



The healthcare industry - Using IT to adapt
to forced changes

Healthcare facilities face the challenge of delivering more patient care with a smaller budget. The demand for care is rising, because of the aging population and lifestyle diseases such as obesity, high blood pressure, and heart disease. The higher demand causes rising costs for hospitals and other healthcare facilities. Between 2006 and 2012, the expenses for hospital patients increased 20 percent, to 20 billion euros.

The political solution for controlling healthcare cost is the introduction of market dynamics. This boundary condition invites individual healthcare facilities to renew their care proposition. The leading experiment is an open market with a free choice for the healthcare consumer. This model empowers insurance companies to prod healthcare providers to optimize.

Boosting the quality of care

In the perspective of market dynamics, healthcare is a service industry. Hospitals will challenge themselves to deliver goal-oriented, economical and effective care to their patients. This development toward more productivity and lower costs is driven by the insurance companies, through incentives such as volume requirements and demanding shorter length of stay. The purpose is clear: the best care for patients, at a lower cost. But it is impossible to make the changes at once, system-wide. The execution is a challenge for the healthcare facilities.

When we view healthcare as a service, the measure of the value of a treatment shifts from the healthcare provider to the patient. The new healthcare system aims to increase the value for the patient. We take the overall result of the care provided, measured against the costs for the patient. We take the disease of the patient as a point of origin so that we can compare the added value of each treatment.

The value for the patient is quantified according to:

$$\text{patient value} = \frac{\text{care safety} + \text{care outcomes} + \text{service}}{\text{cost}}$$

This formula interprets the “care outcomes” as a combination of less mortality, fewer complications and fewer errors in the processes. The formula is a useful lens for managing the improvement of hospitals and other care facilities.

Over the next few years, the hospitals, general practitioners, specialists, and insurance companies will lead the improvements. Besides changes in strategies, structure, and culture, a major success factor will be the use new IT solutions.

“Decision makers in the healthcare industry will have to try their utmost to find new solutions. A large portion of these solutions will depend on new information technology (IT).”

The rise of one-and-a-half line patient care

One-and-a-half line patient care is a combination of primary care, initiated by the patient himself or herself, and secondary line specialist care, which depends on a referral. It combines the low threshold and accessibility of primary care with the specific knowledge of secondary line care. This combination works well in the care of the chronically ill and the elderly.

One-and-a-half line patient care has a low threshold, just like primary care, but it makes the specific knowledge of the second line available. This allows the patient to receive care from a specialist, after a referral.

One-and-a-half line patient care is enabled by the integration of chain partners, such as the general practitioner, pharmacist, caregivers, and specialists. One-and-a-half line patient care is usually directed by the general practitioner and requires the support of new technology. Besides the rise of one-and-a-half line patient care, more tasks of the second line are performed by the primary line. This trend is enabled by the integration of the chain and by technology.

The consequence of market dynamics and competition

Since healthcare has become an open market, healthcare providers - about 90 hospitals and 270 independent clinics - have become exposed to the free market. Hospitals and other healthcare facilities are looking for new and better ways to deliver patient-focused healthcare.

The free competition makes healthcare providers think about a suitable and defined range of care propositions for patients. They will distinguish themselves with a niche and specialties, to reach a stable position. The healthcare providers will become more different from each other, which enables the patient to decide which facility can provide best for his or her needs.

As healthcare suppliers, hospitals are pressured by insurance companies, and as customers, they are pressured by Medical Specialist Companies (MSBs). The specialists are now organized in businesses and deal with the hospital as a group. The hospital has less control over them than over employees. Just like the insurance companies, the MSBs defend their interests.

Healthcare providers have to adapt to the interests of every stakeholder: the patients, the insurance companies, and the medical specialists.

”The rule is called ‘market dynamics’, and all the players in healthcare will have to adapt.”

Forced optimizations are troubling the staff

Healthcare professionals try to realize the cost savings by finishing a case of treatment within a given number of hours. They strive for a quick diagnosis, which is often not discussed with colleagues or the patient. They do this because the insurance company demands this to qualify the treatment for coverage. Also, the staff is burdened with more red tape. These practices worry many healthcare professionals.

