Clalit.

In addition, the passage of the National Health Insurance Law in June, 1994 (implemented in January, 1995) portended a new era, in which health plan revenues would be constrained by government decisions. The level of payments by individuals for health insurance would no longer be set by market forces (which might have made it possible for the health plans to pass increased expenses for hospital care on to their members), but rather by the government, in the form a health tax (the so-called capitation formula). (Hence, they would be subject to political and fiscal considerations far beyond those of the health care system.) Thus, key actors in the Ministry of Health and elsewhere in the health system were concerned that the twin developments of increased hospital activity and national health insurance financing could put the health plans in an impossible situation: That is, they would face a rapid increase in hospital expenses with no opportunity to cover increased expenses via increased revenue. This concern was especially acute for managers of Maccabi Healthcare Services and the Meuhedet Sick Fund, who also expected that the move to capitation financing would lead to major reductions in their per capita revenues. They (successfully) insisted that the hospital spending cap incorporated into the financial rehabilitation agreement for Clalit be extended to them, as well.

The hospital expenditure cap was seen as a way to divert the system from a collision course by limiting the rate of growth of health plan spending on hospital services. It sought to do so through two mechanisms: a) "direct effects" – that is, reducing the amount of money the health plans would have to pay hospitals for a given level of utilization; and b) "indirect effects" – changing hospitals' incentives so as to reduce utilization rates.

The First Year of the Cap: 1995

In its first year, the cap applied only to government hospitals. The decision to start with government hospitals appears to have been influenced by several factors. First, this sector already had the precedent of the global budget arrangement with Clalit Health Services. Second, it was this sector that had been undergoing rapid growth in activity and expenditures. Third, it was this sector that was undergoing a process of decentralization, which was expected to give hospital managers an increased ability to market services and enhance revenues. Finally and probably most importantly, as the Ministry of Health owned these hospitals, there were no legal barriers limiting it from imposing new rules on this sector, whereas with regard to Clalit and public hospitals, the legal basis for imposing a revenue cap via administrative directives was open to question.

The cap essentially governs the extent to which changes in *the amount of hospital services* consumed by a health plan will be reflected in the *amount of money* that the health plan will be required to pay a hospital. Note that while it governs the link between payment and volume, it leaves the amount of payment open to other influences – chief among which are changes in the per-diem rate and volume discounts from the per-diem rate. These price issues will be discussed in detail below.

Let us illustrate how the cap influences the link between volume changes and payment, *while holding constant any potential price changes*. Let us consider a cap of 2% (the level at which the cap was set for Clalit in 1995). In 1994, Clalit consumed NIS 1,565 million worth of services at government hospitals. A 2% cap translates into a spending ceiling of NIS 1,596 million. As shown in Table 2, even if in 1995 Clalit had consumed more than NIS 1,596 million worth of services, it would still have paid only NIS 1,596. On the other hand, if Clalit had consumed less than NIS 1,596 million worth of services, it would have paid only for the services consumed, irrespective of whether they cost NIS 1,565 million, NIS 1,500 million, or less.

Table 2: The Potential Impact of a Cap of NIS 1,596 Million (in Millions of NIS)

Actual Value of Hospital Services Purchased	Amount Due
1,500	1,500
1,550	1,550
1,600	1,596
1,650	1,596

This arrangement is consistent with the belief that major increases in hospital activity are primarily the result of decisions and activities undertaken by hospital management. In essence, the cap was instituted to protect the health plans from efforts on the part of the hospitals to “artificially” increase the volume of services which they provided to the health plans. Accordingly, it made sense to signal the hospitals that substantial increases in activity would not result in a commensurate increase in revenue – in other words, inappropriate behavior by the hospitals would no longer be rewarded, and would even be punished.

Note that a cap can help the health plans in two distinct ways. First, if activity exceeds the cap, services above the cap are provided free to the health plan. Second, even if the cap is not exceeded,

it may play a role: that is, hospitals may desist from increasing activity levels precisely because they know that such activity will not result in increased revenue.

All of this is well and good, if the hospitals are indeed the primary determinants of activity levels. But what if epidemiological or other natural developments increase hospital use rates? Or what if increased hospital use is the result of population growth or an upsurge in immigration? Is it then fair to let hospitals incur additional cost without compensating them at all? More significantly, the new system essentially gave the health plans an incentive to shift certain activities from community to hospital settings, as any services consumed above the cap were, in effect, free. If response to this incentive made the health plans, rather than the hospitals, take steps to increase hospital activity, would it still be fair to limit hospital revenues to the levels implied by the caps? As this gets a bit ahead of our story, we will return to it a bit later. First, let us go back to a simple description of the rules of the game during the first year of the cap.

In 1995, the cap was set at different levels for each of the health plans: only 2% for Clalit, but 5.5% for Leumit, and 7.3% for Maccabi and Meuhedet, respectively. The logic behind this was that in 1994 Maccabi and Meuhedet were growing more quickly than was Clalit, and Leumit's growth rate was intermediate. The cap was introduced at the end of 1994, on the eve of the watershed introduction of national health insurance. Accordingly, it is not surprising that even the best experts were at somewhat of a loss to predict health plan growth levels for the year ahead. In retrospect, as can be seen in Figure A, it is now clear that the cap levels were not at all proportionate to the actual growth rates of the health plans. In effect, the cap gave a much bigger break to Maccabi and Meuhedet than to Clalit. For example, the number of age-adjusted members of Maccabi grew by approximately 19% which – assuming there was no change in age-specific use rates at government hospitals⁴ – would have translated into an increase in government hospital use of approximately 19%. However, the cap exempted Maccabi from paying for volume increases beyond 7.3%! In contrast, Clalit's membership grew by only 3.6%, implying only a 3.6% increase in government hospital use (assuming, again, that use rates at government hospitals remained constant), so that a 2% cap provided only a very small margin of “free services”.

Thus, while it might first appear that those health plans with the lowest cap levels had the greatest benefit, that in fact was not necessarily the case. What mattered most was not the absolute level of the cap, but the level of the cap in relation to actual membership growth. In short, while the differential nature of the cap was a step in the right direction, it did not go far enough in that regard.

For much of 1995, as well, the rules of the game remained vague. For example, both hospital managers and health plan managers claim that until late in the year they were uncertain as to whether the cap applied to the use of services in a specific hospital, or in the entire government hospital system.⁵ Thus, it was unclear whether it was in a health plan's interest to concentrate activity at selected hospitals where they were sure to exceed the cap, and where every service above

⁴ As will be discussed below, this assumption would have made sense had Maccabi's growth been uniform across regions. In fact, its growth was greatest in the periphery, while in the center of the country, where government hospitals are concentrated, its growth rate was much lower.

⁵ This claim by the health plans is somewhat puzzling, as the cap was essentially an extension of section 33 of Clalit's financial rehabilitation agreement, which clearly relates to the government hospital system as a whole and not to individual hospitals.

the cap would be free. It was also uncertain whether services provided in the framework of “research accounts”⁶ were governed by the cap, and whether the activity levels of 1995 would influence the level of the cap for 1996.

Ultimately, each of these issues was resolved. The 1995 cap was determined to be system-wide, rather than hospital-specific; research accounts activities were included in the cap, and 1995 activity levels did not influence the level of the 1996 cap. However, these are things we know in retrospect, and which cannot be assumed to have shaped hospital and health plan behavior in 1995. In the end, it is only from interviews with key players that we can hope to gain insight into how these issues were perceived in 1995, and what behavior emerged from their beliefs. This is particularly true of individual hospital directors, as it is not immediately obvious how the rules of the game and the incentives for a given hospital system were translated into rules and incentives by a specific hospital.

Complicating matters were other key changes, which had important implications for the hospital-health plan relationship:

1. The hospital per-diem rate increased by almost 20% in nominal terms, and by almost 10% in real terms (i.e. over and above the Consumer Price Index).
2. The three smaller health plans were granted a 4% volume discount off the per-diem rate – a discount that Clalit had already begun receiving in 1994.
3. The introduction of universal coverage under national health insurance brought about a 4% increase in the number of persons enrolled in the health plans. This, combined with immigration and natural population increase, led to a 7.6% increase in age-adjusted members. As total health plan revenues increased by only 5.0%, this implied a 2.5% decrease in per capita revenues.
4. National health insurance also brought about a major shift in per capita revenues among the health plans. As can be seen in Figure B, per capita national health insurance-related revenues decreased by 15% in Maccabi and by 7% in Meuhedet, but increased by 11% in Clalit. These radical shifts were offset somewhat by a major reduction in government subsidy to Clalit (which had been approximately NIS 1 billion in 1994), and the introduction of time-limited subsidies to the smaller funds to ease their adjustment to national health insurance. Even with this buffering effect, however, total per capita revenues declined sharpest in Maccabi (Figure C), and the handwriting was on the wall for a further revenue decline in Maccabi and Meuhedet once “transition” funding ran out.

The increase in the per-diem rate and the volume discount to the smaller health plans together produced the price effect for each of the health plans. Table 3 indicates how prices of and payment to government hospitals would have changed for each health plan in three different scenarios: a) a 5% increase in per-member government hospital use; b) stable per-member government hospital use; and c) a 5% decrease in per-member government hospital use. It shows that the cap mediated how volume changes were translated into changes in expenditure, but did not affect how changes in the per-diem rate were translated into changes in expenditure. It also shows that in 1995 the caps

⁶ “Research accounts” are separate accounts maintained by hospitals. Although originally intended to be used for research, these accounts have come to be repositories for revenues from after-hours services, which are then used to more generously compensate medical staff.

were set such that – aside from Clalit – health plan expenditures would have been exactly the same whether there were a 5% reduction in use rates or a 5% increase in use rates!

The introduction of universal coverage and the shift in per capita revenues influenced the extent to which individual health plans (and the health plans as a group) faced financial pressure from declining per capita revenues. It is likely that the greater the immediate decline in revenues, the more any given health plan may have felt pressured to reduce its costs in the short term, even if that meant risking greater expenses in the long term. At the same time, the greater the “permanent” decline in revenue, the greater the incentive for any given health plan to reduce hospital expenses in the long term. This paper will explore how these incentives actually affected the health plans’ utilization of hospital services.

