

THE PERFORMANCE OF LOCAL HEALTH PROVISION NETWORKS – THE CASE OF THE HUNGARIAN MANAGED CARE ORGANIZATIONS

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Public management literature, using network theories, is basically directed at examining and explaining how policy networks work. Much less attention is paid to analyze local service provision networks. In our paper we explore how a network management model can be used to describe local health provision networks, how the performance of local networks is influenced by network characteristics, and how these local networks can be connected to policy networks. We use the framework created by Benson (1975; 1982) and “rediscovered” by Hudson (2004) to examine the case of Hungarian managed care organizations. We find that this model can be applied to examine the performance of local service provision networks as well as the policy level factors behind them.

Keywords: local service provision; managed care organizations; network model; Hungary

1. INTRODUCTION

Networks as an alternative way of coordination are gaining popularity in economic theories and management studies. Using a network approach for analysis is especially suitable in the public sector since government agencies, other public institutions, and public service providers are interrelated and interdependent in various ways. While public policy expectations are expressed in terms of outcomes, these outcomes are results of activities carried out by several agencies, public organizations, not-for-profit organizations, and for-profit organizations (public networks or “hybrid” networks). Network management concerns how policymaking agencies try to influence the members of service provision networks in order to

fulfill policy expectations, i.e. how they try to establish a connection between policy objectives and organizational level objectives.

Public management literature, using network theories, is basically directed at examining and explaining how policy networks work (for a review and evaluation, see Klijn – Koppenjan 2000). Much less attention is paid to analyze local service provision networks. Or, to put it in another way, while the network approach is relatively often used to explain how policy objectives emerge from the clash of conflicting interests caused by competition for resources such as budget and legitimacy (which we could also call “strategic management” of networks), the role of networks and network management is less understood in implementing those objectives (“operative management” of local service provision networks). Health provision (with general practitioners, out-patient care, hospitals, rehabilitation centers, pharmacies and other providers) and transportation (with urban means of transportation, trains, buses, etc.) are good examples of how public service provision is based upon local level network management: effective and efficient service provision requires the coordination of network members (e.g. referral protocols in health care, or schedule harmonization in transportation).

In our paper we explore how a network management model can be used to describe local health provision networks, how the performance of local networks is influenced by network characteristics, and how these local networks can be connected to policy networks. We use the framework created by Benson (1975; 1982) and “rediscovered” by Hudson (2004) to examine the case of Hungarian managed care organizations. Our postulations are built upon the field research we carried out in the spring of 2005 among Hungarian managed care organizations (MCOs), which implies an implicit case study methodology. In the first part of our paper we briefly review the history of the Hungarian managed care model with an emphasis on characteristics which are unique in Hungary. The second part introduces the network analysis framework used for our research, based on Benson’s and Hudson’s work. The third part gives specific details about the research methodology. The results section is followed by some conclusions and further research issues.

2. MANAGED CARE ORGANIZATIONS IN HUNGARY

Health care services in Hungary are funded principally from the compulsory-benefit National Health Insurance Fund (NHIF) for operating expenses, and from taxation for fixed-asset investments. Health services are predominantly delivered by public providers in facilities that are, in turn, mostly owned by local municipalities. Providers have a contractual relationship with the NHIF Administration (NHIFA), the supervisory authority.

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Under the former state-socialist model, health care institutions received a fixed annual budget, adjusted (increased) by a certain percentage each year. The budget was not linked to performance but to input norms and individual political bargaining power. The reforms of the 1990s brought significant changes: patient capitation financing was introduced for GP services; fee-for-service point system (the so-called “German point system”) for out-patient specialist care; the DRG system for acute in-patient care; and the bed-day method for chronic care (Gaál et al. 1999).

Although the new financing system was intended to be more performance-related, both the efficiency and the effectiveness of health provision have been rather disappointing ever since. GPs have kept referring patients to higher levels of care due to the lack of financial incentives. Hospitals significantly increased their service volume in order to sustain the biggest possible proportion of their excess capacity. Although macro-level health care expenses were reduced in comparison to the mid-90s (from 7.9 to 6.4% of GDP, according to Orosz 1999), most organizations sought for survival by cutting their operational costs rather than by optimizing their capacity, or reducing their service portfolio. Cheating in the German point and DRG systems by “optimizing” reported services to find the “best value” as well as reporting services which in reality were never provided became viable options for out-patient care institutions and hospitals. As controlling and monitoring activities of the NHIFA are constrained to a low extent due to scarce financial and human resources and real interest in reducing budget deficit (which is annually reimbursed from the state budget), reported performance has almost doubled since the introduction of the point systems.

