

1 The Silent Revolution

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The people of Switzerland are content with their healthcare system. In fact, they are so content that they do not want to change anything about it. In its *Health 2020* report¹, the Federal Council stresses that “its own” healthcare system is one of the best in the world. This assessment is shared by the OECD and others. Additionally, it is not even among the most expensive systems anymore. The satisfaction with the system is exceptional, because in many countries, the population is very critical when it comes to their healthcare system. The Swiss electorate outvoted any proposed changes to its system several times in the recent past. It is tried and tested: Availability and accessibility for all demographic groups are excellent. The education in the medical professions is very good as compared to international standards. Everyone has health insurance and is well-covered.

So why did we write this book? What more do we want?

Although everyone is happy with the status quo, there is still potential for improving quality, while lowering costs at the same time. The aforementioned report *Health*

1 *Gesundheit 2020*, Bundesamt für Gesundheitswesen (Federal Health Office), approved and published in January, 2013, by the Federal Council.

2020 admits that the quality is not transparent enough; sound quality data is not available. Maybe there is something more we could want. And if there is not, well, even a satisfactory situation can always become a better one.

In this book, we will demonstrate how to make the hospital a better place for both patients and their family. First and foremost, this means a radical patient focus and an obsession with patient safety. In the end, this will also lead to lower costs, because hospital staff and employees no longer need to spend much of their time correcting mistakes – of their own and of others. Another reason for lowered net cost is that we focus on giving the patient what he or she needs, when they need it. Patients will love the new hospital because it will be a safer place, a place where they will feel cared for and looked after. Staff and caregivers will love it because there will be less stress and less pressure in their workday. And the public will love it because they are used to customer-oriented businesses and processes in other areas of their lives. The hospital should no longer be exempt from providing services at a comparable level.

Lean is a concept that provokes skepticism when applied to the hospital context. The first reaction is resistance. To some, it sounds like a thinly disguised cost-cutting program. Others criticize that *Lean* treats patients like manufactured goods. None of this is true. *Lean* leads to a hospital which takes better care of its patients, and they feel the difference. *Lean* focuses on the patient, their family members, and the added value of staff performance. This makes the daily routine smoother, leading to significantly fewer stressful situations. Consequently, this is the basis for safe health-care and treatment. Patients and their needs are given priority. Saving money is not the prime incentive. Those hospital executives who gathered experience with *Lean* say: “We do it for our patients and our employees.” Incidentally, productivity increases, which is a welcome bonus. By now, all leading American hospitals follow a *Lean* strategy. *Lean Hospital* revolutionizes the delivery of medical services within the hospital. There are many convincing examples to prove this, like the Virginia Mason Medical Center (VMMC) in Seattle, WA, the world’s leading hospital in the application of the *Lean Hospital* concept.

There are many misconceptions about *Lean* concepts. The three most common ones are:

1. Patients are not cars

Virtually all hospitals that follow a *Lean* strategy employ the Toyota production system. An obvious argument for a skeptic would be that a concept from the automobile industry cannot be applied to the medical treatment and care of human patients. Of course patients are not cars. On the other hand, it is important to realize and appre-

ciate the impressive progress the automobile industry has made due to the introduction of the *Lean* philosophy. Think of safety, reliability, environmental sustainability, and not the least, productivity. Will patients be placed on the assembly line now? That is not the goal. An assembly line is not a requirement for efficient performance; it is merely a prop that helps create a constant flow of services.

Patients may not be cars, but they appreciate not having to wait endlessly in dismal hospital corridors, they appreciate having the services come to them, instead of vice-versa. Incidentally this has been the official strategy of the National Health Service in the UK since September, 2013. When all services come to the patient, patient safety increases.

2. *Swiss hospitals have “different” patients*

Those who criticize the concept believe that *Lean* is only useful for simple diagnoses. They are wrong. *Lean* is a powerful method for managing complex situations. These critics confuse *Lean* with simple assembly-line dispatch. Some of the most successful tumor centers, such as the Memorial Sloan Kettering Cancer Center in New York City, employ *Lean* methods to improve their processes and to develop new construction projects.

They were able to improve pace and safety dramatically. Even more importantly, they were able to better pool and focus services, much to the benefit of their patients. Now they can provide their patients with an individual treatment plan within 36 hours (including a complete diagnosis, tumor board, and resource planning). Patients are human beings; their needs are similar all over the world. Their conditions may vary depending on cultural context, but basically, human beings are genetically very similar.

Switzerland has a high number of aged and geriatric patients. They suffer from chronic diseases and comorbidity. For this group of patients especially, *Lean* is a boon and a blessing. Its focus on patient safety ensures that their hospital stay does not further endanger their fragile health. *Lean* fosters collaboration among team members, and leads thus to an integral focus on the patient.

3. *Lean cannot be applied to a hospital context*

There are consultants who share this misconception. They are convinced that the Toyota production system needs to be translated and transformed twice: first, into the logic of the service industry, and then into that of the hospital environment. This generates many hours of consultation.