Table 3: Potential Effects of Changes in Utilization Rates of Government Hospital Services, 1995 (in %)

	Health Plan			
	Clalit	Leumit	Maccabi	Meuhedet
Assuming a 5% Increase in Utilization Rates				
Growth in				
Membership	3.6	13.6	19.0	18.8
Change in utilization rate	5.0	5.0	5.0	5.0
Actual utilization	8.8	19.3	25.0	24.7
Cap	2.0	5.5	7.3	7.3
Quantity effect	2.0	5.5	7.3	7.3
Price effect (change in per-diem rate)	9.8	5.8	5.8	5.8
Implied change in payment	12.0	11.6	13.5	13.5
Assuming No Change in Utilization Rates				
Growth in				
Membership	3.6	13.6	19.0	18.8
Change in utilization rate	0.0	0.0	0.0	0.0
Actual utilization	3.6	13.6	19.0	18.8
Cap	2.0	5.5	7.3	7.3
Quantity effect	2.0	5.5	7.3	7.3
Price effect (change in per-diem rate)	9.8	5.8	5.8	5.8
Implied change in payment	12.0	11.6	13.5	13.5
Assuming a 5% Decrease in Utilization Rates				
Growth in				
Membership	3.6	13.6	19.0	18.8
Change in utilization rate	-5.0	-5.0	-5.0	-5.0
Actual utilization	-1.6	7.9	13.1	12.9
Cap	2.0	5.5	7.3	7.3
Quantity effect	-1.6	5.5	7.3	7.3
Price effect (change in per-diem rate)	9.8	5.8	5.8	5.8
Implied change in payment	8.1	11.6	13.5	13.5

The Second Year of the Cap: 1996

While in 1995 the cap applied only to government hospitals, in 1996 it was applied to Clalit's hospitals and to most public hospitals.⁷ Non-government hospitals were given the choice of whether or not to enter into the cap arrangement. The incentive to do so was the promise of a higher per-diem rate: 11.8%, as opposed to 8.8% for those who did not enter into the arrangement. Jerusalem's

⁷ These included Hadassah, Laniado, Bikur Holim and Misgav Ladach.

Sha'are Zedek Medical Center was the only public hospital that elected to accept the 8.8% rate, so as not to enter into the cap framework.

Another difference between 1995 and 1996 was that in 1996, the cap was set at a uniform 2% for all of the health plans. In retrospect, and in light of the marked differences in health plan growth rates, this uniformity seems somewhat odd, given the different growth rates of the health plans (see Figure D). As in 1995, the cap favored Maccabi and Meuhedet far more than it favored Clalit.

Other key developments in 1996 included a continued decline in per capita health plan revenues (although this time there was no radical shift in per capita revenues from one health plan to another); a far more moderate increase in the per diem rate than had taken place in 1995; and a short-lived change (during the first half of 1996 only) in the reimbursement rules for internal medicine wards.

A key feature of the events in 1996 was the growing sense that the cap would probably be modified in 1997. It is not clear how this influenced incentives and behavior.

The Third Year of the Cap: 1997

In 1997, the following major changes were made in the cap arrangement:

1. Whereas in 1995 and 1996, hospitals received no revenue at all for activity above the cap, starting in 1997 they received 50% of what they would have billed for activities above the cap if there were no cap. The underlying objective was to reimburse hospitals reimbursed at a rate resembling marginal costs. It was hoped that this would reduce the hospitals' incentive to avoid providing services once the cap had been reached, without re-introducing the pre-cap incentive for hospital managers to provide services of marginal value to the patient. In addition, to the extent that health plans also have an influence on hospital activity levels, the objective was to reduce their incentive to inappropriately shift activities and costs (once the cap had been reached) from the community to the hospital.
2. Following the 1997 Budget Reconciliation Law, the cap applied to all hospitals, whether owned by the government, Clalit Health Services, or a public association. Moreover, the cap no longer relied on voluntary agreements, but was grounded in legislation.
3. As in 1996, the overall average cap for the system was set at 2%. Unlike the 1996 situation, the cap was not uniform across health plans. The caps for the individual health plans were as follows: 0.8% for Clalit; 6.1% for Leumit; 5.2% for Maccabi; and 9.0% for Meuhedet. Note that the weighted average of the caps for the four health plans was 2% (the weights were for age-adjusted members).
4. Unlike the situation in 1996, in 1997 the previous year's activity levels (and the extent to which each health plan exceeded the cap) were taken into account in setting the cap for each health plan. Health plan specific caps for 1997 were also influenced by the 1996 growth rates of the health plans (presumably as proxies for 1997 growth rates).
5. Instead of system-wide caps, which prevailed until 1997, separate caps were set for each hospital and for each health plan.

For a discussion of the implications of this arrangement for the health plans and the hospitals, and a report on how use rates and expenditures changed in 1997, see the second report.

4. Patterns of Hospital Utilization Prior to National Health Insurance: Were There Opportunities to Reduce Utilization?

At least to date, Israeli health plans have had little direct influence on the price they pay for hospital services. The per-diem rate is established by the government, as is the differential payment for those 26 categories of hospital admission that are reimbursed on a DRG-like basis. There is more flexibility in payment for outpatient services, for which the Ministry of Health fee schedule establishes maximum prices; also, to some extent, the health plans do negotiate discounts for certain treatments and tests. Still, it is fair to say that, at least to date, the principal avenue available to health plans seeking to control hospital expenditure has been to constrain utilization, rather than to achieve price reductions. Moreover, it appears likely that in the years to come, utilization controls will continue to be an important aspect of health plan cost containment efforts.

Our expectation, based on past experience in Israel, was that the health plans would be able to find ways to reduce hospital utilization (Gross et al., 1996) and that those funds faced with the greatest financial pressure would be those to introduce the most far-reaching changes. Among those measures that we expected to be introduced were the movement of service provision from inpatient settings to hospital outpatient settings; the movement of service provision from hospital outpatient settings to community settings; the channeling of patients to hospitals that provide care at a lower cost to the health plan; and the development of extensive post-acute care options to reduce lengths-of-stay in acute hospitals (see Appendix II for a list of potential health plan strategies for reducing utilization and expenditure).

One of the key questions facing Israeli policymakers and health plan managers is whether, and to what extent, it was possible in 1995 to reduce hospital utilization and expenditure. We seek to gain insights into this issue from two types of analysis: a comparison across health plans, and an international comparison.

The data for comparison across health plans were taken from the *Use of Health Services Survey* carried out by the Central Bureau of Statistics in conjunction with the Ministry of Health. The survey encompassed a national representative sample of approximately 20,000 individuals. The resulting data base contains data on health plan affiliation, number of hospital admissions, number of visits to hospital-based specialists, number of visits to various community-based providers, and demographic parameters (Central Bureau of Statistics, 1995b).

Prior to national health insurance, health plans differed significantly in per capita hospital admissions and visits to hospital-based specialists (see Table 4). For example, the rate of hospital admissions per capita for members of Clalit was almost double the rate of members of Meuhedet. Moreover, while Clalit's members visit specialists less often than do their counterparts in other health plans (when both community-based and hospital based specialists are taken into account), they are nonetheless more likely to visit **hospital-based** specialists.

Table 4: Annual Use of Health Services per Thousand (Insured) Population Prior to National Health Insurance

	Health Plan				Total
	Clalit	Leumit	Maccabi	Meuhedet	
Hospital admissions	161	123	88	74	140
Visits to primary care physician	2,038	2,448	1,792	1,607	2,003
Visits to a nurse	382	219	156	150	316
Visits to a specialist	552	803	682	642	601
Hospital-based	165	132	57	94	140
Community-based	387	671	624	548	461

Source: 1993 Use of Health Services Survey, Central Bureau of Statistics

Naturally, the question arises as to whether these differences are due to differences in member characteristics. The professional literature indicates that a person's tendency to use health care services can be influenced by many factors aside from his health plan affiliation (Shortell, 1980; Greenlick, 1988). The older a person is, and the sicker he is, the more likely he is to seek health care. There is much evidence that health care utilization patterns differ between men and women, with the magnitude and direction of the difference varying by age group and type of service. Differences in health care needs and health seeking behavior may also be related to a person's education and income, with poorer and less educated people having greater needs, but (relative to their greater need) facing greater barriers to obtaining health care. Ethnic and cultural background may also affect access to health services: In Israel, some of those who may encounter barriers to obtaining services are non-Jews (approximately 20% of the population) and new immigrants from the former Soviet Union (over 10% of the population). Geographic location (i.e. place of residence) may also play a role, with areas that have a greater supply of health care providers also tending to have higher utilization rates. Social factors, such as whether a person lives alone, can also influence utilization rates.

Tables 5 and 6 summarize these factors as indicated by the 1993 Use of Health Service Survey. It is particularly noteworthy that Clalit had a greater concentration of members in peripheral and rural areas, Clalit and Leumit had relatively high percentages of non-Jewish members, and Leumit had a relatively high percentage of new immigrant members. The Survey did not ask about income level, but the data it provides on education level and housing conditions suggest that more members of Clalit and Leumit have lower socio-economic status, relative to members of the other plans. Clalit also had the largest proportion of members undergoing treatment for each of the chronic diseases included in the Survey: asthma, diabetes, heart disease, high blood pressure, kidney disease and ulcer (see Table 6).

Table 5: Demographic Characteristics of Health Plan Members Prior to National Health Insurance (in %)

	Health Plan				Total
	Clalit	Leumit	Maccabi	Meuhedet	
Average age (in years)	33	29	28	27	31
Over 65	12	7	5	5	10
Under 5	7	9	10	11	8
Male	49	49	48	49	49
Jewish	82	85	98	91	86
Elementary education only (adults)	23	15	8	8	19
Employed (ages 25-64)	60	60	70	63	62
More than 2 people per room	7	8	3	5	6
Lives in peripheral area	34	29	12	15	28

Source: 1993 Use of Health Services Survey, Central Bureau of Statistics

Table 6: Percentage of Health Plan Members with Chronic Diseases under Treatment Prior to National Health Insurance

	Health Plan				Total
	Clalit	Leumit	Maccabi	Meuhedet	
Asthma	2.7	2.7	2.4	1.4	2.6
Diabetes	3.5	2.3	1.6	1.4	3.0
Heart disease	4.7	2.9	1.7	2.0	3.9
Hypertension	7.2	5.0	3.1	2.5	6.0
Renal disease	1.0	0.6	0.3	0.4	0.8
Ulcer	2.8	2.4	1.5	1.0	2.5
At least one chronic condition	15.7	12.0	8.5	6.4	13.6
Average number of chronic conditions	.361	.271	.160	.148	.307

Source: 1993 Use of Health Services Survey, Central Bureau of Statistics

Logistic regressions were used to assess whether differences in the health plans' hospital utilization rates remained stable after controlling for differences in member characteristics. For each of the utilization variables of interest (days, OPD visits, etc.) three models were run. Model 1 included only one independent variable – health plan; in Model 2, age was added, while in Model 3 region of residence, size of settlement, ethnic background, immigration status, and key chronic conditions were also added. As can be seen in Table 7, significant differences remained even after controlling for differences in member characteristics.