In this context, in 1999, the Government decided to implement an alternative, “managed care-like” model of health care financing and administration. This “managed care-like” model was intended to lead to more efficient and effective health care management by

- placing greater emphasis on prevention,
- controlling patients’ needs for treatment at different health care levels,
- controlling the quality of services, and
- providing training and incentives to physicians to use more efficient methods in treatment.

The basic idea behind the Hungarian managed care model is to use weighted capitation payment towards managed care organizations (MCOs) and bill them the full cost of services that are provided to the population they serve. Since the level of capitation payment reflects the estimated cost of an average level of health services both in terms of use and efficiency, MCOs are supposed to become inter-

ested in getting health care providers to treat all patients at the proper level of care – and use resources only as necessary. The same basic idea also entails that, unlike archetypal HMOs around the world, Hungarian MCOs do not have any legal (coercive) means to rationalize consumption patterns and patient flows in their operating area. Hungarian MCOs have indeed limited controls to influence what happens in their territory: they must resort to economic or psychological incentives to persuade their partners in local health provision networks to join forces in cost containment, prevention and health communication. However, some direct financial motivators were also built into the system: NHIFA paid a 1-dollar-per-year “organization fee” and a 2.50-dollar-per-year “prevention fee” per person covered, to be used for covering operational costs, and organizing prevention and screening programs. This sum was symbolic rather than significant, but proved to be enough to motivate some GPs to participate in the model.

This *modus operandi* stems in the experimental nature of the model: around 1999, policymakers practically did not have enough resolution to capsize Hungary’s entire health system and a spontaneously self-organizing, “stealthy” reform seemed to give much more leeway to find the optimal solution for system-wide transformations.

Thus, the success or failure of Hungarian MCOs basically relies on the applicability of two types of incentives: (1) financial incentives, i.e. savings generated through local network cooperation can partially be distributed among network participants, ensuring them an additional source of income; (2) given a sufficiently high rate of GP participation in a certain MCO region, collegial control (Macintosh 1995) is likely to reduce stakeholders’ reluctance towards cooperation. Such controls are, however, seldom satisfactory to lead to a congruence of interests between GPs (broadly taken primary care) and in-patient care: the financial gains hospitals can achieve through cooperation with GPs are normally inferior to the income potential from “output boosting”, i.e. registering treatments and interventions according to what the point systems favour and honour most. Hence the major weakness of the Hungarian MCO system: it is virtually unable to control hospitals’ output boosting.

From what was said above, it can be intuited that Hungarian MCOs can rely much more on organic, idiosyncratic forms of local collegial control than on technocratic or bureaucratic measures to control health provision processes in their region.

In June 1999, Hungarian managed care started with nine participating organizations, of which two were formed by GP associations, two by out-patient health providers and the remaining five by hospitals. Of the nine “founding fathers”, four were already out of play within six months because they could not, or did not want to, comply with certain financial terms of the contract established between them

and the NHIFA. The average number of population involved was roughly 160,000 in that year. At the end of the year, moderate savings (approx. USD 3 per capita) were reported at the system level (HAO 2005).

In June 2001, two out-patient-provider-based MCOs joined the system, whereby the average population involved rose to approximately 380,000 people. The HMO system took 2–2.5% of all health spendings of the 2001–2002 NHIFA budget and resulted in average savings of USD 16 per head involved.

In 2002, no new players entered but the existing ones went on to expand their operations to a wider population. Half a million people were involved in the model at that time. In July 2003, four HMOs were admitted to the system; three were hospital-based, one was GP-based. With their participation, the population covered suddenly increased to more than 800,000 people and the expansion continued throughout the rest of the year. By mid-2004, MCOs covered approximately 10% of the Hungarian population, and from September 2004 onwards 2 million people (20% of the country's population) were served in the managed care system.

