Matchmaking of healthcare - supporting the patient (customer)

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Abstract

As healthcare lacks incentives and systems for matching capacity between various care providers and for coordinating episodes of care, the result is capacity management that is difficult and uncertain. Long waiting and lead times between efforts entail increased risks for the patient and contribute towards expertise being utilized inefficiently. The organising of hospital care can be likened to a bureaucracy, which has not adapted its organization of work in order to be able to assume the overall responsibility for the process of patient care. There is also a lack of agency in coordinating resources for the benefit of the patient.

The productivity concept which was used in manufacturing industry, is problematized, because it is misleading for healthcare as it does not involve the contribution of the customer

The defective matching and use of a misleading productivity concept forms the departure point for outlining the possibilities of developing service productivity adapted to healthcare with the support of the concepts of value creation, the yield management method and matching, and the agent perspective. Building on the developed view on service productivity the head point is outlining the condition for a matching system in order to better match the available capacity both in and between healthcare units in order to meet and support the value creating process of the customer (the patient), with the aim of eliminating queues. An overall aim for the providers should be to match the value creation process of the customer.

Keywords: service productivity, value creation, matching, yield management, agentship

Introduction[2]

A common notion in the Swedish health care debate, and in Northern Europe, is allegedly that service productivity, as accessibility and responsiveness (WHO 2000, Hanning 2005, Le Grand 2007) have not developed sufficiently in relation to the increase in costs. Future growth of health care in Sweden is said to need increased productivity (Ministry of Finance 2003/04). However, health care services are typically seen as difficult to rationalize, manage and measure (ibid., British Medical Journal 2006). One attempt at increasing 'productivity efficiency', in order to reduce waiting lists, has been the internal market experiment (Oliver

[1] Anders Morin, the Confederation of Swedish Enterprise, has contributed with the section on incentives

[2] This paper is based on Nordgren (2009 a) in writing the first sections.

2007). The learning from this and other reforms, for example the process of integrating providers (Åhgren and Axelsson 2007), in several countries is that "existing, long-standing organizational institutions and 'ways of doing things' 'matter'. Thus it is not naturalised that the logic of the internal market and other management reforms drive productivity (ibid.)

In economic discourse productivity is seen as the value from production in relation to used resources, where value is assumed to show market prices for a good or the value for service for the customer (Hagén and Hagsten 2006[3]). However, according to Gummesson (2007, p. 125) "A misleading but recurrent statement claims that service productivity is lagging behind goods and manufacturing productivity. The statement is based on lack of understanding for service productivity, trying to measure it on the terms of manufacturing." The productivity concept from manufacturing does not fit when activities, as in healthcare, are performed by customers (ibid., Grönroos and Ojasalo 2004). According to Bloor and Maynard (2006, p. 1259) "health care systems still approach the measurement and management of productivity with a fixation on activity". Gummesson (2004) and Berry and Bendapudi (2007) argue that research regarding '*health care service productivity'* is underdeveloped. So the claim for health care services is that, traditional measuring of productivity seems to be misleading, because it does not involve the contribution of the customer (Nordgren 2009 a).

Another problem seems to be the limited amount of available assessments of the productivity development that includes quality (The Swedish Association for County Councils 2006). Assessments that are made of effects, such as avoidable deaths or the prevention of patients suffering unnecessarily, are not taken into account systematically (Ministry of Finance 2005).

Another service productivity issue highlighted in political talk is the development of the view of waiting lists for treatments. By implementing and funding to some extent, a general care guarantee of a limited waiting period in 2005, politicians have shown that they regard waiting time as a problem. According to this guarantee patients might choose either their home county hospital or another if the home county hospital lacks the necessary resources.

The arguments brought up in this introduction points at symptoms of low development of service productivity as well as an indication that the old 'meaning' of productivity seems to irrelevant for health care, which indicate a need for analysing possibilities for developing service productivity in theory and practise (which is done in Nordgren 2009 a). The purpose with this paper is therefore to discuss the interaction of the customer and the provider in value

[3] A fixed development of productivity is assumed in national economic accounting (Hagén and Hagsten 2006).

creation and between providers in the value creating processes, using free and flowing information (Normann 2001). Second and specific is to find a way, contributing to increased service productivity, for matching healthcare competence in interaction with the patient?