Table 7: 1993 Hospital Admission Rates, by Health Plan (Adjusted so that Clalit = 100)

Health Plan	Raw Data	Age-adjusted Data	Data Adjusted for Additional Variables
Clalit	100	100	100
Leumit	68	77	79
Maccabi	60	73	79
Meuhedet	51	63	67

The differences among health plans imply that hospital utilization in Israel is not determined completely by health care needs. Rather, it seems that how a health plan manages care and controls utilization influences both utilization rates and expenditures. For example, it appears that Clalit Health Services may be able to do more than it has in the past to reduce its use of both inpatient and outpatient hospital services.

One of the key questions that arises, then, is whether Clalit’s relatively high hospital utilization rates are due to its owning hospitals and hence being less judicious than the other plans in its control of hospital utilization. To gain insight into this question, we compared the hospital utilization rates of the health plans in Jerusalem – an area in which Clalit owns no hospitals.

As can be seen in Table 8, even in Jerusalem, Clalit’s 1993 hospitalization rate was higher than that of the other health plans (data for the three other plans are presented in the aggregate, due to sample size limitations). In fact, Clalit’s rate of use of Jerusalem area hospitals is *three times* that of the other plans, whereas nationally it is two times that of the other plans. This may be due in part to the relatively high concentration in Jerusalem of members of the Meuhedet Sick Fund – the health plan with the lowest rate of hospital admissions. However, as the pattern persists even after controlling for health plan, age, and other member characteristics, this would appear to offer a partial explanation only.

Table 8: Hospital Utilization Rates Nationally and in Jerusalem Prior to National Health Insurance, by Health Plan (per 10,000 Members)

	Clalit	Other Health Plans	Ratio Clalit: Other Plans
Hospital admissions (annually)			
Nationwide	162	95	1.7
Jerusalem	176	57	3.1
Hospital outpatient clinic visits (per quarter)			
Nationwide	165	78	2.1
Jerusalem	205	182	1.1
Total specialist visits (per quarter)			
Nationwide	552	706	0.8
Jerusalem	538	723	0.7

It is interesting to note that Clalit had a higher rate of visits to hospital outpatient clinics in Jerusalem than did the other health plans (as a group), although the gap between it and the other plans was much smaller in Jerusalem than nationally. It is likely that Maccabi and Leumit, as well as Clalit, had limited community-based specialty services in Jerusalem in 1993; the same was probably not true of Meuhedet, which, as noted, had a large membership in Jerusalem. It is important to note that in regarding total (both community- and hospital-based) specialty visits, Clalit’s rate was 30% *below* that of the other health plans in Jerusalem, and 20% below that of the other plans nationwide.

Table 9 compares hospital utilization rates by health plan members’ age group. It reveals that while the largest absolute differences are among the elderly, the largest percentage differences are among those ages 35-54. This suggests that while it may be wise for Clalit Health Services to focus its

efforts to reduce hospital use on the elderly, it should not neglect other age groups, which may also afford important opportunities to increase efficiency.

Table 9: Hospital Admission Rates Prior to National Health Insurance, by Health Plan and Members' Age Group

Age Group	Clalit	Other Health Plans	Ratio Clalit: Other Plans
0-4	176	170	1.04
5-14	51	34	1.50
15-24	38	42	0.90
25-34	81	68	1.19
35-44	153	88	1.74
45-54	179	85	2.11
55-64	280	178	1.57
65-74	440	389	1.13
75 and over	587	398	1.47
Total	162	95	1.71

In assessing the opportunities to reduce hospital utilization in Israel, international comparisons can complement the insights gleaned from health plan comparisons. For example, if Israel were characterized by lower utilization rates than those of most other industrialized countries, the opportunities for further reduction might be limited, and might even jeopardize quality of care.

Aggregate data on hospital admissions, hospital days, and lengths-of-stay in Israel are available from the Ministry of Health's annual report, *Hospitals and Day Care Units* (Ministry of Health, 1994). Information on the use of hospital services in other countries was derived from the OECD 1997 data base. In comparing Israeli data with data from other countries, care was taken to ensure maximum uniformity of definitions; however, it is not certain this was achieved in full. In particular, there may be discrepancies among countries in the definition of "acute care" and "general hospital", and in the extent to which one-day stays are considered "inpatient services". We examined both raw data and age-adjusted data – a crucial measure, since Israel's age mix is younger than that of many OECD countries (see Table 10).

Table 10: Use of Hospital Services in Israel and OECD Countries, by Age Group (in %)

Country	Age Group				
	0-4	5-54	55-64	65-74	75 and over
Australia	7.3	72.6	8.4	7.0	4.7
Austria	5.8	69.3	10.2	8.7	6.0
Belgium	5.9	67.6	10.7	9.6	6.2
Canada	6.9	72.7	8.5	7.0	4.9
Czech Republic	5.9	72.1	9.4	8.3	4.3
Finland	6.4	69.4	10.1	8.4	5.7
France	6.2	68.7	9.9	8.7	6.5
Germany	4.9	67.4	12.5	9.0	6.2
Greece	4.9	66.9	12.3	9.8	6.1
Hungary	5.7	69.4	10.8	9.3	4.8
Iceland	8.2	73.0	7.4	6.6	4.8
Ireland	6.9	73.7	8.1	6.6	4.7
Italy	4.7	67.2	12.0	10.0	6.1
Japan	4.9	68.8	12.2	8.7	5.4
Korea	7.9	78.6	7.6	4.0	1.9
Luxembourg	6.4	68.6	11.1	8.5	5.4
Mexico	12.3	78.9	4.6	2.7	1.5
Netherlands	6.3	71.0	9.5	7.6	5.6
New Zealand	8.2	72.4	8.1	6.7	4.6
Norway	6.9	68.7	8.5	8.5	7.4
Poland	6.5	73.1	9.5	7.3	3.6
Portugal	5.7	68.6	10.9	9.2	5.6
Spain	4.9	69.6	10.5	9.0	6.0
Sweden	6.7	66.4	9.7	9.1	8.1
Switzerland	5.9	69.9	10.0	7.8	6.4
Turkey	10.4	78.3	6.2	6.2	1.4
Untied Kingdom	6.4	67.7	10.1	8.8	7.0
United States	7.4	72.2	8.0	7.0	5.4
Israel	10.2	73.5	6.8	5.7	3.8

As can be seen in Figure E, the raw data reveal that the hospital admission rate in Israel was lower than that of approximately half of the OECD countries for which 1995 data were available. However, age adjustment produced quite a different picture: The hospital admission rate was more than marginally greater than that in Israel in only one country (Austria). In contrast, Israel's average lengths-of-stay were the lowest of all of the countries, both before and after age adjustment (see Figure F). This suggests that, as a group, Israeli health plans might find reducing hospital admission rates more effective in reducing hospital costs than they would further reductions in lengths-of-stay.

Unfortunately, the OECD data base contained no information on the extent to which the countries rely on hospitals for outpatient services. Comparative data on this issue were available for the United States only. (For an analysis and comparison of data from the US and Israel, see the second year report.)

5. The Use of Hospital Services: Trends Over Time and Differences among Health Plans

As noted, the Use of Health Services Survey covered data for 1993; consequently, it does not provide information for the period following implementation of the National Health Insurance Law.

However, as noted, every year the Ministry of Health publishes statistics on hospital admission, lengths-of-stay, hospital days, and hospital beds. Figure G summarizes key trends in hospital use since 1995. Table 11 demonstrates that 1995 was not a turning point for hospital statistics: Lengths-of-stay continued to fall, and admission rates continued to rise at rates similar to those that prevailed prior to national health insurance and the cap. Data for 1996 suggest that these trends remained unchanged during the second year of health reform.

Table 11: Trends in Hospital Statistics (per Thousand Population): Was 1995 a Turning Point?

	Before National Health Insurance		After National Health Insurance	Annual % Change	
	1989	1994	1996	1989-1994	1994-1996
	Discharges	156	174	179	2.2
Average lengths-of-stay	5.4	4.6	4.4	-3.0	-2.5
Days	852	822	793	-0.7	-1.8
Beds	2.64	2.39	2.30	-2.0	-1.9
Occupancy rate	87.7	93.5	93.8	1.3	0.2
Population	4,518	5,399	5,689	3.6	2.7

While the Ministry of Health data provide an excellent overview of hospital use, it is not broken down by health plan. In order to determine trends in a specific health plan, we used other sources; these are described in the sections that follow.

The analysis presented in this and the following sections is based on “activity data” for 1994-1996 provided by the central offices of each health plan. These data were denominated in NIS (in current prices), and represented the amount of money the health plan would have been required to pay hospitals had there not been a cap and a 4% volume discount. As such, they offer a good indication of the volume of services actually consumed. The figures reflect both inpatient and outpatient activity at general hospitals. To allow for comparisons over time, obstetric activity was excluded (this activity was the responsibility of the National Insurance Institute in 1994 and of the health plans in 1995-1996).

As can be seen in Figure H, in 1994 the government hospital system provided 42% of all hospital services consumed by the health plans, while the hospitals of Clalit Health Services provided 36% of all such services, other public hospitals provided 14% of such services, and private hospitals provided 8% of such services.

Of course, the health plans differed significantly in this regard (see Table 12). Reliance on government hospitals ranged from 33% in Meuhedet to 61% in Maccabi. As might have been expected, Clalit relied rather heavily on its own hospitals (43%), while the other health plans

channeled members to Clalit’s hospitals about 20% of the time. Meuhedet relied heavily on other public hospitals – unsurprising, given the high concentration of Meuhedet members in Jerusalem, home to several large public hospitals.