During the summer and early autumn of 2004, plans emerged to extend this system to the whole population, which was to have foregone a complete switch to a multi-insurer structure and an explicit participation of for-profit financial institutions and insurance companies in Hungarian health care. With a prime minister change and the subsequent reshuffling of the government, these plans were thwarted, which also entailed that HMOs were again not vested with any formal power to control patient flow in their regions. The only significant alteration made to the model was that HMOs were now obliged to cover geographically contiguous areas as opposed to the previous situation when GP areas scattered on the map were also permitted to form HMO networks. Since February 2005, HMOs have covered 2.5 million people and been faced with the requirement that each of them has to cover a minimum population of 100,000 (HAO 2005). This extension to 2.5 million people can be explained as a compromise between backers and opponents of the HMO experiment. During the second half of 2005, official support for the HMO model dropped, and the future of MCOs became uncertain. Early in 2006 the "organization fee" and the "prevention fee" were cancelled, resulting in all direct financial motivators being suspended.

Simultaneously, more and more critiques have been articulated against Hungarian managed care, alleging that so far it has not been able to attain any palpable financial or health outcomes. The fact that only one half of all MCOs have been able to realize savings (with savings levels strongly differing) suggests that the expected increase in efficiency through the implementation of the new system has been realized only to a moderate extent. Besides missing legal means of HMOs, a possible reason for that may be the lack of performance-oriented thinking and adequate performance management tools in MCOs and the network surrounding

them (see for example Friedman 1996; Shekhri 2000; Nagy – Dózsa 2002). A lack of performance-oriented thinking has also been typical of the supervisory authorities, leading to non-existing or underdeveloped monitoring systems.

In fact, the experimental nature of the Hungarian managed care model, by which no emphasis has been laid by policymakers on developing formal systems to bring the experiment into real adulthood, makes macro-level performance analyses virtually impossible. No reliable data can be found as to which HMOs have worked effectively in financial and medical-professional terms, and the numbers that do exist come from so many sources and calculations that interorganizational comparisons are practically senseless. One conclusion might be that decision-makers might have responsibility for failing to streamline the model; another is that the performance of HMO networks should be explored at the local level. In our paper we set out to analyze how differences in local service provision networks may result in different performance characteristics.

3. A NETWORK MODEL FOR ANALYSING HEALTH PROVISION NETWORKS

Overview of Benson's model, and its application for the case of health provision

According to Benson (1975; 1982), as cited by Hudson (2004), effective local network partnership depends upon the equilibrium obtained in four dimensions: *domain consensus* (agreement regarding the appropriate role and scope of each agency), *ideological consensus* (agreement regarding the nature of the tasks faced), *positive evaluation* (or trust) towards other organizations, and *work coordination* (the alignment of working patterns and culture). Internal and external factors that influence the equilibrium are as follows: the fulfilment of program requirements, the maintenance of a clear domain of high social importance, the maintenance of orderly, reliable patterns of resource flow, and application/defense of the organization's paradigm (see *Table 1* for an overview of the model).

The following section deals with the factors behind the dimensions of Benson's model. We also articulate how these dimensions should be interpreted in the health care sector.

Table 1. A framework for analyzing local network partnerships

Super-structure: Operational relationships

Degree of domain consensus (= to what extent the roles and responsibilities of different network members are clear) – symbiotic cooperation – competitive cooperation	Degree of ideological consensus (= to what extent network members agree on problem definition and problem resolution) – shared assumptions and values
Degree of positive evaluation (= to what extent the workers of network members trust in each other) – reputation and trust – relative status and power	Degree of work coordination (= to what extent working patterns and cultures are aligned in a network) – task complexity – autonomy and authority

Sub-structure: Contextual influences

Fulfilment of program requirements (= to what extent provider networks undertake tasks which are consistent with present policy requirements) – “top-down imperative” – setting priorities at provider network level	Maintenance of a domain of high social importance (= to what extent the agenda has public legitimacy and support) – addressing “popular problems” – defining “new problems”
Maintenance of resource flows (= to what extent the resource flow is predictable and reliable) – adequate resources – gaining new resources	Application/defense of the organizational paradigm (= to what extent participants are committed to the agency’s way of doing) – problem and task definition

Source: Benson (1975); Hudson (2004).

Super-structure

The degree of domain consensus

The effectiveness of local network partnerships is clearly dependent on whether the scope of activities is clear between organizations in order to avoid duplication of resource use, and whether an adequate level of specialization is attained in order to utilize economies of scale. “Domain consensus is more likely where organizations have similar *goals*, whereas similar *functions* would be likely to put them in competition” (Hudson 2004: 85). “Symbiotic cooperation” (Alter – Hage 1993) is used to refer to relationships where organizations work in different sectors and produce different products or services, whereby their operations also need some cooperation at least in resource allocation. In a “competitive cooperation”, organizations are striving for the same output. In this latter case, it is more likely that network members try to expand their domains against other members.