But it also works in a much more direct way, which has been proven by first-class hospitals. The Toyota philosophy focuses on the customer, on flow and on safety. Not much is added by making costly translations to existing methods. The fastest way to learn is to study those who have already realized *Lean* projects successfully. For example, the VMMC in Seattle has come a long way. Under the leadership of CEO Gary Kaplan, the hospital has undergone an astonishing transformation. It developed from a financially stricken hospital to the national “champion” in the prestigious *Leapfrog* ranking. In their comparison of more than 5,000 hospitals, the VMMC scored highest, regarding both quality and cost efficiency. We will deal with the VMMC’s success story in detail later on.

Lean is a promising answer to many of the challenges hospitals are confronted with. The four central ones are:

- health and medicine as a system
- patient safety
- customer expectations
- cost effectiveness



fig. 1 The Lean Package

Medicine as a System

When you enter a Swiss hospital, you experience strange things. You meet specialists with an excellent education in diverse professions: doctors, nurses and caregivers, dietary cooks, physiotherapists, and so on. Some of them are among the best in their respective fields, and deserve your highest regard. And yet the net performance of services provided for the patient is riddled with shortcomings and defects. Why is this? The hospital as an organization is currently in the process of a massive transformation. Medicine is becoming a highly cross-linked system output.

Various forces drive and enable this development. The most important one is medical and technical progress. Many of the new diagnostic and therapeutic methods presuppose a sophisticated cooperation of knowledge, technology, processes and infrastructure. Experts from different professions and disciplines must work together to employ these methods successfully. Standardization is a vital basis for any systemic service. It helps reduce complexity, and without standardization, things that could and should be clear need constant reiteration and agreement. All of this entails a massive cultural shift.

A sophisticated systemic service is marked by three characteristics:

1. Services are geared towards adding value for the patient. The patient always comes first. Accordingly, the principle must be: Patients get what they need, when they need it. Systemic service delivery works when everyone gets what they need, not when everyone gets the same. That is both cost-efficient and patient-centered care.
2. All staff and employees work together in structured ways. They practice team medicine. Everything is coordinated and synchronized. Ideally, all services are standardized. This is an important basis for treating every patient individually. Standardization of treatment paths, processes, materials, pharmaceuticals, equipment, technologies, and platforms (OR, ICU etc.) usually meets a lot of resistance, especially from specialists, but is indispensable as a first step. It is the only viable tool for managing a complex system.
3. Quality is integrated into the processes. Every service is monitored and checked separately, ideally at the time when it is delivered to the patient. This approach makes it easier to identify and remedy quality defects.

In summary: The modern hospital is a highly complex entity, and has to develop into a functioning system in order to meet future demands. Standardization is an essential requirement for the success of this transformation.

The Hospital – An Unsafe Place

Many patients are not aware of the fact that a hospital can be an unsafe place. In September 2013, the “Journal of Patient Safety” published a meta-analysis² that came to an alarming conclusion: Mistakes made in US hospitals are the third most common cause of death, second only to cardiovascular diseases and cancer. The study assumes that the number of avoidable deaths in American hospitals approximates at least 210,000 cases annually. That is five times the number of traffic-related deaths.

The main problem is a lack of communication between the different professions and disciplines involved. A lot of things are not regulated, which leads to constant queries and arguments, as well as erroneous handoffs. Standardizing communication reduces the frequency of errors. The problem is a notorious one, yet resistance against dealing with it is immense. Experts refuse to accept standardization. They prefer to develop a procedure model for each individual case.

That is neither necessary nor safe. Errors and malpractice create suffering, engender stress and pressure, and cost a lot of money. Patients are not the only aggrieved parties, errors affect employees also. Many caregivers – including an increasing number of doctors – leave their jobs because they feel burnt out. Feelings of inadequacy are widespread. The deficits the involved parties have to deal with do not leave them unaffected. They may have gotten used to them over the years, nevertheless they still suffer every single day. According to safety experts, a hospital has an estimated defect rate of two to three percent.



To illustrate: Three out of every hundred patients are hurt or injured during their stay in the hospital. If this error rate was transferred to a Boeing 747 flight, 12 passengers would exit the plane with a condition they did not have when they boarded it. At least one passenger would not survive the flight.

Looking at Switzerland, the number of errors a larger Swiss hospital produces per year equals a plane crash resulting in 400 deaths. The hospital sector is obviously not a safe industry. In the manufacturing sector, companies perish as soon as their defect rate is higher than 0.5%. Hospitals are getting away with a significantly higher rate.

² James, John T. (2013): A New, Evidence-based Estimate of Patient Harms Associated with Hospital Care

In summary: The modern hospital is a highly complex system. This leads to a higher propensity for errors. Rising complexity increases the cost of hospital services and constantly demands more from all stakeholders, often overburdening them. If the problem is not addressed at its root, the costs rise disproportionately.

