

# Hospital

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## IMPO A NEW WORKING MODEL FOR THE EAHM

### Plus

Managing in Times of Crisis

Driving Operational Improvement

Supplement: Operating Room

Supplement: Safety

Focus: Luxembourg, Lithuania

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# JOINT RESPONSIBILITY...



Willy Heuschen

The annual conference of the European Public Health Alliance held during the Lithuanian EU presidency demonstrated that disparities in the physical health of the population of EU member states are ever more increasing. For instance, one statistic showed that restrictions in actively pursuing one's way of life either due to disease or death is increasing in countries with low to moderate incomes. By now, this rate is twice as high in these countries as it is in higher-income nations. It was also ascertained that the current financial crisis suffered by the member states does not only negatively impact the economic situation. It also restrains the health coverage and has sustained negative effects on health systems as a whole.

Apart from this observation, the EU Commission's working paper pinpointed other factors influencing citizens' physical states of health. These are manifold and comprise factors concerning education and training as well as employment, levels of income and life style choices. It seems obvious that all factors mentioned interact with each other. In this working paper the Commission appeals to all countries and their healthcare stakeholders to employ targeted actions and investments in order to decrease these health disparities in the long run.

As hospital managers it is also our duty to improve our citizens' health status and thereby support social cohesion – for instance, via the range of services offered at our institutions. The daily practice of hospital management shows that the above-mentioned disparities might easily exist in one's own country or even in the catchment area of the hospital. Anybody willing can observe the social divide of a population in any emergency hospital department. We are also aware of the fact that the austerity measures currently implemented in so many countries place an additional financial burden on patients. It goes without saying that for some patients this might imply a limited access to healthcare services. On the other hand, hospitals too are forced to operate in the red, if they want to secure their current stan-

dard of services and continue to do so in the future. This in turn is most commonly associated with further investments to keep up with developments in the fields of medicine and medical techniques alike.

It is hospital management's job to efficiently negotiate this balancing act between social responsibility and economic efficiency of the institution – short-term as well as long-term. You can read about these issues in detail, and how the EAHM supports its members in these challenging and manifold tasks. The 24th EAHM congress, which we will cover in this issue, is a perfect example of mastering the balancing act. Reports on IT applications in medical technology, as well as management of an operating theatre contain numerous helpful tips.

Furthermore we are pleased to introduce the IMPO-model, which we will be using as the working method of the EAHM in the future. As you can read in detail, IMPO offers a global acquisition of hospital managements and flags up connections as well as various aspects to be considered during assessment. On the basis of national and social guidelines, the INPUTS, it clarifies that all activities in a hospital should be patient-orientated and focus on social responsibility, which is also the stick by which it should be measured. Management and processes, doctors and employees in the daily routine hereby constitute the hospital's central motor. By means of this model we as the association believe we have brought forth an enriching programme. It is our conviction that IMPO is an ideal approach to let hospital managers learn from each other and to strengthen them in their responsibility for patients and social cohesion.

Willy Heuschen

EAHM Secretary General  
Editor-in-Chief



The editorials in (E)Hospital are written by leading members of the EAHM. However, the contributions published here only reflect the opinion of the author and do not, in any way, represent the official position of the European Association of Hospital Managers.





## IMPO

The hospital care environment is changing as our hospitals, under increased pressure and scrutiny, strive to maintain and improve quality of care with reduced budgets. For this reason the EAHM has been working hard to develop a new working model for the association to help shape future activities and to better serve its members. Our cover story presents the model- IMPO: Inputs, Management, Processes, Outcomes.

## Operating Room Supplement

This issue our supplement focuses on one of the most expensive areas of the hospital: the Operating Room (OR). As usual, there is one copy for you and one to pass on to the relevant department. Van Essen et al. introduce a new decision support system to help OR managers successfully adjust their ever-changing OR schedules. The news section covers issues such as new technologies, teamwork and the effect of background noise on surgical team communication. The final article looks at the different ways to keep your OR sustainable.

## Safety Supplement

As safety is of top priority for patients, clinicians and managers alike, this issue we bring you a supplement dedicated to the topic. As usual there are two copies: one for you and another to pass to on an interested colleague. Stephen Leyshon et al. ask why healthcare of all sectors struggles with risk and emphasise the benefits of a data-driven, preventative approach to risk management. Agnoletti et al. look at safety in the operating room and Percy Stubbs delves into the hot topic of safety-engineered medical devices.

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**Focus: LUXEMBOURG**

In honour of our upcoming EAHM Congress in Luxembourg we take a closer look at the country and its hospitals. The Federation of Luxembourgish Hospitals (FHL) groups together hospitals in Luxembourg, defends their occupational interests and promotes all progress in the hospital sector including the wellbeing of the patient. In recent years the FHL has been particularly active and has restructured its work for hospitals into a platform for interdisciplinary exchange and close cooperation between medical, nursing and administrative activities to create operational and strategic plans.



**Focus: LITHUANIA**

Currently, a new Lithuanian Health Programme 2020 is under development. The programme aims at improving population health through safer social environment, healthy lifestyle and effective healthcare. It is being designed with a "health in all policies" approach by building and strengthening partnerships with other related sectors, transferring and giving more responsibility for population health.