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Health provision is a mixture of possibilities for both types of cooperation. All levels of the health care system should basically be aimed at improving the health status of citizens. It is clear that there is a certain level of treatment that GPs can offer most effectively, while other treatments and interventions are “best” provided at out-patient care institutions or hospitals. Economical use of resources requires a symbiotic cooperation of different progression levels. This does not exclude, however, competitive cooperation as a feature of health provision. Organizations at the same progression level are competing for patients. This competition improves efficiency primarily at the GP level but should also result in specialization at the hospital level in order to utilize economies of scale. Moreover, competition takes place between health care levels as well: for example, the continuous technological development improves possibilities for providing adequate, definitive treatment at lower health care levels for more and more illnesses. The fact that therapies can be offered at various levels is consistent with one of the main objectives of HMOs (i.e. to decrease demand for higher level treatments) and logically results in a higher degree of competition.

The degree of ideological consensus

The process of socialization, the existence of common professional language, and an increase in the number of tacitly known rules for action (Jones et al. 1997) enhance shared assumptions and values concerning the professional knowledge needed for service provision. The level of structural embeddedness (“the extent to which a dyad’s mutual contacts are connected to one another” – Granovetter 1992: 35) is also a factor influencing shared values: the more structural embeddedness exists, the more likely it is for actors to share values and assumptions. When ideological consensus is increased in a system, coordination of activities becomes easier, which results in an increase in network efficiency.

Within health provision, the focus is (or should be) directed at treating patients and improving the health status of citizens. This basically equals to the task of finding an appropriate balance between health-related education, prevention, provision and care. The need for integrated data systems (i.e. electronic record databases, or electronic social insurance cards) shows that the system of health provision should consider patients as single entities, and the process of treatment should not be interrupted at institutional borders (“takeover points”). When this is established, ideological consensus will be reinforced.

As the first years of the socialization process are the same for all physicians working at different levels of health provision, their professional language may be viewed as another linkage facilitating ideological consensus. Later, the degree of

ideological consensus is decreased due to “sub-socialization effects” in one of the more self-contained clusters of physicians (GPs, out-patient care specialists, or hospital doctors), where sub-cultures are created with much less intensive communication between them. When financial incentives are improperly chosen, this divergence is further fortified. Pharmaceutical companies and the incentives they use selectively also tend to deepen gaps between different levels of health provision.

A higher level of ideological consensus may result in better treatment protocols (both in terms of efficiency and effectiveness), as well as a better allocation of resources between prevention and treatment activities. Effective use and internalization of treatment protocols, being focal objectives of HMOs, require higher levels of ideological consensus.

The degree of positive evaluation

Strongly related to domain consensus and ideological consensus, positive evaluation connects directly to terms such as opportunism, trust, and fairness, and high level of reputation. A high degree of positive evaluation (trust) between network members reduces transaction costs by decreasing uncertainty. The relative status and power of participating members will evidently influence the ease of reaching positive evaluation (Hudson 2004: 87–88). A higher degree of positive evaluation facilitates higher levels of domain and ideological consensus, while low trust in a system may prevent parties from any types of cooperation. Benson (1975: 238) also highlights the role of competition: “Competition for funds and authority is likely to encourage negative interagency judgments. This is apt to occur even where the agencies advance similar ideologies and utilize similar technologies. The development of coordinated work may also fail to mitigate negative judgments if interest conflicts are not resolved.”

The professional status of hospital doctors is very much higher than that of GPs, which makes it more for HMOs to place more emphasis on activities that can be carried out primarily by GPs (e.g. definitive treatment at a lower level, prevention activities). The predominance of medical knowledge in health care management, both at system and institutional levels, decreases the legitimacy of other professionals (economists, lawyers, managers) in health provision, undermining their efforts to define cost effectiveness into treatment protocols, set up legal contracts with the explicit accountability of the interested parties and use performance-oriented managerial techniques at organizations. As regards competitive cooperation mentioned in connection to domain consensus, a network consisting of more specialized members needs higher level of trust due to the increased degree

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of interdependency (which can be seen, for example, in the higher number of mutual patient referrals). It should be also added that the Hungarian system of health financing, by “legitimizing” cheating at all levels, is another factor eroding trust among network members.