Table 12: Distribution of Hospital Activity among Health Plans, by Type of Hospital (in %)

Ownership	Health Plan			
	Clalit	Leumit	Maccabi	Meuhedet
Government	39	49	61	33
Clalit Health Services	43	15	13	16
Public	13	19	12	30
Private	6	17	15	22
Total	100	100	100	100

Table 13 and Figure I present data on the use of hospital services by health plans in 1994 from the hospitals’ perspective, and asks: What role do the health plans play in the activity of each type of hospital? For example, it is not surprising that Clalit consumed 77% of the services in the hospital system as a whole, since in 1994, 65% of all health plan members and 71% of all age-adjusted members⁸ were enrolled in Clalit.

Clalit accounts for a similar proportion of use of services in government hospitals. However, the picture is somewhat different in other types of hospital. As expected, Clalit’s hospitals sell an even greater proportion (90%) of their services to Clalit Health Services, while other public hospitals sell “only” 70% of their services to Clalit, and private hospitals sell 50% of their services to Clalit.

This pattern varies by health plan. For example, Maccabi accounted for 10% of total hospital activity, 15% of the activity in government hospitals, and 20% of the activity in private hospitals. It is striking that while Meuhedet accounted for only 5% of total hospital activity, it accounted for 11% of the activity in public hospitals, and 14% of the activity in private hospitals.

Table 13: Distribution of Hospital Activity among Types of Hospital, by Health Plan (in %)

Ownership	Health Plan				Total
	Clalit	Leumit	Maccabi	Meuhedet	
Government	72	8	15	4	100
Clalit Health Services	91	3	4	2	100
Public	71	10	9	11	100
Private	53	15	19	14	100
Total	77	7	10	5	100

⁸ The figure 71% was derived by employing the age weights that are used in the capitation formula instituted by the National Health Insurance Law (after adjustments to compensate for the return of responsibility for obstetric care to the health system). These weights are based on the use of total health care services – that is, hospital- and community-based – by age group. Had we weighted for use of hospital-based services only, we would have received a sharper increase in usage with age, resulting in a higher percentage of age-adjusted use in Clalit, which has a large number of elderly members.

The Cap and Growth in Health Plan Membership

Table 14 compares the level of the cap to the growth in the number of age-adjusted members in each health plan. As indicated, in 1995 the cap was not uniform across health plans: It was 7.3% for Maccabi and Meuhedet, 5.5% for Leumit, and 2% for Clalit. If one were unaware of the differences in the membership growth rates among the health plans, one might incorrectly conclude that cap policy favored Clalit. In fact, the opposite was the case. As can be seen in Table 14, age-adjusted membership grew much more rapidly in the smaller health plans than was reflected by their, whereas both parameters grew at roughly the same rate in Clalit.

One good way to understand the potential impact of this phenomenon is to consider the following: If each health plan's rate of use (per age-adjusted member) of government hospital services did not change between 1994 and 1995, and the per-diem rate also did not change, how would the cap have affected the amount of money each health plan would have had to pay government hospitals per capita? The answer to this question is exhibited in the right-most column of Table 14. Assuming the above scenario, the cap would have saved Maccabi and Meuhedet almost 10%, Leumit 7%, and Clalit less than 2% of expenditure. Of course, the extent to which the cap actually saved the health plans money was also affected by the extent to which the health plans "played the cap" – that is, the extent to which they moved activity from community settings to hospital settings, changed the degree to which they relied on government hospitals for hospital-based services, etc. – issues that are discussed below. Nevertheless, it should already be clear that, by its very structure, the cap would have had a differential effect on each health plan.

Officially, there was no aggregate cap for the health plans. However, it is possible to calculate a notional aggregate cap by weighting the cap for each health plan by the share of each in hospital activity. By so doing, one derives an aggregate cap of approximately 3% – well below the growth in the number of age-adjusted members (7.6%). In other words, even if the health plans had made no attempt to take advantage of the cap, the cap would have cost the hospitals 4% of their revenue.

Table 14: The Relationship between the Cap and Growth in Health Plan Membership

	1995*		
	Cap	Growth in Age-adjusted Membership	Increase in Cap, per Age-adjusted Membership
Clalit	2.0	3.6	-1.5
Leumit	5.5	13.6	-7.1
Maccabi	7.3	19.0	-9.9
Meuhedet	7.3	18.8	-9.7
Total	3.1	7.6	-4.2
		1996	
Clalit	2.0	1.8	0.2
Leumit	2.0	7.6	-5.2
Maccabi	2.0	10.2	-7.4
Meuhedet	2.0	10.4	-7.6
Total	2.0	4.3	-2.2

*In 1995, the cap applied to government hospitals only.

In 1996, a uniform cap of 2% was set for all of the health plans. Assuming there was no change in per capita utilization patterns in 1996 (similar to those noted above, but now applied to all public hospitals), the health plans as a group would have saved 2.5% in expenditure, since their age-adjusted membership grew by close to 4.5%. As in 1995, the membership of the smaller health plans grew much more rapidly than did the cap, so that if per capital usage remained stable, the cap would have given them a significant advantage over Clalit Health Services.

The simulations for 1995 and 1996 raise the following question: For the cap to be applied fairly to all health plans, should it be established as a uniform percentage **above** the rate of growth in age-adjusted membership?

The Consumption of Hospital Services by Health Plans Following the Implementation of National Health Insurance and the Cap

We analyzed changes over time in the activity data described above, in order to assess how the health plans' consumption of hospital services changed following the policy changes instituted in 1995. First we will focus on changes in total activity and its relation to the cap. We will then focus on changes in age-adjusted per capita activity levels.

Table 15 contains activity data in 1994 prices (in other words, we adjusted the figures we received from the health plans to eliminate the effect on changes in the per-diem rate). As can be seen in the Table, in 1995, activity in the total hospital system increased by approximately 4%, and activity in the government hospital system increased by 5% (see Table 16). The increase in activity at government hospitals was well above the cap for Leumit (13% versus 5.5%) and Meuhedet (15% versus 7.3%). As such, it is clear that the cap generated significant direct savings for those two health plans. However, the activities of Clalit and Maccabi at government hospitals were only slightly above the cap, and as such, their direct savings were marginal. However, it must be remembered that these health plans may have had additional (indirect) savings, due to the removal of the incentive for hospitals to increase activity levels.

Table 15: The Health Plans' Total Activity and Activity per Age-adjusted Membership at All Hospitals

	Total Activity in Millions of NIS (1994 Prices)			Percentage Change	
	1994	1995	1996	1994-1995	1995-1996
Clalit	3,809,652	3,895,030	3,962,655	2.2	1.7
Leumit	350,691	394,014	423,624	12.4	7.5
Maccabi	513,000	575,987	655,266	12.3	13.8
Meuhedet	243,767	267,564	312,453	9.8	16.8
Total	4,917,110	5,132,595		4.4	3.9
Activity per Age-adjusted Membership (in NIS)					
Clalit	1,016	1,004	1,003	-1.3	-0.1
Leumit	835	826	825	-1.1	-0.1
Maccabi	660	623	643	-5.7	3.3
Meuhedet	700	647	685	-7.6	5.8
Total	929	901	898	-3.0	-0.3
Index of Activity per Age-adjusted Member per Year					
Clalit	109	111	112		
Leumit	90	92	92		
Maccabi	71	69	72		
Meuhedet	75	72	76		
Total	100	100	100		

In 1996, activity increased again by about 4% in the system as a whole, and by 6% in the government hospital system. The cap yielded significant direct savings for three of the health plans. The activity of the smaller health plans increased at government hospitals – that of Meuhedet, whose activity increased by 31%, was particularly striking – but that of Clalit increased by less than 1%. At hospitals owned by Clalit Health Services and other public associations, only Meuhedet's activity exceeded the cap.

A different picture emerges when we look at activity per age-adjusted member. Here we find a 3% decrease in activity 1995, and almost no change in 1996 (see Table 15). Maccabi and Meuhedet posted significant declines in 1995, but these were largely offset in 1996.

When we compare across health plans, we find very large differences. For example, in 1996, activity ranged from NIS 643 (Maccabi) to NIS 1,003 (Clalit). This finding is consistent with findings from a 1993 health survey conducted jointly by the Central Bureau of Statistics and the Ministry of Health, and analyses of hospital expenditure based on the health plans' financial statements.⁹

⁹ See Rosen and Nevo, 1996.

Table 16: The Health Plans' Total Activity and Activity per Age-adjusted Membership at Government Hospitals

	Total Activity in Millions of NIS (1994 Prices)			Percentage Change	
	1994	1995	1996	1994-1995	1995-1996
Clalit	1,489,088	1,542,819	1,589,277	3.6	3.0
Leumit	171,734	194,139	211,826	13.0	9.1
Maccabi	312,000	331,654	367,975	6.3	11.0
Meuhedet	82,833	94,987	124,801	14.7	31.4
Total	2,055,655	2,163,599	2,284,016	5.3	5.6
Activity per Age-adjusted Membership (in NIS)					
Clalit	397	397	402	0.1	1.2
Leumit	409	407	412	-0.5	1.4
Maccabi	402	359	361	-10.7	0.7
Meuhedet	238	230	273	-3.4	19.0
Total	388	380	385	-2.2	1.2
Index of Activity per Age-adjusted Member per Year					
Clalit	102	105	105		
Leumit	105	107	107		
Maccabi	103	94	94		
Meuhedet	61	61	71		
Total	100	100	100		

Interestingly, Table 17 indicates that while age-adjusted per capita activity at hospitals owned by Clalit Health Services by the health plans as a group was very stable between 1994 and 1996, this stability was not maintained by individual health plans. For example, the age-adjusted per capita activity of Maccabi at Clalit-owned hospitals increased significantly between 1994 and 1996 – apparently because of the growth in its membership in the region served by Soroka Hospital. In contrast, while the age-adjusted per capita activity of Clalit Health Services at its own hospitals declined markedly, particularly in 1995.