Theoretical framework for service productivity

The proposed theoretical framework is based on the view of health care seen as service; "the application of specialised competencies (knowledge and skills) through deeds, processes, and performances for the benefit of another entity or the entity itself" (Vargo and Lusch 2004, p. 2). It finds its premise in the proposition that the customer is seen as a value creator (Normann 2001, Lusch and Vargo 2006, Gummesson 2007, Prahalad and Krishnan 2008), completed with matchmaking inspired by yield management (Kimes 2000) and agent theory (Eisenhardt 1989). Following Grönroos and Ojasalo´s (2004) service productivity is seen as a function of: *Internal efficiency* (how to do) refers to volume measures, cost control and managing of processes. It is a matter of increasing cost efficiency without decreasing quality. *External efficiency* (doing the right things) refers to the experienced quality and knowledge of the customer and *Capacity efficiency*, which deals with how well the health care capacity is used.

Value creation in healthcare

Due to the incorporation of the value concept, proposed by Normann and Ramirez (1993, 1994), Prahalad and Ramaswamy (2004), Vargo and Lusch (2004) and Grönroos (2006), phrases like "co-creation of value", "co-production" and "value-in use" have become more salient in the service management discourse. The role of the customer as a value creator is articulated particularly apparent for services such as health care (Bitner et al 1997, Prahalad and Ramaswamy 2004, Prahalad and Krishnan 2008, Gummesson 2007). As Gummesson (2007, p. 128) writes "Customers co-create the value of the service to the benefit of themselves and the service provider. Unfortunately, the providers may not see the contribution of this involvement and fail to support it". According to the discourse of health economics as well and in line with Becker (1964), Folland et al (2004) points out that it is the consumer who produces health, when spending time on health-improving efforts. When thinking of health care physical comfort and pleasant reception of the patient will reduce dissatisfaction but 'real' value creation cannot be reached without a satisfactory and trustful dialogue that support and establishes the relation between patient and doctor/nurse (Lindquist and Persson 1997, Nordgren and Fridlund 2001). A reasonable approach for value creation in healthcare therefore is to concentrate on complementing and fitting in with the customers' process and activities (Normann and Ramirez 1994, p. 62-63):

Customers engage in activities to achieve value, not only financial value, but also social, psychological, aesthetic, moral values. Inasmuch as a good supplier is one who helps the customer to create value more effectively, the supplier must be aware that more effectively' may entail reduced cost, but much more as well. It may involve increased speed, quality or reliability; superior enjoyment; greater safety; more meaningfulness; or an almost infinite set of other parameters […]

Because value-creation logic varies from one customer to another, it is a key element in the supplier's job to match the value-creating activities of the particular customer group he or she is addressing, case by case. The focus lies on the interaction between customer and supplier, where the role of the supplier is to complement, to match and fit in with the customers' activity processes. When it comes to the role of the customers they are subjectified, according to the performativity of this discourse, to achieve not only financial value and reduced costs, but also increased speed, quality or reliability; superior enjoyment; greater safety; more meaningfulness; or an almost infinite set of other parameters, whose only common denominator is that the customer and the customer's customers, value them. What is the point is that value co-creation represents an appropriate mode of creative production (Zwick et al. 2008, p. 186), i.e. in contribution to service productivity.

We will now move on analysing value creation in interaction. As far as the patient's are concerned the most crucial value for them is to be listened to and taken seriously (Nordgren & Fridlund 2001) and the meeting between patient and doctor may thus be described as a communicative value creation. As a result, the medical and pharmacological knowledge of the doctor, knowledge that might be out of the customer's reach, needs to be counterbalanced by the fact that the meeting is also a relationship with the aim of producing knowledge.

Normann (2001, p. 124) emphasized how crucial it is for management to organise the value production and to support "the health-giving processes instead of focusing on curing the disease". In these processes customers are subjectified into being active co-producers in public services, becoming responsible for maintenance of health, eating healthy foods, exercising and self-care. The essential concern of the care provider is to match the customer's value creating process, which means to supervise that customers invest their time and skill.

Agent theory is helpful in understanding the process of value creation. It includes the conceptual pair of principal-agent (Eisenhardt 1989), which is used in order to discuss the supporting role of an agent in value creation. The general idea is that the patient in the position of principal actor, delegates her power of decision-making to an agent, who takes

charge of the patient's interests and supports her process on the whole. The patient is expected to hand over the leadership over her process to the agent, who will become a project leader. Responsibility for treatment and medicines, risk assessment and information are delegated from the patient to the agent. Characteristic for the conclusion of the contract is the incomplete and different information, which means that all qualities of the principal and the agent are not known respectively (Folland et al 2004).

