THE IMPACT OF THE INSTITUTIONAL SETTING OF HEALTH PROVISION ON NETWORK PERFORMANCE – THE CASE OF MANAGED CARE ORGANIZATIONS IN HUNGARY

Corvinus University of Budapest, Institute of Management
Budapest Centre for Performance Management

Abstract

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 HMO’s.

Introduction

Networks as an alternative way of coordination are gaining popularity in economic theories and management studies, as well as in public management (Berry et al., 2004). Using a network approach for analysis is especially suitable in the public sector since government agencies and other public institutions 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 or ‘hybrid’ networks). Network management concerns how policy making 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 (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, the role of networks and network management is less understood in implementing those objectives in local service provision networks. Health provision is a good example of how public service provision is based upon local level network management: effective and efficient service provision requires the coordination of network members.

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 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 2005, which implies a field study methodology.
Managed care organizations in Hungary

Health care services in Hungary are funded principally from the compulsory-benefit National Health Insurance Fund 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.

Under the former state-socialist model, health care institutions received a fixed annual budget. The reforms of the 1990’s brought significant changes: patient capitation financing was introduced for GP services; fee-for-service 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. GP’s have kept referring patients to higher levels of care and hospitals significantly increased their service volume in order to sustain the biggest possible proportion of their excess capacity.

In this context, in 1999, the Government decided to implement an alternative, ‘managed care-like’ model which was intended to lead to more efficient and effective heath care management by placing greater emphasis on prevention, controlling patients’ needs and the quality of services, and providing training and incentives to physicians. The basic idea behind the Hungarian managed care model is to use weighted capitation payment towards managed care organizations 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, HMO’s are supposed to become interested 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 HMO’s around the world, Hungarian managed care organizations do not have any legal (coercive) means to rationalize consumption patterns and patient flows. This modus operandi stems in the experimental nature of the model: around 1999, policymakers practically did not have enough resolution to upend 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 HMO’s 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; 2) given a sufficiently high rate of GP participation in a certain HMO region, collegial control (Macintosh 1995) is likely to reduce stakeholders’ reluctance towards cooperation. However, the financial gains hospitals can achieve through cooperation with GP’s are normally inferior to the income potential from ‘output boosting’, i.e. registering treatments and interventions according to what the point system favours and honours most. From what was said above, it can be intuited that Hungarian HMO’s can rely much more on organic, idiosyncratic forms of local collegial control than on technocratic 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. The average number of population involved was roughly 160,000. At the end of the year, moderate savings were reported at the system level (HAO, 2005). Until 2005 the HMO system went on to expand their operations to a wider population. By mid-2004 HMO’s covered approximately 10%, from September 2004 20% of the country’s population.
were served in the managed care system. Since February 2005, HMO’s 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). Seemingly, more and more critiques are articulated against Hungarian managed care, alleging that so far it has not been able to attain any palpable financial or health outcomes. Besides missing legal means of HMO’s, a possible reason for that may be the lack of performance-oriented thinking and adequate performance management tools in HMO’s and the network surrounding them (Friedman, 1996; Shekhri, 2000; Nagy-Dózsa, 2002).

In fact, the experimental nature of the Hungarian managed care model makes macro-level performance analyses virtually impossible. No reliable data can be found as to which HMO’s 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.

### A network model for analysing health provision networks

According to Benson (1975, 1982), as cited by Hudson (2004), effective local network partnership depends upon the equilibrium obtained in four dimensions of the super-structure, with four other contextual factors influencing this equilibrium (see Figure 1 for an overview of the model.)