Table 17: The Health Plans' Total Activity and Activity per Age-adjusted Membership at Hospitals Owned by Clalit Health Services

	Total Activity in Millions of NIS (1994 Prices)			Percentage Change	
	1994	1995	1996	1994-1995	1995-1996
Clalit	1,620,252	1,560,034	1,557,011	-3.7	-0.2
Leumit	51,935	58,343	65,167	12.3	11.7
Maccabi	65,000	84,803	101,796	30.5	20.0
Meuhedet	39,819	46,403	52,030	15.6	13.0
Total	2,055,655	2,163,599	2,284,016	5.3	5.6
Activity per Age-adjusted Membership (in NIS)					
Clalit	432	402	390	-7.0	-2.0
Leumit	124	122	127	-1.1	3.8
Maccabi	84	92	100	9.6	9.0
Meuhedet	114	111	114	-2.6	2.3
Total	388	380	385	-2.2	1.2
Index of Activity per Age-adjusted Member per Year					
Clalit	111	106	102		
Leumit	32	32	33		
Maccabi	22	24	26		
Meuhedet	29	29	30		
Total	100	100	100		

Clalit's shifting its activity away from its own hospitals was apparently *not* primarily due to an attempt to take advantage of the cap at government hospitals. Only some of this activity was shifted to government hospitals, while the remainder was shifted to public and private hospitals. Moreover, Clalit did not exceed the cap at government hospitals in 1995. Thus, at present, we do not have a reasonable explanation for Clalit's changing its distribution of hospital activity in 1995.

Table 18 presents data on the share of government hospitals in the hospital-based activity of each of the health plans. Clalit and Leumit experienced minor increases in the government hospitals' share of their hospital activity between 1994 and 1996. Only Meuhedet experienced a major increase in the government hospitals' share of their hospital activity – from 33% in 1994, to 38% in 1996. Conversely, Maccabi experienced a major decline in the government hospitals' share of its hospital activity, from 61% in 1994 to 56% in 1996.

Table 18: The Government Hospital System's Share of Total Hospital Activity, by Health Plan (in %)

	1994	1995	1996
Clalit	39	40	30
Leumit	49	49	50
Maccabi	61	58	56
Meuhedet	33	34	38
Total	42	42	43

As can be seen in Table 19, the flip side of the decline in the government hospitals' share of Maccabi's hospital activity was an increase in the private hospitals' share of its hospital activity – apparently due to Maccabi's acquisition of the private Assuta Hospital in 1994 – and in Clalit-owned hospitals' share of its hospital activity – apparently, as noted, due to dramatic growth in Maccabi's membership in the region served by Clalit-owned Soroka Hospital.

Table 19: The Distribution of Maccabi Healthcare Services' Hospital Activity, by Type of Hospital

Hospital Ownership	Percentage Expenditure		
	1994	1995	1996
Government	61	58	56
Clalit Health Services	13	15	16
Public	12	12	12
Private	15	16	17
Total	100	100	100

These findings provide an important perspective on the oft-repeated comment that “Meuhedet egregiously exceeded the cap”. Our data indicate that Meuhedet's hospital activity per age-adjusted member actually declined. Although its total hospital activity in 1995 increased more than the cap (9.8% versus 7.3%), this was because the cap did not fully reflect the rapid increase in Meuhedet's membership (19%). In fact, Meuhedet's age-adjusted per capita activity actually declined in 1995. In 1996, however, Meuhedet's age-adjusted per capita hospital activity increased by almost 6%, and its total hospital activity increased by almost 17%.

Moreover, many of those who cite cap overruns by Meuhedet are affiliated with the government hospital system, in which Meuhedet's total activity increased by 31% and per capita activity increased by 19% in 1996. As noted above, this increase was due in part to the shifting of activity away from other hospital systems – particularly the private hospital system – and to the government hospital system. This shift may have been the result of a deliberate policy to take advantage of the cap. However, an alternative explanation was offered by one of Meuhedet's senior managers: During this period, Meuhedet significantly expanded its program of having hospital-based physicians spend “sessions” at its community clinics. Expansion was particularly rapid in the Tel Aviv and Central region, where the majority of hospital-based physicians are affiliated with government hospitals. As a result, patients requiring hospitalization were increasingly referred to government hospitals.

Key Findings from the National Hospitalization Data Base

A similar picture emerges from the National Hospitalization Data Base (NHDB). The NHDB, developed and maintained by the Ministry of Health's Information Division, contains demographic data on patients and clinical information on hospital admissions. The analysis presented here for 1994-1996 is based on data from 18 hospitals; together, these data account for 87% of hospital admissions. All government and Clalit-owned hospitals are included, as are most of the large public hospitals. However, data for these years were unavailable for the private hospitals and some of the smaller public hospitals.

As can be seen in Table 20, the age-adjusted rate of hospital days per member for the health plans as a group declined by 3%, although the age-adjusted admission rate rose slightly. The decline in hospital days per member was therefore the result of a decline in the average length of stay. Table 20 also reveals some variation among health plans. Hospital days per member declined most rapidly in Maccabi, due to the relatively rapid decline in length of stay among members of that health plan.

Table 20: Percentage Change in Raw and Age-adjusted Rates of Use of Hospital Services between 1994 and 1996

	Percentage Change, 1994-1996				Total
	Clalit	Leumit	Maccabi	Meuhedet	
Raw Rates					
Hospital days	-1.8	-0.1	-1.0	2.2	-4.2
Admissions	2.2	3.8	3.1	3.3	0.0
Length of stay	-3.8	-4.3	-3.8	-1.3	-4.1
Age-adjusted Rates					
Hospital days	-2.8	-3.4	-7.5	-2.8	-4.5
Admissions	1.0	2.2	-1.0	0.0	-0.8
Length of stay	-3.8	-4.9	-4.2	-1.1	-3.5

Source: National Hospitalization Data Base, Information Division, Ministry of Health

Note: These data reflect activity at 18 hospitals, which accounts for approximately 87% of the inpatient activity in Israel. The NHDB did not contain data on private hospitals, church-affiliated hospitals, and several other non-profit hospitals; this omission introduces a bias of unknown proportion into the comparison among health plans.

The NHDB can be used not only to examine trends over time, but also to compare use rates among health plans at any given point in time. However, it must be remembered that data were not available for private hospitals, which tend to be used more intensively by the smaller health plans than by Clalit.

As can be seen in Table 21, the age-adjusted rate of hospital days per member was significantly higher in Clalit than in the other health plans. Average length of stay was very similar among the health plans; Clalit's high rate of days per member was due to its high rate of admissions per member.

Table 21: Raw and Age-adjusted Rates of Use of Hospital Services in 1995

	Number of Days				Total
	Clalit	Leumit	Maccabi	Meuhedet	
Raw Rates					
Hospital days	723	402	308	284	575
Admissions	142	82	66	60	115
Length of stay	5.1	4.9	4.7	4.7	5.0
Age-adjusted Rates					
Hospital days	640	459	404	403	573
Admissions	130	90	79	76	114
Length of stay	4.1	4.3	4.3	4.3	4.2

Source: National Hospitalization Data Base, Information Division, Ministry of Health

Note: These data reflect activity at 18 hospitals, which accounts for approximately 87% of the inpatient activity in Israel. The NHDB did not contain data on private hospitals, church-affiliated hospitals, and several other non-profit hospitals; this omission introduces a bias of unknown proportion into the comparison among health plans.

The results concerning admissions and hospital days should be interpreted with caution due to the absence of data from private hospitals and church-affiliated hospitals. Recall that reliance on private hospitals varies dramatically across health plans, accounting for 23% of Meuhedet's hospital activity, but only 6% of Clalit's hospital activity (see Table 13). Adjusting NHDB data for the absence of private hospitals reduces, but does not eliminate, the difference in admission rates between Clalit and the other health plans.

This limitation is less crucial regarding the findings on length of stay, as it is valid to compare the lengths of stay of members of different health plans at a given hospital or set of hospitals. The finding that length of stay is essentially the same among the members of all of the health plans, despite differences in the intensity of their hospital use, is striking, and needs to be explored further.

6. Trends Over Time in the Health Plans' Patterns of Expenditure for Hospital Services

Utilization is only one component of the expenditure equation. Ultimately, what concerns the health plans in their effort to remain solvent is not utilization, but expenditure. As expenditure is influenced not only by utilization, but also by the rate of payment for a given unit of services, expenditure may rise even if utilization is declining, and vice versa. As noted, prior to 1995, control of payment rates was not a major tool in the containment of health plan costs. However, there was reason to believe that this might change *a priori* with increased cost pressure on the health plans and greater hospital autonomy (which would have made it easier for individual hospitals to agree to discounts or risk-sharing arrangements with a particular health plan).

Theoretically, the health plans could influence payment rates in a number of ways. They could negotiate volume discounts or a global payment level – either for the total care a hospital provides them, or for specific services. Alternatively, they could influence government policy concerning the

per-diem rate or the cap. It was therefore important to monitor hospital expenditure levels (and not just utilization rates) over time, and make the appropriate comparisons across health plans.

This section summarizes those findings from the JDC-Brookdale Institute's continuous analysis of health plan financial statements that are relevant to an understanding of the changing hospital-health plan relationship. It also relates expenditure data from these financial statements to the findings on changes in the health plans' hospital activity levels.

In analyzing health plan financial statements, Institute staff work closely with health plan managers to ensure that the data are comparable among health plans and over time. For example, expenses for maternity admissions are excluded from the analysis, because while the health plans were briefly responsible for such expenses (in 1995 and 1996), the National Insurance Institute has been responsible for the most part – prior to 1994 and since 1997.¹⁰

The study divides health plan expenditures into four categories: hospital services (including inpatient and hospital outpatient activity); community-based services; pharmaceuticals (including the cost of pharmacists employed by the health plans); and other expenses (mostly administration and marketing). Table 22 presents expenditures on hospital services, while Table 23 presents total operating expenditures. Note that all of the figures are in December 1996 prices, and that the Consumer Price Index (and *not* the hospital per-diem rate!) has been used to convert nominal expenditure data into December 1996 expenses.