There is also trouble at the organizational level. Care professionals might be wondering:

- who can be made redundant
- whether they will be able to adapt to a relocation
- what the new team composition will be after a reorganization

These concerns lead to a lack of embedding and support among colleagues.

Management aims for cost reduction to keep the organization financially viable, while maintaining the quality of patient care. Urgent issues are solved ad-hoc, but managers often don't have time to organize the teams. The care professionals have to handle supporting tasks themselves, although this is not an efficient use of their time.

The challenge to achieve sustainable quality

The healthcare industry is concerned with economic considerations. There are fewer resources available for the human side and the substance of the profession. Personnel of hospitals and other healthcare facilities try to work efficiently and with awareness of costs. However, the quality of care is at risk.

IT opportunities for healthcare providers

Every industry uses IT to cut costs and to develop new capabilities. Within the healthcare industry, IT can be used both within the organization and to interact with the customer.

Standardization

The healthcare industry is fragmented in departments, practices, and facilities. These parties are autonomous but have to work together for optimal care propositions. That is why they have to align the 'production process' with each other.

In the manufacturing industry, specialized companies coordinate to deliver large-scale and complex work. They make this possible with a standardized infrastructure and platforms for cooperation and buying. The healthcare industry can learn from this example.

Examples of standardization are the integration of software packages with the electronic patient records, and coordinated transport of patients.

Exchanging medical records

A hospital relies on hundreds of different IT systems. Patient records can now be exchanged within and between hospitals. However, in practice this is a challenge because of differing data formats. Many different IT systems support logistical and data streams, teams, communication, and the service of types of data. The communication between older systems is often

impossible. These systems are unsuited for the support of multidisciplinary healthcare and cooperation between institutions.

A new IT infrastructure with integrated systems will make the right information available, at the right time and place.

Easing the burden of administrative tasks

IT system can automate common administrative tasks, saving time.

Examples include:

- fewer double entries of patient records;
- using software for faster and more complete communication;
- avoiding human error with fewer manual steps.

Decouple knowledge from physical actions

Within the manufacturing industry, it is good practice to optimize physical actions and information independently. Healthcare relies on knowledge and information too. That knowledge is, at the moment, tightly coupled with physical actions. Decoupling is a big opportunity for hospitals and other healthcare facilities.

Current IT solutions for medical practice

Improving internal communication

Hospitals are home to individual medical professionals organized in teams, departments, divisions, practices, and partnerships. The team can only excel when internal news, schedules, and materials are distributed well.

New media channels are much more effective at this. Narrowcasting and digital signage solutions spread the relevant news to targeted groups, through several channels. Mobile applications combined with TV screens placed at departments, keep people better informed.

Online appointments

Many patients have to visit the hospital often, which takes time and poses a logistical burden. Some consults and treatments can be done at a distance by phone or video conferencing. Care professionals can plan their appointments without the help of secretaries.

M-health and telemonitoring

Mobile applications and wearable sensors can help with a fast and accurate diagnosis, by collecting vital parameters on autopilot. The doctor can detect symptoms early on, and give information and coaching from a distance.

Connected health and collaboration technology

Collaboration technology can connect care professionals with other care providers or patients, or patients with their local caregivers. They can share information safely at a distance, and analyze data together.

RFID tags

RFID technology helps with efficiency, patient safety, and transparency. Research within operating rooms and intensive care departments shows that RFID can follow the movements of care professionals, patients, materials, and blood products.

The cost saving potential of IT in healthcare

The traditional way of reducing costs often means that one cuts the number of services on offer. But IT enables a better possibility: cost reduction, but without loss of quality. Hospitals and other healthcare facilities can use IT for the optimization of processes and information flows, to work together in new ways. The time won back can be used again for the care of patients.

“IT frees up the hands of care professionals so that they have more time and attention to spare for what matters most: the treatment of patients.”

The potential cost savings by using IT within the current healthcare environment are between 2.0 and 6.1 billion euros per year. These amounts represent 5.2% to 10.5% of the healthcare expenses in the Netherlands. It is up to individual decision makers with the healthcare industry to realize these cost savings.

- There are scenarios in which IT applications reduce the emergency care of chronically ill patients by 70%.
- It is possible to make 55% of the communication between care professionals and patients virtual, instead of face-to-face.
- Clinical personnel is expected to have 33% more time available for individual patients.