# EAT FRESH WITH SUBWAY®

## Healthy Food for Staff and Visitors

World-renowned brand SUBWAY® is making its mark in the healthcare sector. The leading quick service restaurant now has more than 250 stores inside healthcare facilities offering quick and healthy meal solutions at reasonable prices. A SUBWAY® franchise in your facility can ensure flexible food options for different times of day for both staff and visitors. A SUBWAY® store is simple and efficient operation with low installation costs, allowing you to focus your resources on your core business: providing quality patient care.

Caroline Thomson, National Accounts Representative for SUBWAY® UK and Ireland explains how it works:



**When we think about SUBWAY® we think of a place to grab a quick lunch while in the city or at the shopping centre. How did the idea of setting up Subway stores in healthcare facilities first come about?**

Hospitals and healthcare facilities are teeming with staff and visitors, all of whom are working different shift patterns or visiting whenever they possibly can to fit with schedules. With this in mind, staff and visitors need something quick, easy and tasty to eat when they get a moment, the SUBWAY® brand was an obvious fit for this.

A key focus of the SUBWAY® brand is on non-traditional locations. These include petrol stations, university campuses or hospitals and convenience stores.

Due to the simplicity of the operation, there is an adaptable approach to the size and physical layout of its stores. Outlets can be as small as 32,5 m<sup>2</sup> and still carry the full menu. The format also means that

staff levels can be increased at peak times and downscaled during quiet periods. A SUBWAY® store can also maintain a full range of products, maximising sales throughout the day, whilst managing wastage. Unlike traditional food outlets, there is no need for grills or fryers in a SUBWAY® store.

**How many healthcare institutions in Europe currently house a SUBWAY® franchise?**

The SUBWAY® brand has two locations in the UK within healthcare institutions, one with Sodexo and one with Aramark. There more currently in the pipeline.

Worldwide the SUBWAY® brand has over 250 stores within healthcare institutions. Within Europe the brand is beginning to see the benefits of partnering with a quick service brand that has nutritious options for today's health conscious customer.

“The cafeteria at Shands Hospital was over capacity, so the organization decided to add an atrium food court with a variety of food options. An employee survey revealed the high preference for a sub sandwich restaurant, namely SUBWAY®, that was designated to run 24/7 to offer the night shift healthy options as well. And I personally liked their healthy products, which align with hospitals' missions and goals of disease prevention.”

William Notte  
Former Food Service Director  
Shands Hospital at the University of Florida  
Gainesville, FL



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**Prevention and wellbeing are now top priorities for European hospitals; can a chain like SUBWAY® really promote the healthy eating agenda?**

The SUBWAY® brand is a nutritional leader in the Quick Service Restaurant industry. To date the SUBWAY® brand has endorsed four of the UK Government's Responsibility Deal Pledges, committing to:

- Reduce salt
- Eliminate trans fats
- Display calorie information on menu boards
- Reduce calories across the product range and improve access to fruit and vegetables as part of a healthy, balanced diet.

The SUBWAY® brand offers a range of Low Fat Subs and Flatbreads, all of which contain less than 3g of fat per 100g. The Low Fat Subs and Flatbreads are also low in saturated fats - containing less than 1.5g of saturated fats per 100g. All of the SUBWAY® brand products have been free from partially hydrogenated vegetable fats and oils, and therefore artificial Trans Fats since 2009.

The Low Fat range of Subs is easily identifiable in-store by a Healthy Heart symbol, showing they are supported by a national heart charity, Heart Research UK. The SUBWAY® brand's goal is to offer a variety of great tasting Subs that are lower in calories. As of 2012, none of the core 6" Subs exceed 600 calories and at least 67% of the core 6" Subs will contain fewer than 400 calories.

**What are the benefits of having a SUBWAY® restaurant in your healthcare facility?**

The outlets are efficient, convenient and provide a quick service, which draws a steady flow of customers – creating energy and a beneficial atmosphere.

The benefits of incorporating a well-known brand within a healthcare facility decreases the level of stress associated with a new project. The affiliation with a successful brand is one of the main appeals for many non-traditional site operators. The solid support structure offered by the SUBWAY® brand, has meant that today 70% of all new SUBWAY® franchises sold worldwide are awarded to existing owners.

A SUBWAY® store will provide made-to-order, tasty Subs throughout the day, servicing those working at or visiting the healthcare facility. With a wide selection of options available, a SUBWAY® store provides a popular food choice.

**I don't have the time, resources or staff to set up my own SUBWAY® franchise. Are there any other options?**

There are other options yes, you can earn rental income by leasing the space for a SUBWAY® store to an experienced SUBWAY® franchise partner. This option affords the healthcare facility all the benefits of having a SUBWAY® store onsite, but the SUBWAY® franchisee will build, equip, maintain and operate the store. In addition the store can extend the hours of food service by catering to the night shift and visitors.

**CONTACT INFORMATION:**

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Tel.: +44 289 444 2429



“ We thought a branded concept would assist our opportunity to increase revenue. When it first opened, the hospital realized a 50 percent increase in revenue over what it was achieving with the previous arrangement. ”

Paul Donnelly  
Director of Food and Nutrition  
St. Agnes Hospital, Baltimore, MD



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## 2<sup>ND</sup> JOINT EUROPEAN HOSPITAL CONFERENCE

After the success of last year's first Joint European Hospital Conference, EAHM is again joining forces with the European Hospital and Healthcare Federation (HOPE) and Association of European Hospital Physicians (AEMH) to hold a second conference.



The next Joint European Hospital Conference will take place on Friday November 22nd 2013 in Düsseldorf (Germany) as part of the 36th Deutsche Krankenhausstag at Medica 2013.