In a Swedish health care context it is reasonable to view the district medical officer in primary health care and the doctor responsible for patients in a hospital, as the medical professionals that most resemble the agent position. One of the problems with allowing district medical officers or doctors responsible for patients to take on the roll of agent, is the fact that they are not necessarily equipped, and not deemed to possess, a sufficient amount of motive power to function fully in keeping with the agent theory (Lettvall & Lampou 1999). On the contrary, the positions are deemed to be too weak, and in the case of doctors with patient responsibility, it is doubtful if the concept serves any function, because long non-attendance periods for doctors disarm the possibilities of a satisfactory continuity between the agent and patient. The agents are consequently not considered to have adequate possibilities to be able to support the patient's process. It is unusual to speak of the doctor as being solely responsible for her patient, for example for an 85 year old woman residing in a home for the aged. At a seminar at the Consumer Institute for Medicine and Health (2005-11-17) the former director-general at the Swedish National Board of Health and Welfare, Barbro Westerholm, stated that the organizing of the relationship between patient and doctor is typically characterized by a gliding and blurred division of responsibility. Therefore, there should be one doctor in charge of the patient process, which corresponds to the idea of agent. At the same event a former patient gave a narrative concerning her experiences of becoming the agent of her own process (in "You look so healthy" by von Koch in Cederqvist 2008).

Low accessibility

One reason of low accessibility might be that a system, which produces health care within a fixed frame, and not on a market, will not produce enough health care in proportion to demand (Berry et al 2007). The reason behind this is said to be that a stiff budget system is being used in several county councils in order to regulate the production of care (Nordgren 2003). Due to the regulation there may be a waiting list at the same time as there may be idle capacity, not allowed to use. According to *Views on county councils* (2005, p. 83) there are

indications of a remarkable economic potential within a given frame of resources if all county councils increases their productivity to the same extent as "the best".

Another economic reason to low accessibility might be that the cost structure at hospitals is characterized by high overhead costs for equipment, premises and permanently employed staff. The marginal costs for producing additional treatments and consultations are normally considerably to stay low. Therefore and due to the fact health care services cannot be stored, it is vital to make good use of fixed assets.

A further reason to low accessibility could be that the propellant of the development of the health care services are not primarily directed towards favouring a development of management systems for the coordination of health care events for patients (Anell 2004). Coordination is regarded as substandard and there is a lack of harmonized information that can function as a basis for the matching of health care capacity in interaction between different county councils. The phenomenon is illustrated by the fact that there might be resources available in one county council but at the same time a shortage in another, which is situated in close vicinity (Nordgren 2003). A conceivable method of visualising this potential would be to develop relevant assessments of service productivity for health care units.

That there seems to exist idle capacity can also arise from seasonal variations of the frequency of patients and doctors during a year with tops and downs (Chapman & Carmel 1992, p. 48), while another could be "empty-bed-periods", which signify the time when a hospital bed remains empty, between the discharge of an old and the admission of a new patient or between surgical operations.

Low development of accessibility and continuity can also be connected to the complex structuring of medical work, lack of coordination and underdeveloped integration between care providers (Vinge 2005, Åhgren 2005). Constructions of service are built on efforts and coordination of different health care levels, schedules, positions and competences. A certain structural organisational problem is related to medical work (Vinge 2005) The vertical division of medical services, and the fact that the doctor is organisationally bound to work schedules and fixed positions, leads to failing possibilities of coordination of the care process for the patients, to insufficient consistency and continuity in the doctor-patient-relationship.