Patients Are Customers

Hospitals like to claim special status for themselves, as if they were exempt from the laws of the world. There are several arguments for this, none of which are convincing. One is: Patients are not customers because they are in need of help, and therefore they are emotionally handicapped. If your car breaks down in the middle of nowhere at night and you are in need of help, you might act a little irrationally, but that does not mean that you need to completely surrender control to some unknown roadside assistant. A second argument claims: A doctor has to help any patient, even if in some cases this may conflict with their economic interests. This is supposed to be exemplary and customer-oriented behavior. A service-oriented customer service representative would act the same way.

The tables can easily be turned on that line of argumentation: We suspect that it is simply more convenient not to view the patient as a customer. If the patient is not a customer, you may safely let him or her wait. If the patient is not a customer, you do not have to let them know what went wrong.

The widespread attitude is: “We made a mistake; the patient must not know anything about it.” There is, of course, nothing wrong with being aware of the special responsibility you have towards the customer “patient”. But you have to act on that responsibility, too. Patients have become more discriminating in recent years. They expect a lot, sometimes even too much. What they can expect in any case, what they are entitled to, is sincerity.

“Affordability” – The New Debate on Cost-Effectiveness

For many decades, cost effectiveness was only a marginal concern of the people in charge of hospitals. All services were paid for, especially in Switzerland. Money was no object, even if the public was of a different opinion. Quite the contrary: There were incentives for being the most expensive. Partly, these incentives are still in place today.

In the wake of the financial crisis of 2008, cost trends finally became a topic. What type of healthcare system can we really afford? In a system where everyone was en-

titled to healthcare services, this question had not been asked. Now hospitals are suddenly called upon to realize a profit margin. Some representatives of the system still discuss whether or not a hospital ought to strive for profit. Of course it needs to, for how else can it make investments?

The survival of hospitals is on the line. They cannot properly prepare for future demands and challenges, because their own culture prevents them from doing so. The core problem is the current self-presentation as a smorgasbord of “workshops” that many hospitals exhibit. Its source may be found in the history of the hospital as an expert organization.

The Hospital as an Expert Organization

To their patients, members of the medical profession define themselves as experts in their respective fields. Their specialized individual service – their discipline – is in the foreground. The hospital is an expert organization, no doubt. And as such, it follows its own logic. So far, each expert has needed their own, individually outfitted “workshop” in order to deliver their services. In addition they need some workshop subsidiaries to assist them. This is the way hospitals have been functioning for many decades. It is possible to view the hospital as a conglomerate of individual workshops, in which the different experts – doctors and caregivers – work on the patient with the aid of their assistants. But that leads to a lot of handoffs from workshop to workshop. Patients and their treatments are becoming increasingly complex. In many cases, more than one expert is needed.

This is Where Mistakes Happen

Handoffs are risk points if the procedures between interfacing units are not standardized.

Experts do not function in the same way that industrial workers do. Experts identify with their discipline. This behavior has many advantages, but also a few disadvantages. Experts dislike interference. They stress their autonomy. It is virtually impossible to convince experts that they have to do their job differently. They would have to come to that conclusion by themselves, or else they would not be experts. Many of them overburden themselves with this kind of attitude. Wanting to make every decision autonomously leaves them overloaded in the end. Another issue is the expansion path experts are often on. They want to further their discipline and like to stress the importance of their particular field.



Therefore the biggest challenge is the necessary cultural shift from a doctor-centered to a patient-centered hospital.

What Follows the “Workshop” Organization?

Where does the journey lead when the hospital as a “smorgasbord of workshops” has reached a dead end?

The keyword is “systemic service”. Some individual disciplines have already developed in the direction of a systemic service. One example would be the treatment of tumor patients (see above). For the treatment to be successful, the cooperation of many experts is essential. Developing a systemic service equates to creating a new and more efficient collaboration between putting the collaboration across disciplines, professions, technologies and infrastructure. Patient safety is endangered by the traditional principle of “everyone does it the way they think is best”. The first step lies in realizing this, and thus working to establish common standards.

Some doctors, caregivers and hospital managers have already developed a passion for *Lean*. They have discovered the potential provided by Toyota methods. The transformation that leads to reliable medicinal services entails a lot of hard work. You need tenacity because you will be met with resistance. Where are you going to find the motivation to go through with it? You do it mainly for your patients, because *Lean* results in safer medicine. Fewer people will be hurt or injured, and medical services become much more patient-friendly. With the elimination of waste, resources are freed, and better service can be provided. You will have more time for the patients. New medical procedures can be offered and applied more quickly. You work from a safe and sound basis. Daily routines runs more smoothly, and there is less stress. Working at a hospital will be more satisfactory.

The hospital will become a better place for patients, their family members and the employees alike. In short: *Lean* is worth the trouble, because it pays off.