Divided into two parts, the morning session follows up on last year's conference with presentations and discussions on the European Directive on Patients' Rights while the afternoon will focus on innovation access in Europe's hospitals.

### Implementing the EU Directive on Patients' Rights

Andrzej Rys, Director of Health Systems and Products at the European Commission will present on the conditions for the implementation of the Directive. Following this, presenters from Sweden, Hungary and Spain will discuss their experiences in establishing the national contact points stipulated in the Directive.

Xavier Brenez, CEO of the National Federation of Independent Health Insurance Funds, will examine how national healthcare systems can prepare for implementation and the session will close with a discussion on how the European reference networks fit the national structures. Representatives from Germany, Poland and Portugal will share the situation in their respective countries.

### Innovation Access In Europe's Hospitals

The afternoon session turns to innovation, a key topic in the healthcare sector. To kick things off Serge Bernasconi, CEO of the European Medical Technology Industry Asso-

ciation (Eucomed), will present an overview of the benefits of innovative medical procedures and products in Europe and the key decisions to be made.

Moving on to innovation in practice, representatives from the UK, France and Italy will highlight the decisions and benefits of innovation in healthcare. This will be followed by a panel discussion.

Approximately 150 – 170 top decision makers from Europe's hospitals are expected to attend. All presentations will be translated simultaneously into English, French and German.

Congress Time: 10.00 h – 16.00 h

Attendees will have a chance to network over lunch and also during the evening reception in Dusseldorf.

**For more information, please visit:**  
[www.medica.de/EHC2](http://www.medica.de/EHC2)

## 43<sup>RD</sup> ORDINARY GENERAL ASSEMBLY



ASSOCIATION EUROPÉENNE DES DIRECTEURS D'HÔPITAUX  
EUROPÄISCHE VEREINIGUNG DER KRANKENHAUSDIREKTOREN  
EUROPEAN ASSOCIATION OF HOSPITAL MANAGERS

Thursday November 28th, 2013

8:30– 9:30.

Congress Center, room D,  
1 rue du Fort Thüngen,  
L-1499 LUXEMBOURG

### Agenda:

1. Approval of the agenda
2. Approval of the minutes of the 42nd Ordinary General Assembly, held on Friday November 16th, 2012 in Düsseldorf.
3. EAHM activity report 2012–2013 by the President
4. Tendering of accounts for 2012
  1. Presentation by the Secretary General
  2. Auditors' report
  3. Approval of accounts for 2012 and discharge of the Board and the

Secretary General

5. Economic plan for 2014
  1. Approval of the proposed membership subscription fees of full members and associate members (4.3.e of statutes)
  2. Approval of the economic plan for 2014
6. Election of auditors for the year 2013
7. Admission and exclusion of members
8. Next Ordinary General Assembly 2014

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## NEW FRONTIERS: ENSURING SUCCESS FOR THE IRISH HEALTH SERVICE

The Health Management Institute of Ireland (HMI) held their annual conference in the Gresham hotel in Dublin. Over 200 delegates attended the informative event with the theme of "New Frontiers: Ensuring Success for the Irish Health Service".

Derek Greene, President of HMI, opened the conference welcoming delegates and thanking the speakers for taking time out of their busy schedules to share their experiences. Greene stressed the need for strong leadership in Irish healthcare.

Secretary General of the Department of Health Ambrose McLaughlin gave the opening address, emphasising that

ICT and pharma.

The conference was split into three main themes: 'healthcare leadership', 'breaking the mould' and 'working together for success'.

### Healthcare Leadership

Tony O'Brien, Director General of the Health Service Executive opened the session on health service leadership. Shirley Cramer, CEO of the Institute for Health Management and the Royal Society for Public Health spoke about leadership and culture. She emphasised the importance of looking after the health workforce and managing across the system.

### Breaking the Mould

The breaking the mould session took a look at things from a different perspective. Prof. Mark Ferguson, Director General of the Science Foundation of Ireland focussed on the power of innovation and the potential Ireland has in this area. Catherine Whelan, from the Independent Hospitals Association of Ireland looked at alternative hospital models. Explaining the current situation in the private sector, Whelan emphasised that both private and public hospitals are experiencing many of the same challenges.

### Working Together for Success

The final session of the conference was a panel discussion entitled 'Working together for success' featuring a number of National Directors within the Health Service Executive (HSE). The Directors of Clinical Strategy and Programmes, Primary Care, Acute Hospitals and Social care each discussed the key priorities for the delivery of services within their directorate. A common theme was the importance of working together to develop synergies to provide more efficient services.

### Rising to the Challenge

Closing the conference, Derek Greene urged delegates to get involved and to rise to the "challenge placed on our shoulders". He stressed that the work of healthcare managers can, and will, make a difference. Greene added that the work of the HMI goes beyond the annual conference and encouraged delegates to get involved in regional meetings and find out more about the new leadership awards and research activities.

**For more information, please visit:**  
[www.hmi.ie](http://www.hmi.ie)



**Photo.** (from left to right) Gerry O'Dwyer, Gerard O'Callaghan, Richard Dooley, Lucy Nugent, Eamonn Fitzgerald and Derek Greene

the end goal for healthcare in Ireland is access based on need and not income. Extolling the virtues of the Healthy Ireland initiative, McLaughlin believes it is a brand to help grow jobs and health and well-being in Ireland. Health managers play a key role in this transformation. He also spoke of the plans for the university system to unite with the health system as a partner, creating innovation in terms of medtech,

Bill Maher introduced his vision, values and performance of the recently formed West/North West Hospital Group. He highlighted the challenges and opportunities of these hospital groups from his own experience, citing holding board meetings in public and managing by walking around as two great ways of learning more about your hospital/group/community.