The degree of work coordination

“Within provider networks, the culmination of domain consensus, ideological consensus and positive evaluation can be work coordination – the alignment of working patterns and culture” (Hudson 2004: 88). Where the tasks to be completed by various network members are complex and interdependent, a higher degree of work coordination clearly improves the efficiency and effectiveness of the network. Improving work coordination, however, is more difficult when there are autonomous professionals whose work should be coordinated. As Hudson comments, “[m]ost professionals are reluctant to subordinate themselves to others, or to support goals that are not congruent with their special viewpoint” (*ibid.*: 89).

The work of physicians is traditionally considered as a work of high autonomy and authority. Since a physician is highly responsible for the treatment he or she provides to the patients, it seems a just claim to have wide autonomy regarding medical decisions. Two of the HMOs most influential tools, treatment service authorization and the development and monitoring of treatment protocols clearly place limitations upon the authority and autonomy of physicians, leading to reluctance to improved work coordination. Another factor worthy of mention is data transfer between network members: while the utilization of shared databases, or at least sharing essential medical information about patients, improves the efficiency and effectiveness of health provision, it also sets limits on possibilities for “performance games”. Where financial incentives are distorted (like in Hungary), sharing information with other parties is not in the interest of information owners.

Sub-structure

A policy network is defined by Benson (1982: 148) as “a cluster or complex of organizations connected to each other by resource dependencies, and distinguished from other clusters or complexes by breaks in the structure of resource dependencies”. A policy network therefore consists of all the local provision networks producing similar outputs, thus facing similar environmental conditions regarding their resource markets, and having a strong relationship to “their” legislators and

supervisory agencies. The four components that Benson identified determine the “chances” of policy network members to influence policymakers in a way that is in their favour (i.e. to gain more financial resources and legitimacy). It follows that the equilibria reached in these components reflect policy level support of the provision network. If provision networks

- are able to fulfil requirements and objectives set by policymakers (i.e. follow goals set by their superordinated agencies), or are able to implement objectives which are consistent with those goals,
- are able to maintain the social importance of their agenda (i.e. are able to convince public opinion about the importance of their field of activities),
- are able to secure their resource flows in terms of steady increase, and
- are able to use problem definitions consistent with the superordinated agencies (i.e. are able to use a “common language”),

then the flow of the two most important resources in the public sector (money and legitimacy) is guaranteed to them to a greater extent.

Balance in the local service provision network

If the equilibrium in the components of the super-structure can be reached at a higher level than earlier, it will improve the efficiency and effectiveness of the service provision network. Reaching equilibria in different components, however, are not independent of each other. “Interaction among the components may produce circular processes of equilibration, moving the network toward equilibrium, or disequilibration, moving the network away from equilibria. Other things being equal, the network tends to become balanced but not necessarily equilibrated” (Benson 1975: 236).

Therefore, Benson suggests that local service provision networks, “left to their own” for enough time, become balanced at low-low-low-low, medium-medium-medium-medium, or high-high-high-high degrees of equilibrium (supposing that a three-grade scale is used for evaluation). However, it may also occur that one element (some elements) of the model is (are) not in balance. This may be a consequence of an internal strategic action, when member(s) of a network initiate(s) actions that modify the equilibrium, or a reform (change) initiative coming from the outside, typically from the policy level. The strategies that can be used to alter equilibria, and thus network performance, are highly dependent on network characteristics as well as policy level constraints.

Dynamics of service provision networks – How to initiate change in networks

Policymakers try to influence the functioning of the service provision network by (1) increasing or decreasing the level of resources inflow, or (2) introducing mechanisms that change the distribution of resources in the network, i.e. altering network structure. The strategic options available for network members are more restricted: (a) they may increase the volume of resource inflow to the network by trying to improve equilibriums in sub-structure components (in the first place, by fulfilling their agency's program requirements to a greater extent) which is an *in-direct* path of influence (requiring efforts from an overwhelming majority of network members), or (b) altering the relations in their local provision network which is a *direct* path of influence.

The launch of HMOs is the result of a policy-level decision, therefore strategies available for policymakers to initiate change in local provision networks are in the focus of our research. Moreover, when HMOs are trying to alter their own local health provision network in order to fulfil HMO objectives, they also play a role which could be described as “local policymaking”. It follows that the strategies overviewed below can be applied to analyze both the appearance of HMOs and their efforts to implement their objectives.