The health policies dealing with free choice and guarantees for care seem to have not considered the simplistic nature of the language of choice, when using it in health care discourse (Nordgren 2009 b). They also seem to have overestimated patients' willingness to opt for choice in health care (ibid.). Considering the patient makes a free choice, follows the responsibility for the consequences. However, by devolving responsibility to the patient, the

discourses of choice are excluding the vulnerability, the lack of knowledge, the asymmetric relationship, the dependency and the need for care, as well as his or her varying abilities to make choices. Even if the discourses articulates that a patient has the right to choose, he or she will still be in a position of trust in relation to the professionals, who often make choices on his or her behalf (Nordgren and Fridlund 2001, Mol 2008). For the patient the inadequate coordination of care processes means that she will be forced to assume the responsibility for acting as his/her own care agent (Swedish Government Official Reports 2008: 127, Von Koch 2008). The patient's possibility to choose will be impaired due to the rules governing the care guarantee and freedom of choice being seen as difficult to interpret and overview (Winblad 2007, Swedish Government Official Reports 2008). The effects of medication are seldom reported and the quality records are not publicly available.

One way of developing the service productivity is assumed to be using a care guarantee (2005), which can be summarized using the slogan 0 - 7 - 90 - 90, where the figures symbolise the numbers of days that a patient needs to wait to get access to primary care, a doctor, a specialist, and treatment. (Care guarantees exist in Denmark, the UK, Finland, and Norway.) From the time the patient is given a referral to a specialist, it can take up to 6 months before treatment is administered. Waiting times, however, can be longer than that and vary from county council to county council. If the patient does not see a doctor or begin treatment within this space of time, then he/she will be given the possibility of being offered a referral to another care provider. It is, however, uncertain whether the care guarantee will have a long-term effect on queues and availability and whether it will be binding on the county council. When a patient chooses to use the guarantee, this will generally entail a journey to a care producer in another area. In order to acquire information about the guarantee, the patient can either use a national web portal "waiting times in healthcare - a national waiting times database" or service units (Norén 2009, p. 58). According to Norén (ibid.), there are primarily three reasons for a patient making use of the care guarantee, his/her personal situation – e.g. pain or disability, the possibility of scheduling - which entails obtaining a set time for treatment, and being able to attain a higher level of quality by choosing a care producer in another area. Patients also have the possibility of not using the care guarantee. One reason for this could be the desire to remain within one's own immediate area and experience the security of established relationships.

All in all, the care guarantee is used by a minority of patients in this country, indicating that knowledge of the guarantee is low, that the individual patient prefers to wait, or that the rules governing the care guarantee can be difficult to interpret or that the service offering is

underdeveloped (ibid., Nordgren 2009 b). Weak patient groups experience difficulty voicing their own demands, which is why some county councils organise special navigational functions to support them.

In 2008, against the backdrop of a criticism of the current care guarantee, the government looked into a proposal for statutory regulation of the guarantee, a proposal ratified by Parliament in 2009 with the purpose of reducing waiting times. Each year since 2005, the government has provided financial resources in order to stimulate the county councils into meeting the care guarantee. Despite these efforts, however, the level of availability has not improved (Swedish Government Official Reports 2008:127).

The line of reasoning pursued concerning the inadequate coordination and availability of care, simultaneous to factual support for the existence of scope for rationalization, indicates the need to develop a coordinated care service. Due to healthcare lacking a system for matching capacity, and the fact that there is also a lack of incentives for coordinating episodes of care, difficult and unsure capacity control arises. Long waiting and lead times between care initiatives, due to the inadequate coordination of flows of care between units, entail an increased risk to the patient. They also contribute towards care capacity and man-hours being utilized less effectively, entailing that potential care may go unutilized. The collaboration between various providers also seem to be insufficiently developed, laying claim to lengthy periods of time. This state of affairs is indicated by the county councils lacking joint booking systems and queue lists. As the capacity is not matched, situations arise whereby the patient risks ending up on the "wrong care level" or in a queue, resulting in reduced quality.

Need for matchmaking

The problem description has shown several reasons for the deficient coordination of the care sequence as well as why incentives and systems for using healthcare resources across organisational and geographical boundaries have not been developed thus far. How, then, could a coordinated system for matching be developed? By analysing research into the effects of reforms on choice and the care guarantee (Anell 2008, Nordgren 2009 b), the authors have come to the conclusion that a system for "*Care matching"* needs to be developed, whereby the availability and quality of services could be monitored and whereby the patient's choice of provider is matched using information, advice, and offers. The conditions of matching are:

- the patient's needs, wishes, and participation in the system
- clear national rules governing the care guarantee and freedom of choice
- the reporting of quality registers that are collected and made transparent

- incentives for collaborating across institutionalised boundaries between care units and county councils, both publicly and privately
- coordinated IT systems for information management and administrative support
- systems for matching care services across boundaries
- capacity can be booked within the entire system throughout the entire country

Without an overview of the capacity of healthcare (locally, regionally, nationally), there will be no prerequisites for capacity control between care units within a county council or between different county councils. A system for matching would generate these prerequisites.