For photos and videos of recent events please visit [myhospital.eu](http://myhospital.eu)



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# CAN NON-PUBLIC RESOURCES RELIEVE EUROPE'S CASH-STRAPPED HEALTH BUDGETS?

**US expert Prof. Richard B. Saltman offered an alternative, if not controversial, solution to European healthcare's difficult financial situation at this year's European Health Forum Gastein. Unconvinced that increased efficiency will be enough, Saltman suggested that a new social contract was needed in healthcare with more input from the private sector.**

"Globalisation is one of several reasons to be pessimistic about the European economies – budget deficits, growing levels of national debt, and high taxation rates are others", Richard B. Saltman, Professor of Health Policy and Management at Rollins School of Public Health, Emory University, Atlanta, told the Health Forum in October. "Despite the fact that most healthcare in Europe is paid for and provided by the public sector, there has so far been surprisingly little discussion about how health policy-makers should respond to such a severe, almost certainly long-term downturn in economic fortunes." Many previous assumptions had to be rethought, said Prof Saltman. Efficiency savings would not be enough to square the circle: "The implications of a prolonged lack of economic growth for the future of European healthcare systems are severe. Demand from an ageing population and increased costs created by new clinical, pharmacological, pharmacogenetic and information technologies will put additional pressure on health spending." If recent improvements in quality, safety, and access are to be maintained, either non-public sources will need to be marshalled, or providers will need to deliver more services for substantially less money.

## **Shifting Health Activity Away from the Public Sector**

"New non-public money will need to be found, and some publicly-delivered services will need to be supplanted by informal care from family or private services,"

said Prof Saltman. It was not just a matter of reorganising existing public health systems, as had been tried before, "but of shifting some health-related activity out of direct political and financial, but not regulatory, control by the public sector."

How this would work in practice would vary greatly between countries, the expert said. In general terms, fundamental structural change along four inter-related dimensions was needed to meet the challenge of austerity and create a consistent, financially viable strategy: "A substantial part of the costs of care will have to be shifted away from the state, and state regulation needs to be simplified to make it more effective and less costly", Prof Saltman argued. "Also, patients, their families and local communities have to be made responsible for more care, and the role of private employers in prevention and care programmes should be increased."

Such essential rebalancing public sector versus other forms of responsibility must maintain the core "social insurance" function of the welfare state, he said. This will mean support for those on the lowest incomes is maintained, but everyone else would have to carry considerably greater responsibility for their own care. Such a transformation will, Prof Saltman said, involve a new social contract which reverses the social logic of post-second world war Europe, with the state expected to provide both reliable finance and ever greater equity of access to healthcare. Such over-reliance on the state was, he said, unrealistic in a time of slow or no-growth, with the only safeguard against falling standards being substantial non-state financing and provision of care.

## **Incentives to Stay Healthy and "Actuarial Fairness"**

Most European health systems have not seriously considered financial incentives

for healthy behaviour; some indeed have rejected them as unacceptable. In the US, by contrast, it has become common for private companies to require that employees who smoke pay substantially higher health insurance premiums, and to offer reduced insurance if employees join programmes such as for weight- and cholesterol reduction. Prof Saltman: "Moderate attempts at actuarial fairness with regard to behavioural risk factors are a potent way of reducing overall health costs."

The goal, the expert said, was not to create a US-style health system "with its multiple overlapping, inconsistent, and often inadequate levels of publicly-unplanned funders and providers." But failing to encourage parallel sources of funding is in his view irresponsible at a time when publicly-funded health systems, as presently structured, look unsustainable. "There will inevitably be the unintended consequences that typically accompany major health system reform," Prof Saltman conceded. "State regulation of private sector actors is complicated and expensive. Private sector providers, especially for-profit, are not uniformly more efficient or of higher quality than well-funded and well-managed public institutions. These potential disadvantages will need to be weighed against positive outcomes that can be achieved in terms of long-term sustainability as well as quality and access."

"Resilient and Innovative Health Systems for Europe" was the slogan for this year's EHFG. More than 550 participants from some 45 countries attended Europe's most important health policy conference in Bad Hofgastein to exchange views on key issues affecting European health systems.

Reference: Richard Saltman, Zachary Cahn: Restructuring health systems for an era of prolonged austerity. *BMJ* 2013; 346.

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# ULTRASOUND IN BREAST BIOPSIES

## RESEARCH AIMS TO IMPROVE COST-EFFECTIVENESS

When performing breast biopsies doctors often need to combine MRI and ultrasound to obtain tissue samples with a fine needle, as around a third of tumours are invisible to ultrasound. Imaging takes place inside the MRI scanner, and the biopsy needle is inserted separately when the patient is outside the scanner. This process is often repeated several times before the sample is finally taken. This exhausts patients and is also costly in terms of scanner use.

In the MARIUS project (Magnetic Resonance Imaging Using Ultrasound – systems and processes for multimodal MR imaging), experts from the Fraunhofer Institute for Biomedical Engineering IBMT in St. Ingbert and the Fraunhofer Institute for Medical Image Computing MEVIS in Bremen are working towards a quicker and gentler alternative.