The four strategies Benson identified (without delving into details about sequential and combined variants of these strategies) are as follows:

- *Cooperative strategies*: “change is sought through agreements and joint planning. [...] [T]he conditions for their success are restrictive. Such strategies are limited to situations in which each party has some minimal degree of power vis-à-vis other parties” (Benson 1975: 241).
- *Disruptive strategies*: “the purposive conduct of activities which threaten the resource-generating capacities of a target agency. Such activities are undertaken in order to force change upon the target agency, including altered relations with other participants in its network or environment. Such tactics must effectively attack vital resource-maintaining functions in order to be successful” (*ibid.*: 242).
- *Manipulative strategies*: “the purposeful alteration of environmental constraints affecting the flow of resources. Such action is undertaken as a means of producing change in interorganizational networks and in the program priorities and technological commitments of agencies. [...] Manipulative strategies require a certain minimal degree of network autonomy or decentralization” (*ibid.*: 243–244).

- *Authoritative strategies*: “the authoritative alignment or realignment of network relations. [...] Precise specification of relations include the regulation of contacts, referrals, resource sharing, and other details. [...] The essential criterion delineating this type of strategy is the utilization of a dominant position in the flow of resources – money and authority – to specify the nature of programs and linkages at subordinate levels. [...] The initiating party must have sufficient power vis-à-vis the network in question to implement the change process even though some agencies resist” (*ibid.*: 244–245).

Having reviewed the network model used for our analysis, and having discussed its application to health provision, now we turn to the analysis of the Hungarian HMO system.

4. RESEARCH METHODOLOGY

Case study could be an applicable and effective research method if the field of research is broad enough and when the research is still in the exploratory phase and theory building is on the agenda (Eisenhardt 1989). The aim of this kind of qualitative research is not to produce a standard set of results, but to offer a coherent and illuminating description based on a detailed study of the case. Our research objective (examination of Hungarian MCO as networks) fulfils these criteria, so case study carried out by participative observations and interviews was selected as primary research method. As a supplementary technique, we analyzed evaluation reports about Hungarian managed care system and various documents were gathered concerning the regulatory and financing framework for the “traditional” health care system and managed care system as well.

From the autumn of 2004, 18 HMOs participate in the Hungarian managed care system as organizers. Our team visited all HMOs and some partner institutions NHIFA, hospitals and a consulting firm providing IT solutions for some HMOs) during February and March 2005. The sources of evidence were based on in-depth interviews. Because of the nature of this study, informants were chosen among the management team of HMOs and key actors of the partner organizations (head of the HMO department of NHIFA, directors of hospitals, senior consultants of the IT provider consulting firm).

The key points of the interviews were questions related to characteristics of relationships among network members (e.g. interests of stakeholders, contractual relationships), as well as tools of motivation and coordination (distribution of savings among members, application of treatment protocols, different prevention programs).

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5. RESULTS

Super-structure

Prior to analyzing the network dynamics of hospital-based and GP-based Hungarian HMOs, it is essential to have a preliminary picture about health provision characteristics in the Hungarian health care system in general. These characteristics constitute the initial setting in which HMOs took their start.

Conditions that prevailed in the overall Hungarian health system in 1999 still prevail today – in this sense the system is static. Local networks outside the HMO model, or before entering the HMO model, can be characterized by the following:

- *Domain consensus is low*: the financing system induces each institution to fight against other institution in a struggle to get hold of scarce financial resources. The German point system and the DRG-system force hospitals into a clash over in-patients and out-patients. As GPs are financed according to a capitation payment, they are also interested in enticing patients to their own districts, resulting in weak domain consensus.
- *Ideological consensus is medium*, which can be seen as the product of two opposing forces. On the one hand, hospital physicians and GPs, as well as other members in the health care system, share common basic beliefs about their profession and the guidelines that escort them when practicing this profession (see above). On the other hand, we have experienced deep abysses in our research as regards how different medical groups consider the importance of prevention, health communication and the goal of health care.
- *Positive evaluation is low*: the Hungarian health system is still a feudal one where “landlords” – reputed representatives of sub-professions – mutually disdain one another. Deep misunderstandings harden the communication between hospital doctors and GPs.
- *Work coordination is low*: both institutions and GPs have almost complete individual autonomy as regards their medical and economic decisions. Collegial control that exists is insufficient to counterbalance the negative incentives of financing. The system can be seen as a pool of “craft technologies” (Macintosh 1995) with a huge grade of inertia.