#### Super-structure: Operational relationships

<table>
<thead>
<tr>
<th>Degree of domain consensus</th>
<th>Degree of ideological consensus</th>
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<tbody>
<tr>
<td>(= to what extent the roles and responsibilities of different network members are clear)</td>
<td>(= to what extent network members agree on problem definition and problem resolution)</td>
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<tr>
<td>- symbiotic cooperation</td>
<td>- shared assumptions and values</td>
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<td>- competitive cooperation</td>
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<table>
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<tr>
<th>Degree of positive evaluation</th>
<th>Degree of work coordination</th>
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<tr>
<td>(= to what extent the workers of network members trust in each other)</td>
<td>(= to what extent working patterns and cultures are aligned in a network)</td>
</tr>
<tr>
<td>- reputation and trust</td>
<td>- task complexity</td>
</tr>
<tr>
<td>- relative status and power</td>
<td>- autonomy and authority</td>
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#### Sub-structure: Contextual influences

<table>
<thead>
<tr>
<th>Fulfillment of program requirements</th>
<th>Maintenance of a domain of high social importance</th>
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<tbody>
<tr>
<td>(= to what extent provider networks undertake tasks which are consistent with present policy requirements)</td>
<td>(= to what extent the agenda has public legitimacy and support)</td>
</tr>
<tr>
<td>- ‘top-down imperative’</td>
<td>- addressing ‘popular problems’</td>
</tr>
<tr>
<td>- setting priorities at provider network level</td>
<td>- defining ‘new problems’</td>
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<tr>
<th>Maintenance of resource flows</th>
<th>Application/defense of the organizational paradigm</th>
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<tr>
<td>(= to what extent the resource flow is predictable and reliable)</td>
<td>(= to what extent participants are committed to the agency’s way of doing)</td>
</tr>
<tr>
<td>- adequate resources</td>
<td>- problem and task definition</td>
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<td>- gaining new resources</td>
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*Fig. 1: A framework for analyzing local network partnerships (Benson, 1975; Hudson, 2004)*
According to the model, the performance of a local service provision network will be better if the equilibrium in the four dimensions of the super-structure is reached in higher levels. A local network performs better if:

- the network members are on consensus about the distribution of responsibilities for certain tasks, goals and objectives followed by the members are consistent with each other, and the unnecessary duplication of resources can be avoided (for example, in a health provision network the distribution of tasks between primary care and secondary care is clarified)—as described by the degree of domain consensus;
- the network members have a consent about the ‘nature’ of the problems they face as well as possible ways of solution (for example, in the case of health provision, the main goal is to improve the overall health status of the whole population—the task is not to manage hospitals and other institutions, or to treat diseases, but to focus on patients’ health and relevant data, to improve health instead of treating disease episodes, and to take prevention activities into consideration as well)—described by ideological consensus;
- network members trust each other, and relevant information is shared, the relationships between members is shaped by rather commitment toward common goals than differences in negotiating power (for example, joint development projects are initiated where asset specific investments are also made)—described by positive evaluation;
- interorganizational processes are well coordinated (for example, treatment protocols that meet local requirements and possibilities are put in place, and the flow of both physical material and information is well-organized)—described by the degree of work coordination.

Performance levels in all the local provision networks will be influenced by the sum of performance levels achieved by the whole ‘community’ of provision networks. It will be also influenced by the performance of the supervisory body (that is the way it succeeded with managing the network). The reasoning behind is that the macro-level success of the whole public policy program will be decided upon whether expectations are met or not in service provision. All the local networks may perform better if:

- public policy program requirements are fulfilled in a higher number of local provision networks, or to a greater extent;
- social legitimacy concerning a policy program is higher (that is the program is known and its importance is acknowledged wider in the public);
- financial and other resources are secured for the continuity of operations in a transparent manner, which encourages long term thinking;
- local provision members ‘use the same language’ to describe problems and solutions as policy makers and the supervisory body do.

Benson suggests that local service provision networks, ‘left to their own’ for enough time, become balanced at low, medium, or high degrees of equilibrium in all the four dimensions. When one element (some elements) of the model is (are) not in balance, it 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 policy level. The strategies that can be used to alter equilibriums, and thus network performance, are highly dependent on network characteristics as well as policy level constraints. 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: (1) 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 *indirect* path of influence (requiring efforts from an overwhelming majority of network members), or (2) altering the relations in their local provision network which is a *direct* path of influence. The launch of HMO’s is the result of a policy level decision, however, when HMO’s are trying to alter their own local health provision network in order to fulfill HMO objectives, they also play a role which could be described as ‘local policy making’.