The new technique would require just one scan of the patient's entire chest, with the subsequent biopsy guided by ultrasound. Doctors would have both the live ultrasound scan and a corresponding MRI image available to guide the biopsy needle and display exactly where the tumour is located.

The biggest challenge is that the MRI is performed with the patient lying prone, while during the biopsy she lies on her back. This change of position alters the shape of the patient's breast and shifts the position of the tumour significantly. To track these changes accurately, researchers have found a novel solution. While the patient is in the MRI chamber, ultrasound probes attached to the patient's skin provide a succession of ultrasound images. This produces two comparable sets of data from the two separate

imaging techniques. When the patient undergoes a biopsy, the ultrasound probes continually record volume data and track the changes to the shape of the breast. Special algorithms analyse these changes and update the MRI scan accordingly. The MR image changes analogously to the ultrasound scan. When the biopsy needle is inserted into the breast tissue, the doctor can see the reconciled MRI scan along with the ultrasound image on the screen, greatly improving the accuracy of needle guidance towards the tumour.

Fraunhofer researchers are developing a range of new components to realise this vision, including an ultrasound device that can be used in an MRI scanner, ultrasound probes that can be attached to the body to provide 3D ultrasound imaging and new software.

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# INTRODUCING IMPO

## A New Working Model for the EAHM

The hospital care environment is changing as our hospitals, under increased pressure and scrutiny, strive to maintain and improve quality of care with reduced budgets. For this reason the EAHM has been working hard to develop a new working model for the association to help shape future activities and to better serve its members. This article presents the model-IMPO: Inputs, Management, Processes, Outcomes.

### Consultation and Workshop

The idea took shape in early 2013 and the long consultation and development process is still in progress. Following an initial presentation during a meeting in May 2013 (Amsterdam), the Executive Committee approved the IMPO model and a large consultation of the National Associations, the Subcommittees as well as the partners began. The IMPO model was presented to the Subcommittees in June and July and the national associations have been invited to discuss the IMPO model and provide their feedback via a questionnaire.

National associations were asked to discuss each aspect of IMPO in detail and inform us of their key inputs (both internal and external) and processes in hospitals in their country along with information on the current management models used and how hospitals measure their outcomes.

The consultation process culminated in the EAHM's first internal workshop held on the 21st of October in the EAHM offices in Brussels. The workshop saw members of the Executive Committee and EAHM subcommittees (Scientific, European Affairs and Editorial Board) come together to discuss and refine the working model. A significant number of members attended the workshop representing a wide range of European countries and many fruitful discussions took place. The main results from the workshop can be found later in this article.

Speaking at the internal workshop, EAHM President Heinz Kölling explained how the IMPO model is a natural progression following on from the reflection process of 2010. The results of the reflection process highlighted four key focus areas for the EAHM: corporate identity, quality, tools and training. These areas dependent on the active involvement of the national associations and partnership agreements with the industry. With the model, these areas get the support of a framework which will help in the future development of those activities in a coordinated way.

Kölling stressed that IMPO must be not

only a roadmap for the EAHM but also for the successful future management of our hospitals and so for our citizens and European society.

### The Changing Hospital Environment

The hospital care environment has always been in a constant state of evolution; the changes seem never-ending. In recent times these changes have been intense, especially in light of the financial crisis with hospital budgets being significantly reduced. There is an appeal for healthcare reform across Europe and demographic change means hospitals are faced with the demands of an ageing population. At the same time patient expectations are increasing. Some of these changes in the hospital environment have a more direct impact on the management of the hospital.

### Why a New Working Model?

EAHM is aware of the many changes in the healthcare sector and their impact on hospitals and hospital managers in particular. As our hospitals adapt and evolve so must our association. As we all know, the first objective of the EAHM is to promote the professional competence and responsibility of hospital managers (statutes article 1.3.a). The association fulfills this role through the work of the Executive Committee, the Subcommittees, congresses and seminars and the publication of *(E)Hospital*. Throughout these activities the three main themes have been the mission, governance and quality:

- The mission of hospitals and related to this the mission of hospital managers;
- The governance of hospitals and particularly the relationship with doctors; and
- The management of quality in hospitals and healthcare

The theme of the 2010 EAHM congress in Zurich was "Roadmap to Top Quality" and discussion of quality has continued with last

year's seminar on crossborder healthcare. In terms of governance the EAHM conducted a European survey with Prof Kristof Eckloo and the Scientific Subcommittee is working on the mission of the hospital and of hospital managers in particular.

As in the IMPO model, the three main themes are connected. Each theme influences the other; the mission of hospital managers and the management of quality in hospitals are not separate worlds, on the contrary, quality is becoming more and more important in the missions of hospital managers. Furthermore the (changing) hospital environment has an impact on these themes, e.g. legislation on hospital governance and patient expectations on quality management. Future work on these themes will be integrated into the IMPO model.

### Understanding the IMPO Model

As hospital managers we must first understand this changing hospital environment and the consequences. We must also learn from it. IMPO is a tool to learn from the changes for better management of our hospitals. In this way IMPO is a working model for the EAHM, to define its work programme and subsequent activities.

IMPO will be used to manage the activities of the association and also to reflect on the management of hospitals. IMPO is a working model for EAHM and its activities. It can also be used in managing a hospital, but this is not the first objective of IMPO. The model is not tailored to the context of a specific hospital but we are convinced that IMPO can help to reflect on the management of hospitals.