¹⁰ For a full description of the study methodology and limitations, and a complete set of findings for 1994-1995, see Rosen, B.; Ivancovsky, M.; and Nevo, Y. 1998. *Changes in the Sick Fund Economy: Sick Fund Revenues and Expenditures Before and After the Introduction of National Health Insurance*. RR-317-98. JDC-Brookdale Institute, Jerusalem. (Hebrew)

Table 22: Expenditures for Hospital Services, by Health Plan

	Year			Percentage Change	
	1994	1995	1996	1994-1995	1995-1996
Expenditures in Millions of NIS*					
Clalit	5,202	5,742	5,923	10.4	3.1
Leumit	512	587	570	14.5	-2.9
Maccabi	715	842	892	17.7	5.9
Meuhedet	336	389	418	15.7	7.6
Total	6,748	7,560	7,803	12.0	3.2
Expenditures per Age-adjusted Member (in NIS) *					
Clalit	1,388	1,479	1,499	6.6	1.3
Leumit	1,220	1,230	1,109	0.8	-9.8
Maccabi	921	911	879	-1.1	-3.8
Meuhedet	966	941	917	-2.6	-2.5
Total	1,275	1,327	1,314	4.1	-1.0
Age-adjusted Members					
Clalit	3,748,252	3,881,332	3,951,015	3.6	1.8
Leumit	419,945	477,230	513,669	13.6	7.6
Maccabi	776,860	924,605	1,018,652	19.0	10.2
Meuhedet	347,995	413,297	456,328	18.8	10.4
Total	5,293,052	5,696,464	5,939,665	7.6	4.3

*In December 1996 prices.

Changes between 1994 and 1995

As can be seen in Table 22, total health plan spending on hospital services increased from NIS 6.7 billion in 1994, to NIS 7.6 billion in 1995 – an increase of 12% in real (Consumer Price Index) terms. Also during that period, total health plan age-adjusted membership grew by 7.6% – from 5.3 million to 5.7 million. Accordingly, the expenditure on hospital services per age-adjusted member grew by 4.1%, from NIS 1,275 to NIS 1,327.

The change in the age-adjusted per capita expenditure was the result of several factors, including the extent to which the per-diem rate increased faster than the Consumer Price Index; the introduction of discounts from the official per-diem rate; changes in the age-adjusted per capita use of hospital services; and the cap.

In 1995, these factors had the following effects:

- The per-diem rate increased by 20% in nominal terms, which amounted to approximately 10% above the Consumer Price Index.
- The smaller health plans were granted a 4% volume discount at government hospitals – a discount that had previously been granted to Clalit only.
- As noted above, age-adjusted per capita use of hospital services declined among all of the health plans, but particularly in Maccabi and Meuhedet.
- The cap applied only in government hospitals, where it generated significant savings for Leumit and even more significant ones for Meuhedet.

Table 23: Total Operating Expenditures, by Health Plan**

	Year			Percentage Change	
	1994	1995	1996	1994-1995	1995-1996
Expenditures in Millions of NIS*					
Clalit	9,494	9,841	10,502	3.7	6.7
Leumit	1,230	1,325	1,376	7.7	3.8
Maccabi	2,307	2,501	2,773	8.4	10.9
Meuhedet	983	1,103	1,228	12.3	11.3
Total	14,019	14,771	15,879	5.3	7.5
Expenditures per Age-adjusted Member (in NIS) *					
Clalit	2,533	2,536	2,658	0.1	4.8
Leumit	2,930	2,777	2,678	-5.2	-3.6
Maccabi	2,970	2,705	2,722	-8.9	0.6
Meuhedet	2,824	2,669	2,691	-5.5	0.8
Total	2,649	2,593	2,673	-2.1	3.1
Age-adjusted Members					
Clalit	3,748,252	3,881,332	3,951,015	3.6	1.8
Leumit	419,945	477,230	513,669	13.6	7.6
Maccabi	776,860	924,605	1,018,652	19.0	10.2
Meuhedet	347,995	413,297	456,328	18.8	10.4
Total	5,293,052	5,696,464	5,939,665	7.6	4.3

*In December 1996 prices.

**Figures do not include one-time payments for Clalit's early retirement program in 1996, as this would have changed Clalit's age-adjusted per capita expenditure for 1995-1996 to 8%, and of the health plan sector as a whole to 3%.

We will now assess how these factors affected each health plan.

Clalit: The 10% real increase in the per-diem rate was not offset by any new volume discount (as noted, Clalit had enjoyed a volume discount prior to any of the other health plans). However, age-adjusted per capita activity declined by just over 1%, and the cap generated savings of almost 2% in the government hospital system; consequently, overall age-adjusted per capita expenditure increased by approximately 7%.

To put this change in perspective, it is worth considering what happened to age-adjusted per capita spending in Clalit for other types of expenditures, and overall. The 7% increase in age-adjusted per capita spending on hospital services was roughly matched by a 6% increase in spending on pharmaceuticals. However, age-adjusted per capita spending on community-based services and other expenses dropped by 12% and 15%, respectively. These changes offset one another, such that total age-adjusted per capita spending remained unchanged (see Table 20).

Leumit: The 10% increase in the per-diem rate was partially offset by the introduction of the 4% volume discount. Age-adjusted per capita activity declined by 1%. In addition, Leumit had significant savings thanks to the cap, as its activity at government hospitals increased by 13% – well

above its 5.5% cap. As a result of these and perhaps additional factors, Leumit's expenditure per age-adjusted member increased by only 1%.

The health plan's age-adjusted per capita spending on pharmaceuticals and other expenses also remained unchanged. However, its age-adjusted per capita spending on community-based services dropped by 15%, such that its total age-adjusted per capita spending dropped by 5%.

Maccabi: The 10% increase in the per-diem rate was partially offset by the introduction of the 4% volume discount. Age-adjusted per capita activity declined by 6%. There were no savings from the cap, as activity at government hospitals increased by 6%, which was less than Maccabi's 7.3% cap. Some potential savings from the cap were lost because of the shift of activity from government hospitals to private and Clalit-owned hospitals (which were not included in the cap at that time). Hospital expenditure per age-adjusted member decreased by 1%.

The 1% drop in age-adjusted per capita spending for hospital services was overshadowed by major declines in other areas: a 13% decline in spending on community services, a 12% decline in spending on pharmaceuticals, and an 11% decline in spending on other expenses. Maccabi's total age-adjusted per capita spending dropped by 9%.

Meuhedet: The 10% increase in the per-diem rate was partially offset by the introduction of the 4% volume discount. Age-adjusted per capita activity declined by 7.6%. In addition, Meuhedet had savings from the cap, as its activity at government hospitals increased by almost 15% – well above Leumit's 7.3% cap. However, we must bear in mind that government hospitals accounted for only a small proportion of Meuhedet's hospital activity and expenditure, such that the savings in NIS per member were less than might have been expected. As a result of these and other factors, Meuhedet's expenditure on hospital services per age-adjusted member decreased by 3%.

This 3% decline was reinforced by declines in all other types of spending: a 6% decline in spending on community services, an 18% decline in spending on pharmaceuticals, and a 7% decline in spending on other items. Meuhedet's total age-adjusted per capita spending declined by 6%.

Changes between 1995 and 1996

In 1996 the following changes took place:

- a. The per-diem rate in almost all public hospitals increased by 11.8% in nominal terms, or approximately 0.5% above the Consumer Price Index. At Sha'are Zedek Hospital and the private hospitals, the per-diem rate increased by only 8.8% because they did not participate in the cap.
- b. Volume discounts were continued as in the previous year, and as such, played no role in explaining changes in expenditure between 1995 and 1996.
- c. As noted above, age-adjusted per capita spending on hospital services increased somewhat in Maccabi and Meuhedet, and remained stable in Clalit and Leumit.
- d. The cap was applied to all hospitals with the exception of Sha'are Zedek Hospital and the private hospitals. Where applied, the cap was a uniform 2% for all of the health plans. As such, it generated major savings for Maccabi and Meuhedet (whose total hospital activity increased by 14% and 17%, respectively), and to a lesser extent for Leumit (whose total

hospital activity increased by 7%). In addition, some health plans generated savings by concentrating their activity in certain types of hospital.

We will now assess how these factors affected each health plan.

Clalit: Overall, the per-diem rate remained essentially stable in real (Consumer Price Index) terms. Age-adjusted per capita activity also remained stable, and total activity increased by less than 2%. As a consequence, this health plan saw almost no savings from the cap, though it experienced a small savings at government hospitals, where its activity increased by 2.7%. Expenditure per age-adjusted member increased by about 1%.

The 1% age-adjusted per capita increase in expenditure for hospital services was overshadowed by major increases in all other areas: a 6% increase in expenditure on community services, a 14% increase in expenditure on pharmaceuticals, and an 18% increase in expenditure on other expenses. Total age-adjusted per capita spending increased by 5%.

(Note that these figures are exclusive of special, one-time payments made in 1996 in connection with Clalit's early retirement program, as mandated by a financial rehabilitation agreement that the health plan signed with the Ministry of Finance. If we include these payments, we will find that age-adjusted per capita spending on community-based services increased by 19%, and total age-adjusted per capita spending by 8%.)

Leumit: Overall, the per-diem rate remained essentially stable in real (Consumer Price Index) terms. Age-adjusted per capita activity declined by 1%. More importantly, Leumit saw significant savings from the cap, as its total activity increased by almost 7% – well above the 2% cap. Leumit realized additional savings by concentrating its hospital activity at certain types of hospital (for example, its activity at Clalit-owned hospitals increased by approximately 11%). It may also have achieved savings by concentrating the care of its Jerusalem members in hospitals that would allow it to take advantage of the cap. As a result of all of these factors, expenditure per age-adjusted member decreased by almost 10%.

The major decrease in age-adjusted per capita hospital spending was almost matched by the decline in age-adjusted per capita spending on other items: 7%. These were offset somewhat by a 4% increase expenditure on community services and a 1% increase in expenditure on pharmaceuticals. Total age-adjusted per capita expenditure dropped by 4%.

Maccabi: Overall, the per-diem rate remained essentially stable in real (Consumer Price Index) terms. Although age-adjusted per capita activity increased by 3%, thanks to the cap, this did not translate into an increase in expenditures. Indeed, Maccabi experienced significant savings from the cap, as its total activity increased by 13%, by 19% at Clalit-owned hospitals, and by 10% at government hospitals. However, some potential savings were lost as a result of the continued shift of activity to private hospitals. Expenditure per age-adjusted member decreased by 4%.

The 4% age-adjusted per capita decrease in spending for hospital services, and the 1% drop in spending for community services, were offset by major increases in expenditure on pharmaceuticals

(8%) and other items (6%). Maccabi's total age-adjusted per capita spending remained essentially unchanged.