Idea

The purpose of "*Healthcare matching"* is to develop an innovative service for matching and booking care services. The point of departure is supplementing, supporting, and matching the value-creating process that the patient him- or herself is a part of (Nordgren 2009a). If a patient applies to a certain hospital, the idea is that he or she will be made an offer, either for this hospital or for another, primarily in the vicinity of his/her home, entailing improved service quality. The service is carried out with the aid of a matching system managed by a professional matching unit. The unit constitutes an independent intermediary between the patient and the producer. By means of matching the available capacity and efforts, a coordinated care service will be offered to the care-seeker and his/her referrers. The system must be able to be used locally (within a county council), regionally (within a region), and nationally (throughout the entire country) and constitute a function for enabling freedom of choice and the care guarantee. The goal is to increase the availability of care, reduce queues, and put all citizens on an equal footing as regards obtaining care throughout the country. Another effect will be the increased utilization of capacity and improved socio-economics.

The idea is, theoretically, based on a combination of service management, yield management, matchmaking, and agent theory. It is also based on national criteria and policies for safeguarding availability, quality, and equivalence for the citizenry.

"Care matching" is envisaged for use as a tool for planning, controlling, and booking care efforts on the basis of matching the available capacity during a given production stage. The service will enable the collaborating care providers and the corresponding care units to match the capacity of the respective unit in relation to the patient's needs, wishes, freedom of choice, and care guarantee. The core of the service entails creating service offerings for care-seekers with needs, offerings that these can choose between on the basis of rules governing choice and the care guarantee. Care-seekers will have the possibility of taking their own initiatives.

As support during the process and on the basis of praxis, the idea is based on the referral procedure, entailing that the referrers participate as agents who support the patient in making a choice with information and counselling (the agent's role is discussed in Nordgren 2008 b). A patient might also be the agent of her own and write her own referral. A service like a care guide should be offered to patients needing and wanting this. In the UK, there are special services like patient care advisers who provide advice, over and above the knowledge which the patient him- or herself is expected to possess, concerning the choice of care provider (patient care advisers, according to Le Grand 2007, pp. 118-119). As Le Grand argues, the idea can be expanded to cover the governance of care plans, support when choosing treatment and planning special journeys, in the case of translation, booking, and using IT systems, and in connection with self-care. It is about coaching the patient, a service function that the insurance companies use regularly (Norén 2009, p. 71.) In Sweden, some county councils and regions have already realized this need and organised functions regarding availability issues such as care guarantee services, care navigation, care guides, or care allocation centres.

Fundamental to healthcare matching is the situation whereby the hospital, or some other care unit that has capacity within a certain area, is able to offer this to another hospital/unit and vice versa. The outcome of the collaboration contributes towards improving the utilization of capacity, eliminating queues, and improving the facilitation of freedom of choice and the care guarantee. The idea has three components:

1. Account for, compare, and match capacity utilization within and between units.
2. Support care units in effectively controlling their existing resources.
3. Create offers of healthcare interactively with the patients.

The idea is that the healthcare authorities, citizens and patients, and care units will obtain opportunities to systematically evaluate the internal and external capacity utilization of their units and obtain support in phasing out queues. The intention is to find the right match with the individual and to avoid mismatches (Lovelock and Wirtz 2007). In "Recept för vården" [Prescriptions for Healthcare] (Cederqvist 2008), the patients themselves describe how they have had to wait, have met the "wrong" physician, have been misunderstood, and have not been considered party to their own care; descriptions which can be interpreted as mismatches and which do not lead to enhanced value creation. It is a matter of avoiding unnecessary deaths and suffering, unwanted waiting times, and helplessness.

Experiences from "similar" services

A service which can provide experiences for the continued development of "Healthcare matching" would seem to be a service, termed medical expenses insurance, offered by insurance companies. The purpose of this service is to provide rapid primary and specialist care to policyholders and, in comparison with the care guarantee, considerably faster. The service works in a similar way with different insurance companies (Norén 2009, p. 61). The service is provided in such a way that "when the policyholder becomes ill, he/she calls a number that is manned 24/7, normally by a registered nurse. The nurse then makes an appointment with a physician who in turn is able to arrange a visit to a specialist for treatment. The nurse is also responsible for the customer's entire course of treatment." (ibid.) The service that the insurance company sells entails the coordination of a chain of care.