Nevertheless the objective of IMPO is not to evaluate the hospital management and thus it is not intended as a replacement for current evaluation methods but to examine the causalities between external and internal inputs and outcomes by taking into account management and processes.

Inspiration has been drawn from other models such as the Donabedian model (for eval-



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uating quality of care) and the EFQM model (for encouraging excellence) but IMPO is different from these models.

The Donabedian model starts from structure, which includes all the factors that affect the context in which care is delivered. With IMPO, we prefer to start with inputs, which have a broader meaning and are more dynamic (like in terms of input-output systems). Furthermore, the term structure is often confusing e.g. with governance structure.

EFQM is a management model for organisations whereas IMPO is a conceptual model for healthcare organisations and its management. As in EFQM, we agree that leadership is an important element in the management of organisations. On the other hand, and as an association of hospital managers, we have to differentiate between management and processes. At the same time we have to emphasise the important interaction between the two.

### IMPO: A Working Model for EAHM

The working model is composed of four pillars:

- I** = Inputs
- M** = Management
- P** = Processes
- O** = Outcomes

The following considerations should be taken into account when speaking about IMPO and its pillars:

- O:** • The outcomes should be patient centered (containing all the effects of healthcare on patients or populations) and should be of societal or macro-economic relevance.
  - They should also be measured in terms of accountability and added value.
- I:** • Inputs are all that is brought externally & internally into the organisation.
  - External inputs are for example regulation, finances, progress in medicine, relationship with companies in the health market etc. These external inputs are transformed into internal inputs by management, applying the regulations, by allocating financial priorities etc.
- P:** • Denotes all the activities taking place directly or indirectly during the delivery of care to the patients (diagnosis, prescription).
- M:** • Management defines priorities, the mission, the objectives and the strategy of the hospital as well as the inputs and the framework for the execution of

processes steered by management.

- Management is a specific process. While processes of the daily work are performed by (medical) staff of the hospital management oversees the execution of those processes.
- Management includes leadership. It uses leadership but also followership in running the processes.

The 4 pillars are brought together in the following way:



First of all, the pillars I P O are on the same level but with a different size and colour, showing that Inputs are to be converted into Outcomes through Processes. Attention should be first given to the Outcomes (biggest size and strongest blue), followed by Processes and then Inputs.

The M is not only covering the P, it is wider than the P and has one leg between the I and P, but is of course also involved in the outcomes.

These four pillars are interconnected in different ways, for example:

- As indicated, Management differs from Processes of the daily work. But there is a strong link and interaction between both in such a way that they cannot survive apart: they are the operational heart of the hospital.
- Inputs have an impact on the other pillars of model. For example, public expectations will influence the way we look to the outcomes. Disruptive change of technology will have an impact on the processes.

Many more interconnections can be identified, but this goes beyond this introduction to the IMPO model.

### Workshop Results

The purpose of the workshop was to translate the IMPO-model and its concepts into the centre of activities of EAHM. This was done in

### IMPO

IMPO integrates the four components relevant in running hospitals and therefore underlines the need for a global approach to hospital management. By using this model we can prioritise topics to be elaborated or documented that are relevant in terms of outcomes and that need to be approached under the scope of management and processes.

two steps by three discussion groups; one for each official language of EAHM.

First we brought the management viewpoint to the foreground while looking to the other IMPO-pillars: Outcomes, Processes and Inputs. Secondly, we steered the discussion from the context of the hospital to the national, European level and finally to the level of EAHM. As a preparation for this workshop national associations were invited to give input to the workshop through a questionnaire.

Delegates broke into the language groups to discuss IMPO and how it relates to their experiences, respective countries and also Europe as a whole. After this, the chairs of each discussion group collated this information and presented it to delegates. The main findings are as follows:

#### Outcomes:

Participants agreed that the most important outcomes for hospital management can be summarised in the "Iron triangle": quality, cost and access.

Patient satisfaction, perception of hospital in the media and innovation were also mentioned as examples of outcomes.

#### Processes:

The discussion on processes highlighted that in order to ensure access to safe and high quality care, attention has to be devoted to structure, process, organisation, quality & capacity of staff.

Management has already a broad range of tools and approaches to steer the processes like project-, risk-, and workforce management. Monitoring is also an essential task for the management.

Given the impact on the outcomes, infection control and hygiene has become more and more of a priority on the national and European agenda. But in order to be successful, the direct participa-



tion of the hospital management is required.

Also logistics and supporting departments shouldn't be overlooked.

**Inputs:**

Many inputs of importance can be identified, from public health to trade unions, from immigration to changing demography without forgetting financing, public health policy making and health regulation. The discussion groups highlighted that inputs are not always positive, for example social fraud. Inputs can be strategically oriented, like planning or co-operation (private – public, in all its combinations). Also, through the implementation of Directives, the European Union is becoming more and more involved in healthcare.

Furthermore PEST (Political, Economic, Social, Technological) has been mentioned as a systematic framework for analysing external factors that are applicable to different countries.

**Management:**

Management has to ensure that the aims and objectives set are achieved. Professionalism of the hospital director and the staff is crucial to guarantee this. This might include co-opera-

tion with external partners, private-public provision of healthcare and funding, leadership and co-operation within the hospitals, co-creation of adequate financing system etc.

**Global IMPO model:**

Participants agreed that the IMPO model helps to develop a common language. It will also help to improve the professionalisation of healthcare managers.