It is this, perhaps dismay, initial setting that HMOs attempted to challenge. The two distinct types of HMOs operating in Hungary (hospital-based and GP-based) quickly developed different models of operations, in which characteristics of network cooperation are well-reflected.

We found *hospital-based* HMOs to possess the following network characteristics:

- *Domain consensus is medium*: hospital-based HMOs have in several cases succeeded in establishing a “dominant coalition” of regional hospitals. These hospitals recognized that cooperation between institutions can lead to more lobby power and internal network stability. The dominant coalition, however, often ostracizes GPs. Thus, domain consensus between hospitals and GPs remains marginal.
- *Ideological consensus stays medium*: hospital-based HMOs do not seem to have had any impact on network characteristics as compared to the overall health care system. Similarities in common beliefs and differences in views on the “gist” of health provision have remained unaltered.
- *Positive evaluation is still low*: hospital-based HMOs have apparently been unable, or unwilling, to alter cultural discrepancies and misunderstandings between GPs and hospital physicians. HMOs that pride themselves with a high level of positive evaluation turned out to have fostered intensive cooperation between different health provision levels already before the managed care experiment was launched.
- *Work coordination seems medium*: the elaboration of treatment and prevention protocols has contributed to strengthening work coordination in hospital-based HMOs.

It can be seen that hospital-based HMOs have brought about slight changes in domain consensus and work coordination. Higher domain consensus, however, may not be discussed as an unquestionably positive phenomenon: it is strongly related to the development of dominant coalitions which help preserve the structural imbalances in networks. The intensification of work coordination through protocol use is less disputable, which suggests that *the only significant change took place in the very dimension which reflects followed, and not espoused, values*.

In contrast to hospital-based HMOs, GP-based managed care organizations have not succeeded in generating any change in the way the local health provision network operates. Domain consensus remains low and ideological consensus is medium, with the other two dimensions remaining low as they had been before (*Table 2*).

Table 2. Local network characteristics of health provision in Hungary

	Domain consensus	Ideological consensus	Positive evaluation	Work coordination
Overall health care system	Low	Medium	Low	Low
Hospital-based HMOs	Medium	Medium	Low	Medium
GP-based HMOs	Low	Medium	Low	Low

How can we explain such, even if small, differences? We postulate that hospital-based HMOs are in a position to follow a network management strategy that GPs are unable to follow: *the authoritative strategy*. Indeed, the authoritative strategy seems to be the only working strategy in today's Hungarian health system and comprises making use of hospitals' strong bargaining power and cultural dominance. It must be noted that resource command accumulates at hospitals as there are no effective sanctions against output boosting, and output boosting is a secure way of piling up financial resources enough to dominate a local provision network. It should also be understood that cooperative strategies are not viable because of the system of health care financing; disruptive strategies cannot be followed as patients "go wherever they want to go"; and manipulative strategies cannot work as they have no impact on performance appraisal and output-driven financing of out-patient care institutions and hospitals.

To sum up: the fact that the appearance of GP-based HMOs could not induce any changes, while hospital-based HMOs have produced a slight move towards higher domain consensus and work coordination can be explained through the very weak bargaining power of GPs as opposed to hospital-based managed care organizations. Differences in bargaining power appear in the fact that hospitals can use authoritative strategies facing other network partners while GPs cannot. This entails that hospital-based HMOs succeed in raising both domain consensus and work coordination to a medium level. From what we said above, it can be seen, however, that changes have taken place mostly in that dimension (work coordination) which reflect followed, and not necessarily espoused, values.

Sub-structure

When trying to identify the role of policymakers in the Hungarian HMO model, we are faced with a unique situation: the Ministry of Health does not behave like a legislator, and all the whole legislative framework affecting HMOs operations has been elaborated and is monitored by the NHIFA, the supervisory board of the Hungarian health system.