Another example is the matching of offers in occupational healthcare to customers via the Internet which is operated by Wellnet (Råstam et.al. 2008). Wellnet's business concept is to provide a web-based e-commerce portal which is used by around 1,200 providers of wellness activities and includes about 5,000 different health services (ibid. p. 8). "Wellnet's task is to inspire, convey, and match the right wellness activities to the right person." (ibid.) All employees of client companies connected to Wellnet are given their own webpages in the portal, with their own logon. Inside the portal, the employee is then able to choose certain providers and services that are preferable. The right activity is matched to each individual. The authors (ibid. p. 30) have created a model that illustrates a smoothly functioning interactive platform which symbolises a market where the users meet the providers.

A third example is Sweden's Healthcare Advice Centre which provides care-seekers with advice by phone, recommending the patient to use self-care, primary care, specialist care, highly specialized care, or emergency care.

The UK has been using, since 2008, the electronic booking system 'Choose and Book', which is an aid enabling patients to freely choose a specialist at clinics throughout the UK 'at the point of referral', once the GP has written a referral. Appointments are made on a special website once a referral number and password have been obtained.

Market, stakeholders, and incentives for participation

"Healthcare matching" addresses healthcare authorities and individual care units/organisations (hospitals, local health service organisations etc.) throughout the country. As stakeholders, owners, production managers and commissioners, accountability and industry bodies, citizens, and patients up and down the country can be identified. Other

stakeholders include insurance companies which procure coordinated initiatives on behalf of employers and/or policyholders (Norén 2008).

For the service to work well, right-way-round incentives for healthcare authorities and care providers will be required. If we initially take the situation that care matching is applied **within** a county council (and thus nor between county councils), then the incentive structure would probably look as follows. The healthcare authority, i.e. the county council in its capacity as a financier, has very strong incentives to apply the model since the overall capacity utilization can be assessed to increase and queues decrease without costs needing to rise. To the extent that the state will, in the future, be financially rewarding county councils that meet the care guarantee, this will also act as an incentive for the authority to apply the model. Healthcare providers whose capacity is not utilized will also, of course, have good incentives for entering the model as their capacity utilization will then be able to improve and thus also their profitability (this assumes that the care provider obtains a not inconsiderable part of its reimbursement in the form of performance-related reimbursements, e.g. per hip replacement operation). Healthcare providers that have reached their capacity ceiling and have queues can be envisaged as getting rid of some of their demand and thus some of their future income. Their incentives to join this are limited. However, this is a problem which should be manageable. The healthcare authority has, of course, the possibility of deciding that the public care providers will be part of the model. In order to retain its clients, the care provider will quite simply have to rationalize its production, otherwise these will turn to another care provider without a queue (assuming that there is no agreement regarding guaranteed volumes or similar). The healthcare authority should be able to apply the same approach to the private care providers whose services it uses, i.e. set conditions to join the model with no guaranteed volumes. It should be noted that this entire line of reasoning is based on the care providers being reimbursed, to a significant degree, by means of performance-related reimbursements. It is also a pre-requirement that the county councils do not prop up unprofitable public healthcare providers. In the case of financing through government grants, the financial advantages for the county councils will not be achieved.

When it comes to collaboration **between** county councils, things are more complicated. Why should a county council with queues enter the model if that means being forced to phase out production on its home ground? Here, one should argue on the basis of several different aspects. Firstly, the queues faced by the county council's patients will decrease. Secondly, this can entail sharing in future state money in order to stimulate the county councils into meeting the care guarantee. Thirdly, this can be a rationalization tool vis-à-vis the county councils'

own units which, if they are not efficient, will lose patients to healthcare providers in other county councils. The same approach should be applied by the county councils to both county council run and private producers. However, we should be clear about the fact that other aspects can enter the picture for the county councils, e.g. availability aspects (the wish to retain care providers regionally) and that it takes time and is political costly to close units down etc. A special discussion applies to how costs are assessed. If it is more expensive – per operation or other measure – for a county council to use the services of care providers (without a queue) outside of the county council in question, compared to using the services of care providers from the county council in question (with a queue), then it can be more expensive overall, due to this, for the county council to join the model.