The IMPO model may lead to a classic vision on how to organise healthcare but has to potential to look in a broader way. A global vision which looks at the particular illness/conditions of the patient from the beginning to the end and thus asking for integrated care will have an impact on the processes and outcomes. Therefore it was suggested to provide a plan for implementing the IMPO model, starting with the most crucial pillar, the outcomes.

**Next Steps**

Many recommendations have been formulated regarding the EAHM-activities using the IMPO model. These will be presented

to the Executive Committee during its meeting in Luxemburg just before the EAHM congress. The outcome of the discussion and decisions by the Executive Committee will be shared with you during our congress in Luxemburg and in the next issue of this journal.

**Authors:**

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Secretary General/Editor-in-Chief EAHM

**Jos Vanlandyut**

Assistant to General Secretary EAHM

**We Would Like Your Input!**

What do you think of the IMPO model? Does it relate to your experience in your hospital?

**Please join the discussion at [www.eahm.eu.org](http://www.eahm.eu.org)**

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# HOSPITAL MANAGEMENT IN TIMES OF CRISIS: CONSTRAINTS, CHALLENGES AND OPPORTUNITIES 28-29 NOVEMBER 2013 - LUXEMBOURG

We are pleased to jointly welcome you to Luxembourg for the 24th EAHM Congress. We have chosen this year to focus on "Hospital Management in Times of Crisis: Constraints, Challenges & Opportunities".

Many people strongly believe that funding is the crucial factor of the effectiveness. When the economy is weakened and the hospital budget reduced, what can a hospital manager do to continue to deliver better care?

We will discuss these constraints but as well as challenges and opportunities. We believe that a crisis may serve as a "wake-up call" that prompts the hospital to make beneficial organizational and structural changes. The 24th EAHM Congress, which will gather recognized experts in the field of management, will develop strategic guidelines, business process reengineering and of course new technologies. The 24th EAHM Congress's target is focus on areas where strong leadership makes the difference.

Sessions will be focused on practical means to preserve or enhance care quality even in the face of flat budget. Roundtables will give the opportunity to share the best practices and discuss their added-value. On the exhibition, healthcare professionals will provide in-depth insight into the latest developments in healthcare.

The official Congress languages are English, French and German. All lectures will be simultaneously interpreted into these 3 languages.

We hope to see you all at 24th EAHM Congress in Luxembourg and invite you to register via our website:

[www.eahm-luxembourg2013.lu](http://www.eahm-luxembourg2013.lu)

This event is organized by:



## THE KEYNOTE SPEAKER



Joël de Rosnay

«Technological Evolution, Economical Crisis and Hospital Management of the Future»

Country: France

Title: Futurist, Science Writer, and Molecular Biologist

Institution: President of Biotics International

Joël de Rosnay, Docteur ès Sciences and scientific writer, is presently President of Biotics International, a consulting company specialized in the impact of new technologies on industries, and Special Advisor to the President of the Cité des Sciences et de l'Industrie at La Villette of which he was Director of Forecasting and Assessment until June 2002. From 1975 to 1985 he was Director of Research Applications at l'Institut Pasteur (the Pasteur Institute in Paris).

Former research associate at the Massachusetts Institute of Technology (MIT) in the field of biology and computer graphics, he was successively Scientific Attaché to the French Embassy in the United States, and Scientific Director of European Enterprises Development Company (a venture capital group) from 1971 to 1975.

He is particularly interested in advanced technologies and the applications of system theory. On these subjects, he wrote : "Le Macroscopie" (1975), "Les Chemins de la Vie" (The paths of life) (1983) and "Le Cerveau Planétaire" (The planetary brain) (1986). As well as several reports, namely : "Biotechnologies and Bio-Industry" (1979), an annex to the report "Sciences de la vie et Société" by Professors Gros, Jacob and Royer. He was also co responsible for the report which led to the creation of CESTA (Centre d'Etudes des Systèmes et des Technologies Avancées / Center for the study of systems and advanced technologies, 1982).

# CONGRESS INFORMATION

## OVERVIEW

The EAHM Congress is held every two years in an European country and is a platform for exchange of views on professional matters between hospital managers. It also offers the opportunity to network. This year, the Congress will focus on how to deal with economics constraints and transform them into opportunities.

The 24<sup>th</sup> EAHM Congress is organized by FHL.

### SUBJECT

«Hospital Management in Times of Crisis: Constraints, Challenges & Opportunities».

### DATES

The Congress will be held on 28 and 29 November in the New Conference Center Kirchberg (NECK) Luxembourg.

### REGISTRATION

Registration for participants and accompanying guests is open via the congress website: [www.eahm-luxembourg2013.lu](http://www.eahm-luxembourg2013.lu) Till 20 November

### ACCOMMODATION

Participants can book their hotel rooms online now. Plan your trip with a few clics: [www.eahm-luxembourg2013.lu](http://www.eahm-luxembourg2013.lu) > Hotel Booking

### SOCIAL PROGRAM: 28 - 30 NOVEMBER

Before, during and after the Congress, accompanying guests will have the opportunity to enjoy a rich program of social events:

#### THURSDAY, 28 NOVEMBER

Cultural visit around the Europe Square - Luxembourg - Kirchberg (13.30 - 17.00)

Reception at City Hall (evening)

#### FRIDAY, 29 NOVEMBER

Visit Luxembourg - City Tour & City Promenade (13.30 - 17.30)

Gala Dinner & Show at Casino 2000 in Mandorf-les-Bains (evening)

#### SATURDAY, 30 NOVEMBER

For Congress participants & accompanying guests we offer an additional tour to Luxembourgish wine region and the Christmas Market in Trier, Germany (10.00 - 17.30)

### POSTER SESSIONS

Will be dedicated to «Restricting Means While Improving Clinical Patient Outcomes, Yes We Can!».