Meuhedet: Overall, the per-diem rate remained essentially stable in real (Consumer Price Index) terms. The data from Meuhedet's financial statements reveal a decline of 3% in expenditure on hospital services per age-adjusted member, despite an increase in overall age-adjusted per capita activity of 6%. Meuhedet's membership grew by 10%, such that its total activity increased by only 17% – well above the level of the cap. This health plan realized additional savings from the cap by concentrating its activity at government hospitals: 38% of all of the plan's hospital activity took place in government hospitals in 1996, compared to 34% of its activity in 1995 and 33% of its activity in 1994. In other words, Meuhedet's activity at government hospitals increased by approximately 31% – well above the 2% cap. However, it should be kept in mind that government hospitals accounted for only a small proportion of Meuhedet's activity and expenditure, such that the plan's savings in NIS per member was less than might have been thought. The plan may have realized additional savings by concentrating the care of its Jerusalem members in hospitals that allowed it to take advantage of the cap. Further consultation with health plan representatives is required to analyze these changes and the relationships among them.

The 3% age-adjusted per capita decrease in spending for hospital services was offset by a major increase in spending for pharmaceuticals (7%) and slight increases in spending for community services (1%) and other items (3%). Total age-adjusted per capita spending increased by 1%.

Summary

In summary, it is clear that the cap had a significant impact on health plan payments to hospitals. It appears likely (though this has not been conclusively demonstrated) that the introduction of national health insurance had an impact, as well. At the same time, it is obvious that health plan expenditure on hospital services was influenced by additional factors, such as changes in the per diem rate, the introduction of volume discounts, and action taken by the health plans and hospitals (only some of which may be attributed to the cap and/or to national health insurance).

7. Identification and Documentation of Health Plan Measures to Control Hospital Utilization and Expenditure, and the Reasons Behind Them

Preliminary analysis of the *1993 Use of Health Services Survey* reveals significant differences in the hospital use rates of health plans. These are probably due, at least in part, to differences in how each health plan manages care. In an effort to understand the differences among health plans prior to national health insurance, as well as trends over time, extensive interviews were conducted with key national health plan managers and hospital directors, who were asked to identify measures taken by the health plans and the hospitals that might account for utilization and expenditure patterns; they were also asked their perception of the impact of these measures. Lastly, they were asked to reconstruct the reasoning behind their organization's key decisions.

There are many, different ways for health plans and other insurers to control hospital utilization (Institute of Medicine, 1989; Gold et al., 1995). However, to date, little had been known about the

extent to which these methods were being used by Israeli health plans. This study was the first to provide information on the prevalence of use of certain methods, and how that prevalence has changed over time.

Two sets of interviews were conducted, the first in 1997, and the second in 1999. This report presents findings from the first set of interviews, and sheds light on health plan and hospital actions during imposition of the revenue cap on government hospitals, and during modified implementation of the cap.

Of central concern was whether, during imposition of the hospital revenue cap, the health plans maximized their short-term gains, or whether they began to strategically plan and implement mechanisms that would enable them to benefit despite modified capping. For example, if a health plan realized that it was “hitting the ceiling” (the revenue cap) at a certain hospital, would it transfer activity from community settings to that hospital, where, in effect, marginal costs had been eliminated? Similarly, would Clalit Health Services begin taking activity away from its own hospitals and transferring it to those government hospitals where it was just grazing the cap? We hoped interviews with health plan managers would answer some of these questions.

Also of concern was whether hospitals were adopting a tactical or strategic approach to the cap. For example, a hospital that was scraping its revenue cap might want to limit the services it provided in order to maximize its short-term gain. Conversely, however, a hospital might prefer to preserve volume-enhancing norms in preparation for modified capping or even the end of capping, in order to maximize its long-term gains. Of course, we would expect different behavior from government hospitals, where capping was initially instituted, than from those voluntary and proprietary hospitals where it was not initially instituted. (For a summary of the incentives to health plans and hospitals introduced by national health insurance under two different circumstances – with hospital revenue caps, and without them – see Appendix III.)

The following were among the issues raised in the questionnaire administered to health plan managers:

- ◆ The health plan’s general strategy regarding the use of community- versus hospital-based services.
- ◆ The measures taken to constrain hospital use and expenditure.
- ◆ The periods during which given measures were initiated or intensified.
- ◆ Difficulties that arose in implementing these measures.
- ◆ The perceived impact of the measures employed.
- ◆ The role of national health insurance in promoting efforts to control hospital costs.

The questionnaire for hospital directors was administered primarily by phone, although some of the interviews were conducted face to face. This questionnaire covered the following issues:

- ◆ Recent hospital efforts to increase revenue.
- ◆ Recent efforts by specific health plans to constrain their utilization and/or expenditure at the hospital.
- ◆ The perceived impact of both the hospitals’ and the health plans’ efforts.

It should be noted that the hospitals were guaranteed anonymity.

Findings from the In-depth Interviews

The findings are arranged by source of information: the health plans, government hospitals, Clalit-owned hospitals, and public hospitals.

The Perspective of the Health Plans

There was a surprising degree of uniformity in the findings from the different health plans. Senior managers in all of the health plans reported investing significant managerial time and energy in understanding the hospital revenue cap, and deliberating over their health plan's organizational response. Interestingly, it appears that each of the health plans arrived at the same conclusion: The cap in its initial form would prove to be temporary and, as such, the health plans should not reverse their longer-term strategies for reducing hospital utilization. This meant continuing two major efforts: developing community-based specialty and diagnostic services, and monitoring the use of hospital services ("hospital admissions control").

However, at least some of the health plans made marginal changes. For example, we received reports that some of the health plans slowed the development of community-based specialty services (though it is not clear whether this was because of the cap, or because of financial pressure induced by national health insurance and capitation). We also learned that some health plans agreed to forego in-depth investigation of every questionable hospital charge, instead reaching agreement with the hospital that a certain percentage of questionable charges would simply be invalidated. Apparently, both the hospitals and the health plans felt that, given a 100% cap, it made little sense to invest time and energy in investigating particular cases.

Several health plans also reported that hospital directors offered them discounted package deals of one sort or another for services outside the purview of the cap. However, all of them reported that, with few exceptions, they rejected these offers for several reasons: the sense that many of the services in question should have been included in the cap, and insufficient funds for purchasing these services due to capitation.

Most health plan managers stated that they did not deliberately or consciously concentrate activity in particular hospitals in order to gain from the cap. Conversely, however, managers of Meuhedet reported deliberately concentrating activity in government hospitals to reap cap-related gains.

Several health plan representatives reported that, at the end of the year, some of the hospitals in which their health plan had already reached the cap made it difficult to obtain services. However, none of the health plan representatives could provide data to support this claim.

Most health plan representatives indicated feeling that, over time, the hospitals were becoming more responsible and responsive. They cited the hospitals' willingness to work effectively with health plan utilization review personnel, and to develop services in areas where there was real need. At the same time, they sensed that a few hospitals – typically, those in peripheral regions, which had some degree of (local) monopoly – were less cooperative and more aggressive about increasing hospital volume unnecessarily.

One of the most interesting findings from the interviews of health plan managers was that there were at least two schools of thought within Clalit Health Services regarding the potential for reducing Clalit's use of its own hospitals, and regarding the desirability of doing so. Those who believed the health plan could save money by doing so seemed to have the upper hand. For example, even though in the past, Clalit Health Services had introduced utilization review measures only *vis a vis* other hospitals, by 1998, its managers realized that it would be wise to introduce similar measures with regard to its own hospitals. Moreover, Clalit was allowing its regional divisions increasing flexibility in deciding how much service to purchase from Clalit-owned hospitals, and increasing incentives to the regions to constrain these expenditures.

The Perspective of Government Hospitals

We found striking variance among directors of government hospitals with regard to the following key issues: the cordiality of the relationship with the health plans; the extent to which the health plans sought to increase volume after introduction of the cap; and their perception of which health plans were most active in developing community-based services and hospital utilization review. Apparently, there is a great deal variation among regions. This is probably due, in part, to differences among the health plans in their market share in each region, the number of competing hospitals in a region, and the personalities of key hospital and health plan managers in a given region.

Nonetheless, we also found substantial agreement on several key points. For example, all of the hospital directors indicated that the trend toward more stringent utilization review and the development of community-based services had begun prior to the introduction of national health insurance and the cap, respectively, and reported seeing a great deal of continuity in these trends. Many felt that they were a result in part of the Ministry of Health's having over-priced hospital outpatient services.

Many hospital directors reported that their initial concern that the health plans would take advantage of the cap by flooding them with patients for whom they would not be reimbursed had been disproved. However, another concern materialized: that continued development of community-based specialty services would significantly damage both hospital revenues and medical education. Similarly, government hospital directors corroborated the reports of health plan managers that the hospitals' proposed discounted package deals had been rejected.

The sense among hospital directors was widespread that the 50% cap introduced in 1997 constituted a reasonable, "golden mean". However, many hospital directors complained about the fee schedule for outpatient services (both that it was too high overall, and that the rates of different procedures did not reflect their relative costs). Many hospital directors asserted that the fee schedule was pushing the health plans to develop community-based alternatives, resulting in unnecessary and expensive duplication.

The Perspective of Hospitals Owned by Clalit Health Services

An important distinction must be made between Clalit-owned hospitals that serve Clalit's members almost exclusively (i.e., Clalit's members account for 90% or more of their volume), and those that serve a diverse set of patients and have diverse sources of revenue.

To begin with, directors of Clalit-owned hospitals that primarily serve Clalit members speak a very different language than that spoken by the directors of government hospitals. Their approach is less that of a business entity, and more that of a budgeted administrative entity. For example, it appears that the central office of Clalit Health Services set both revenue and expenditure targets for these hospitals, but did not clarify the link between them. Abiding by expenditure targets appears to have been more important than abiding by revenue targets: A 5% overrun of the expenditure target was likely to incur serious sanctions, even if revenue exceeded its target by 10%.

Directors of several of these hospitals noted that the share of revenue from other health plans declined markedly from an already low level. They also noted that while the smaller health plans had intensified their utilization review monitoring and development of community-based services, Clalit's regional divisions had been less active in these areas.