In terms of Benson's model, the dimensions of the policy network can be characterized as follows (an overview is given in *Table 3*):

- *Fulfilment of program requirements is low*: a main deficiency of the Hungarian HMO model is, as the HAO (2005) report pointed out well, that no detailed objectives and performance targets were set at the launch of the model and, as a consequence, no real monitoring activities have been performed ever since. However, the lack of formal requirements cannot cut back claims to evaluate the performance of the system: *latent requirements* emerge that reflect the often contrasting interests of various evaluators and critics. Taken so, HMOs are unable to meet such an eclectic mixture of requirements that emerge from interactions of interested parties.
- *Clear domain of high social importance is low*: while health care reform is one of the most popular topics in Hungary, only a very low percentage of the population covered is aware of being served by HMOs.
- *Reliable patterns of resource flow is low*: as financial resources allocated to the HMO model are determined in the central budget law each year, and the rudimental legal background is supplemented only by some operational rules set by the NHIFA, operations of HMOs are characterized by efforts to cope with extreme short-term uncertainty. The lack of long-term incentives and the disbelief in the long-term survival of the model have led several network members to develop certain resistance to implementing changes which could really improve the efficiency and effectiveness of the network. This makes the fulfilment of HMOs objectives (of any nature) very difficult, or, in most cases, impossible.
- *Application/defense of the organization's paradigm is low*: the lack of "common language" is a direct consequence of missing evaluation criteria. The experimental nature of the HMO system in Hungary has led to the emergence of several parallel "paradigms" both at the level of local networks and the levels of policymaking and evaluation.

Table 3. Policy network characteristics of health provision in Hungary

	Fulfilment of program requirements	Clear domain of high social importance	Reliable patterns of resource flow	Application/defense of the organization's paradigm
HMOs network and NHIFA	Low	Low	Low	Low

Having seen the characteristics of health provision policy networks (sub-structure), as well as the characteristics of local networks (super-structure), it is worth adding some words on the relationship between super-structure and sub-structure.

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We saw that the structure of the local network determined if change strategies could be initiated or not: hospital-based HMOs could initiate some change in the network, while GP-based HMOs could not. However, the real explanatory factors (i.e. financing rules) are to find at the policy level, and support from the policy level towards HMOs has remained low. It is an open question, and it can be a further test of Benson's suggestion about constant movement towards balance, whether the positive shift towards medium values in the case of hospital-based HMOs will result in a positive shift in the remaining dimension – positive evaluation – as well.

Local network characteristics may influence the level of policy making as follows: (1) the higher level of equilibrium reached in certain dimensions, i.e. more successful functioning of the local network, is about to fulfil some of the program requirements of the policymaker, which, in turn, will result in an increase in vital resources such as money and legitimacy; (2) the unbalanced nature of the provision network brings some of the otherwise hidden problems to the surface, pointing at the significance of implementing policy changes. We think that both the relative success and the unbalanced nature have some role in policy development.

What happened to the model is different. In March 2005, it was decided that the Hungarian HMO “experiment” should be continued as a standardized program with detailed and legitimate legal background, clearly communicated and understood principles in financing and motivation, and a well-developed and theoretically grounded monitoring system to evaluate efficiency and effectiveness of HMOs. However, these efforts could not result in a more stable and better regulated framework as support dropped and HMOs did not succeed in becoming a real policy issue. The experiment has not been finished officially but the direct financial motivators (other motivators than potentially realized savings) have been abolished, and, this way, HMOs virtually gave up their operations. What was intended to be a “stealthy” reform became invisible in the end.

6. CONCLUSIONS

The Hungarian HMO model has some unique characteristics dissimilar to “standard” HMO models. The lack of effective HMO management tools – controlling patients' choices between service providers, developing and monitoring effective treatment protocols, using sophisticated compensation systems to motivate all the interested parties towards cooperation – can be traced back to the “stealthy” nature of the “reform” HMOs were meant to bring about. It turned out that these limited tools were not sufficient to alter the network structure around GP-based HMOs but hospital-centered HMOs could grasp the opportunity to increase their domains

and improve their performance. However, these developments, as well as the lack of success in GP-based HMOs, pointed out the most contradictory features of the health care system. It also turned out that these changes were not sufficient to initiate policy changes in favour of the HMO model; some ensuing performance improvement at the local service provision network level could not counterpoise the lack of support at policy level – partly due to the “stealthy” nature of the reform.

We used Benson’s network model to analyze the characteristics of the Hungarian HMO model. We found that this model can be applied to examine the performance of local service provision networks as well as the policy-level factors behind them. To determine the degrees of equilibrium, we basically used the factors that were provided by Benson (1975) and Hudson (2004). It turned out, however, that further refinement of these factors will be needed in order to make evaluations more founded. We suggested that policy-level development may be traced back to (1) higher performance of local networks, and thus improved fulfilment of program requirements, and/or to (2) the problems that unbalanced nature of the evolving local network brought to the surface. Further research is needed to clarify other linkages between the service provision and the policy level of public sector networks.

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