**Research methodology**

According to the aim of our research, field study carried out by participative observations and interviews was selected as primary research method. Because of the nature of the study, informants were chosen among the managements of HMO’s and key actors of partner organizations (head of the HMO department of NHIFA, directors of hospitals, senior consultants of IT provider firms). Our team visited all the 18 HMO’s and some partner institutions (NHIFA, hospitals and a consulting firm providing IT solutions for HMO’s) during February and March 2005. 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). As a supplementary technique, we analyzed evaluation reports about the 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.

**Results**

Prior to analyzing the network dynamics of Hungarian HMO’s, it is essential to have a preliminary picture about health provision characteristics in the Hungarian health care system in general, constituting the initial setting in which HMO’s took their start. Conditions that prevailed in the 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 institutions in a struggle to get hold of scarce financial resources. The outpatient fee-for-service system and the DRG-system force hospitals into a clash over in-patients and out-patients. As GP’s 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 GP’s, 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. 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 GP’s.
- **Work coordination is low**: both institutions and GP’s 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, 1994) with a huge grade of inertia.
It is this, perhaps dismay, initial setting that HMO’s attempted to challenge. The two distinct types of HMO’s 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 HMO’s to possess the following network characteristics:

- **Domain consensus is medium**: hospital-based HMO’s 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 GP’s. Thus, domain consensus between hospitals and GP’s remains marginal.
- **Ideological consensus stays medium**: hospital-based HMO’s 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 HMO’s have apparently been unable, or unwilling, to alter cultural discrepancies and misunderstandings between GP’s and hospital physicians. HMO’s 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 HMO’s.

Hospital-based HMO’s 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 HMO’s, GP-based ones have not succeeded in generating any change in the way the local network operates (see Table 1).

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<tr>
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<th>Domain consensus</th>
<th>Ideological consensus</th>
<th>Positive evaluation</th>
<th>Work coordination</th>
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<tbody>
<tr>
<td>Overall health system</td>
<td>Low</td>
<td>Medium</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Hospital-based HMO’s</td>
<td>Medium</td>
<td>Medium</td>
<td>Low</td>
<td>Medium</td>
</tr>
<tr>
<td>GP-based HMO’s</td>
<td>Low</td>
<td>Medium</td>
<td>Low</td>
<td>Low</td>
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*Table 1: Local network characteristics of health provision in Hungary.*

How can we explain such, even if small, differences? We postulate that hospital-based HMO’s are in a position to follow a network management strategy that GP’s 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. Since there are no effective sanctions against output boosting of hospitals, and output boosting is a secure way of piling up financial resources, it is enough to dominate local provision networks. Moreover, cooperative strategies are not viable due to financing rules; 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.
The fact that the appearance of GP-based HMO’s could not induce any changes, while hospital-based HMO’s have produced a slight move towards higher domain consensus and work coordination can be explained through the very weak bargaining power of GP’s as opposed to hospitals. Differences in bargaining power appear in the fact that hospitals can use authoritative strategies in the network while GP’s cannot. 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.

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 act like a legislator, and the whole legislative framework affecting HMO’s operations has been elaborated and is monitored by the NHIFA. In terms of Benson’s model, the dimensions of the policy network can be characterized as follows:

- **Fulfillment of program requirements is low:** a main deficiency of the Hungarian HMO model is 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, HMO’s 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 HMO’s.
- **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 HMO’s 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 resistance to implementing changes which could really improve the efficiency and effectiveness of the network. This makes the fulfillment of HMO’s 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 policy making and evaluation.

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. We saw that the structure of the local network determined if change strategies could be initiated or not: hospital-based HMO’s could initiate some change in the network, while GP-based HMO’s 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 HMO’s 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 HMO’s will result in a positive shift in the remaining dimension—positive evaluation—as well.
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’ HMO’s were meant to bring about. It turned out that these limited tools were not sufficient to alter the network structure around GP-based HMO’s but hospital-centered HMO’s 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 HMO’s, pointed out the most contradictory features of the health care system.

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 fulfillment 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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