A special question applies to the procurement rules. County council A has no contract to use the services of private care companies which only have a contract with county council B.

The effects of "Healthcare matching"

Our assessment is that a realization of the idea will contribute towards increasing the level of availability for care-seekers as well as the possibilities of citizens up and down the country to receive equally good healthcare. As mentioned in the introduction, "service productivity" has experienced weak growth during recent decades. The potential in the form of better utilized capacity is assessed to be good and should be illuminated through developed factual descriptions linked to value creation and key ratios, including the utilization of capacity.

As "Healthcare matching" is based on solutions in collaboration between the care matching function, the referrer, and the patient, it contributes towards adapting the range to need and demand. States of under- and over-capacity are balanced by matched services providing the supportive data for control. The system thus develops, on an organisation- and owner-independent basis, interaction in the local or regional healthcare system by means of incentives for collaboration (see above).

"Healthcare matching" generates the supportive data for innovative service research in several fields since the idea accommodates interaction between actors involved in care who have varying backgrounds, goals, and know-how and who meet to conduct joint efforts. The collaboration and the situations that are created thus bring to the fore issues concerning organisations' identity and relationship with the strategic collaboration's identity creation and the co-worker's identification processes, which are related to sense making, motivation, and loyalty, of great significance to the development of the collaboration. A second field concerns the patient's decision-making situations, knowledge and ability, will and mobility, and

participation in the “matching process”. How does the value creation of the patient occur and what support is needed in order to be able to use information and offers? A third field concerns the departure points for and control of the system’s effectiveness.

Healthcare matching should be applicable as in the case of county-wide divisional organisations, collaborating university hospitals and county hospitals, and commissioners of care in order to control and manage deregulated care whose production is carried out by different producers under different management.

Some conceivable models and tools that can be used include a capacity chart for coordinated booking within and between connected producers, models for developing production optimization, organising customer offers and facilitating comparisons, and tools for designing and controlling composite care processes, where lead times can be predicted and controlled, the chain of responsibility clarified, and coordination opportunities secured.

Summary and strategy for implementation

The defective matching and use of a misleading productivity concept forms the departure point for outlining the possibilities of developing service productivity adapted to healthcare with the support of the concepts of value creation, the yield management method and matching, and the agent perspective. Building on the developed view on service productivity the head point is outlining the condition for a matching system in order to better match the available capacity both in and between healthcare units in order to meet and support the value creating process of the customer (the patient), with the aim of eliminating queues. An overall aim for the providers should be to match the value creation process of the customer.

As current the structure and incentives in healthcare do not contribute towards realizing the efficient utilization of capacity within and between care units and across county council boundaries, or towards creating the equal availability of care throughout the country, the need thus exists to develop a new service - “Healthcare matching”. Organisationally, the service is based on one organisation for collaboration, which is responsible for comparisons of key ratios and the coordinated booking of capacity. The clients of the organisation are the care units that have chosen to take part in and use the system. The organisation collaborates with providers as well as IT and logistics companies. An information system containing various modules is being developed with the aim of making comparisons between care units and providing the supportive data for matching capacity and offers to care-seekers.

Appendix

Questions related to the organizing of healthcare

- What the service offering will encompass (by whom and to whom?)
- What will this entail for the respective level within the organisation?
    - Decisions required in relation to decisions about a control/production model?
    - Roles during the task process
    - Impact of financial decisions
    - Actions of hospital management and production-responsible clinics
- Elucidation of values for the respective level above
- Organizing of administrative processes
- Parts of the operation included in matching
    - Inquiry, physician level
    - Diagnostics
    - Measure
    - Follow-up check/rehabilitation
- All in all, “Healthcare matching” supplements current care choice models.
    - What will it entail joining the system from an all-inclusive perspective?
- Political effects
- How will change effects be managed in the event of
    - Reduced production within certain units
    - Increased production within certain units

The organisational form and financing will be assessed in parallel. Subsequent to that, a business plan will be drawn up comprising:

- A development plan for systemware. A prototype containing fictitious data for visualisation will be produced ahead of validation and presentation to the client.
- A plan for the advanced development of the business concept.
- Development costs
- Market establishment
- Reimbursement model between stakeholders in future operational situation

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