Discussions with the directors of Clalit-owned hospitals that have a more diverse client base were more similar to discussions with the directors of government hospitals. At least with regard to revenue sources other than Clalit Health Services, they projected the sense that maximizing revenue was a strategic objective. Directors of these hospitals cited the following points:

- ◆ Hospitals did not want to sell to health plans that were exceeding the cap. It appeared that at least some hospitals had slowed their activity with these health plans, as a result.
- ◆ Hospitals wanted to conclude the year close to the cap level; activity below the cap was perceived as something to be avoided, lest it influence the level of the cap the following year.
- ◆ Several of Clalit's regional divisions utilized services at levels below those implied by the cap, primarily because of constraints imposed by the region's expenditure budget.
- ◆ Clalit's regional divisions were perceived as engaging in minimal utilization review, while some of the smaller health plans were perceived as intensifying utilization review.

The Perspective of Public Hospitals, Particularly Those in Jerusalem

Directors of Jerusalem's hospitals cited many of the same issues as did their colleagues in other parts of the country. They also pointed out several characteristic unique to Jerusalem:

- ◆ Jerusalem hospitals were hit particularly hard by the cap because of their relatively high dependence on the Meuhedet Sick Fund – one of the health plans that was able to realize the greatest direct savings from the cap due to rapid membership growth.
- ◆ Jerusalem has a large population of Arabs, a relatively large proportion of whom did not have health insurance prior to the introduction of the National Health Insurance Law in 1995. As a result, their rate of use of hospital services was relatively low prior to national health insurance. Moreover, for cultural and other reasons, their rate of use of hospital services did not immediately rise to that of the Jewish population following the introduction of national health insurance, and the process of narrowing this gap is likely to take several years. Thus, while the use rates of Jerusalem's Arabs were probably higher in 1996 than in 1995 (and for reasons have little to do with hospital behavior), the hospitals were not yet being fully compensated for the increase because of the cap.
- ◆ Most hospitals in the country are owned by one of several large organization (e.g., Clalit Health Services, the Ministry of Health). In contrast, each public hospital in Jerusalem is

owned by a different organization (e.g., Hadassah Medical Organization). This means, first of all, that there is more pressure on the hospitals to behave like a business. It also means that health plans had more opportunity and incentive to concentrate their activity in one or another Jerusalem hospital, so as to achieve short-term, cap-related savings. Several of the directors of hospitals in Jerusalem indeed reported that some of the health plans engaged in just this type of activity.

Summary of the In-depth Interviews

The majority of hospital directors and health plan directors believed the cap was likely to be temporary. Directors of the smaller health plans only marginally departed from their long-term strategy of reducing hospital utilization – primarily by continuing to develop community-based services and intensifying hospital utilization review. Clalit Health Services continued to struggle with whether and under what conditions to reduce its use of hospital services, particularly at its own hospitals. Hospital directors responded to the cap differently. Neither they nor the health plan directors reported on specially-negotiated volume discount deals between the hospitals and health plans. Several unique factors of the hospital system in Jerusalem were noted as relevant to health plan and hospital behavior under the cap.

8. Summary and Implications for the Second Phase of the Project

The key finding of this study is that between 1994 and 1996, the age-adjusted per capita activity rates of all four health plans remained stable or declined, even though the hospital revenue cap eliminated, or at least reduced, the short-term financial incentive for health plans to reduce age-adjusted per capita activity. The following factors influenced this situation:

- ◆ The health plans adhered to their long-term strategy of reducing their reliance on hospitals.
- ◆ Many hospitals attempted to restrain the growth of activity beyond the cap.
- ◆ There were capacity constraints and high occupancy rates in key inpatient departments.
- ◆ The 4% of the population who “suddenly” became insured under national health insurance tended to use hospital services at below-average rates.

Interestingly, the greatest decline in age-adjusted per capita activity was found in Maccabi, which already had a low hospital use rate. It is possible that the introduction of the capitation formula under national health insurance gave Maccabi a negative financial incentive – in the form of decreased revenue – to reduce costs.

Conversely, the smallest decline in age-adjusted per capita activity was noted in Clalit, which already had the highest hospital use rate. It is likely that Clalit’s owning hospitals contributed to its ambivalence regarding utilization review and the development of community-based alternatives to hospital care. Furthermore, unlike Maccabi, Clalit experienced an increase in operating revenues immediately following the introduction of capitation, which may have “distracted” it from reducing hospital use. At present, however, growing financial pressure on Clalit seems to be increasing its determination to reduce hospital use and expenditures.

Clearly, the cap did its part in reducing overall health plan expenditure on hospitalization. Exclusive of any indirect savings, the health plans enjoyed significant direct savings because their hospital activity grew more quickly than did the cap. To a large extent, these “cap over-runs” were due to growth in health plan membership, rather than to inappropriate behavior by either the hospitals or the health plans (although one of the health plans may have deliberately concentrated its activity in government hospitals). In determining the extent to which each health plan realized savings from the cap, policymakers should note the key role played by membership growth; in the future, it may be appropriate to set the cap relative to utilization per age-adjusted per capita membership, rather than relative to total utilization.

For the health plans as a group and the health system as a whole, it is likely to become increasingly difficult to reduce lengths of stay as a means of reducing hospital activity overall. It will therefore be important to monitor whether the health plans begin trying to avoid *necessary* hospital admissions – an effort that will require them to replace their administrative approach with a medical-administrative approach.

The first part of this project provided more information on the impact of the reform on health plan expenditure than on hospital revenue. During the second year of the project, we will attempt to complete the picture by providing information on changes in hospital activity levels, hospital revenue and expenditure, and operating deficits.

Recent trends in hospital use in Israel parallel similar trends in other countries. During the second year of the project, we will conduct an in-depth of comparison of how American and Israeli managed care organizations have sought to control hospital use and expenditure, given a variety of economic incentives and fiscal constraints.

Another key objective of the second year of this study will be to isolate the contribution of each of the factors noted above, *inter alia*, by looking at differences in age-adjusted per capita activity growth in different regions and hospitals, and among people of different ages and ethnic backgrounds, as well as at the growth in different types of hospital activity (e.g., inpatient versus outpatient, regular versus research).

In general, the findings of the project to date indicate that Israel’s health plans have the will and the ability to constrain hospital use and expenditure. However, as yet, they only have some of the necessary tools to do so. Ensuring that vital but expensive hospital services are used as efficiently as possible without compromising the nation’s health will require the cooperation of hospitals, health plans, and the government.

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Appendix I: Hypotheses

1. Between 1995 and 1996, per capita health plan expenditure on hospital care will grow less rapidly than between 1993 and 1994. The rate of increase of hospital admissions will also drop (as a result of the introduction of national health insurance and hospital revenue caps, and the expansion of the DRG system).
2. Despite the temporary reprieve provided by hospital revenue caps, as early as 1995-1996, health plans will initiate measures to reduce hospital utilization and expenditure.
3. The greatest effort to reduce utilization will be made by those health plans that have felt the most financial pressure since implementation of the National Health Insurance Law.
4. The greatest reductions in hospital utilization and expenditure are expected in Clalit Health Services, in part because its utilization and expenditure are greater at the start.
5. Under capping, Clalit Health Services will shift volume from its own hospitals to government hospitals, so as to reduce expenditure.
6. Once the hospital revenue caps have expired, hospitals will intensify their efforts to increase hospital activity, while health plans will intensify their efforts to reduce hospital activity. The consequent impact on utilization levels cannot yet be determined.
7. Health plans will focus their efforts to reduce hospital utilization on the elderly population.
8. The primary mechanism used by the health plans to reduce hospital expenditure will be the development of community-based alternatives to hospitalization.
9. In general, hospital utilization rates will drop the most for those departments, treatments, and age groups that are the focus of health plan cost containment efforts.
10. The measures undertaken by Israeli managed care organizations to contain hospital costs will have much in common with those undertaken in other countries. However, there will be differences in emphasis, which are related to differences in health care financing and organization among countries.

Appendix II: Measures Available to the Health Plans for Reducing Hospital Utilization and/or Expenditure

Price

- ◆ Volume and other discounts
- ◆ Negotiate global fee for certain type of activity

Quantity (admission, length of stay, visits, ancillary services)

- ◆ Shift activity from inpatient to hospital outpatient settings (e.g., ambulatory surgery)
- ◆ Shift activity from hospital outpatient settings to the community or even the home (especially, post-acute home health care services)
- ◆ Shift activity from general hospitals to rehabilitative or long-term care institutions (this could involve service development)
- ◆ Use own hospital/lab instead of outside services
- ◆ Improve accuracy of accounting of days
- ◆ Ensure accurate DRG assignment
- ◆ Require prior authorization for admissions and/or expensive tests
- ◆ Institute concurrent review
- ◆ Plan for patient discharge
- ◆ Direct patients to cost-conscious hospitals

Share risk with hospitals, health plan physicians, and patients (through co-payments)

Make hospitals aware that health plans have other options

- ◆ Competitive bidding
- ◆ Carve-out contracts for specialized services

Influence physician decisionmaking

- ◆ Delegate budgetary responsibility
- ◆ Provide physicians with information about hospital use (profiling) for their patients
- ◆ Let primary care physicians be gatekeepers for inpatient and outpatient hospital care

Improve information about hospital use

Develop community-based services

Encourage government action

- ◆ Price setting / pressure on the Ministry of Health
- ◆ Capping
- ◆ Limitation on capacity growth
- ◆ Expansion of DRG and other global payments

Appendix III: Incentives for Health Plans and Hospitals, with and without Capping

Actor	With Capping	Without Capping
<i>Hospitals</i>		
Government and other hospitals with cap	Increase activity to cap, without exceeding it	Increase activity
Hospitals without cap	Not applicable	Increase activity
<i>Health Plans</i>		
Clalit Health Services	<ol style="list-style-type: none"> 1. When cap is reached, increase activity 2. Transfer activity to government hospitals 	<ol style="list-style-type: none"> 1. Decrease activity 2. Transfer activity to Clalit-owned hospitals
Other health plan	<ol style="list-style-type: none"> 1. When cap is reached, increase activity 2. Transfer activity to government hospitals (strong incentive) 	<ol style="list-style-type: none"> 1. Decrease activity 2. Transfer activity to government hospitals (mild incentive)