The best 3 posters will be granted respectively 3,000 €, 2,000 €, 1,000 € to stimulate professionals and researchers in their work.

### HOSPITAL VISITS: 27 NOVEMBER

You will have the opportunity to discover patient care organization, discuss the added value of latest technologies in medical protocols and share experiences and best practices with professionals.

### EXHIBITORS

At the exhibition, healthcare professionals will provide in-depth insight into the latest developments in healthcare.

### FOOD & DRINKS

Catering stands will be situated in the Congress area during the coffee and midday breaks. Food and drinks are included in the price of the Congress.



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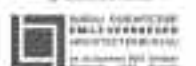
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21<sup>st</sup> October 2013, Brussels, Belgium



**Photo 1.** EAHM President Heinz Kolking giving his opening address



**Photo 4.** Members of the English language discussion group (Victor Herdeiro (PT), Jos Vanlanduyt (BE), Lucy Nugent (IE), Ann Marie O'Grady (IE))



**Photo 7.** Freddy Lemants presenting the key findings from the French language discussion group



**Photo 5.** The German Discussion Group in Action (Marc Hastert (LU) and Heinz Kolking (DE))



**Photo 8.** Jacques Scheres informs delegates of the results of the German language discussion



**Photo 2.** Secretary General Willy Heuschen presenting IMPO - a new working model for the EAHM



**Photo 6.** Louise McMahon presenting the results of her discussion group



**Photo 3.** Members of the French language discussion group hard at work (Gianfranco Finzi (IT), Ugo Luigi Aparo (IT), Phillipe Blua (FR), Freddy Lemants (BE))



**Photo 9.** Delegates at the EAHM's first internal workshop

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# HOSPITAL MANAGEMENT IN TIMES OF CRISIS

## Constraints, Challenges and Opportunities

By Edyta Gurgul

Many people strongly believe that funding is the crucial factor for effectiveness. When the economy is weakened and the hospital budget reduced, what can a hospital manager do to continue to deliver better care? The 24th EAHM congress in Luxembourg will discuss these constraints and also the many challenges and opportunities our hospitals face today. We believe that a crisis may serve as a “wake-up call” that prompts the hospital to make beneficial organisational and structural changes.



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Yes, it is time again for another EAHM congress. This year the congress will be held in Luxembourg on 28-29 November. The EAHM and the FHL (Fédération des Hôpitaux Luxembourgeois) have been working hard to develop a comprehensive programme on the important topic of hospital management in times of crisis. This article takes a closer look at the programme and highlights the numerous reasons why you should attend.

The congress, which will gather recognised experts in the field of management, will showcase strategic guidelines, business process reengineering and of course new technologies. The focus will be on areas where strong leadership makes the difference.

Sessions will be focused on practical means to preserve or enhance quality of care, even in the face of a flat budget. Roundtables will give the opportunity to share best practices and discuss added-value. On the exhibition floor, healthcare industry representatives will provide in-depth insight into the latest developments in healthcare.

The congress is divided into three sessions:

- Strategic Guidelines in Crisis;
- Business Process Re-Engineering; and
- New Buildings, New Logistics, New Technologies.

### Strategic Guidelines In Crisis

During times of crisis it is essential that hospital managers adopt a strategic management approach not only to minimise disruptions to day-to-day operations and ensure sustainability, but also to embrace

new ways of working. Integrated management with clinicians as partners, joint ventures, strong financial management and effective communications are all key factors for success and the first congress session, Strategic Guidelines in Crisis, will present new ideas and ways of working.

Speakers in the first session include Dr. An-



drew McCormick, Permanent Secretary of the Dept. of Health, Social Services & Public Safety, Northern Ireland (UK), who will discuss the opportunities for the transformation of care in Northern Ireland. Dr. Peter Lachman, Deputy Medical Director at Great Ormond Street Hospital (UK), will question whether the underlying principles of healthcare management need to change in an age in which the needs are being redefined. Ms. Irmtraut Gürkan, Head of Administration at Heidelberg University Hospital (DE), will share her opinion and experiences on corporate management and relevant requirements for economic leadership to fulfill the growing expectations and needs of a non-profit organisation. Mr. Yves Nosbusch, Chief Economist at BGL BNP Paribas (LU), will talk about macroeconomic outlook and implications for financing and investment decisions and Mr. Simon Scrivens, Managing Director-Healthcare at Sodexo (UK) will develop the concept that healthcare providers can contract with third parties to drive not only value, but also support clinical outcomes and patient experience. Mr. Eric de Roodenbeke, Ph.D, CEO of the International Hospital Federation (IHF) (CH) will inform delegates of a new international competency framework

for healthcare managers.

The roundtable will focus on financial crisis and efficient communication.

### Business Process Re-Engineering

Process management plays a key role in designing patient care as effective, secure, efficient and future-oriented. That's why the hospital's management should regularly question the organisation of core business and support activities (management, logistics, etc.) as well as the merits of its practices inherited from existing structures and uses in the profession. As demonstrated by many studies in the field of health or otherwise, there is always, even in the most successful organisations, potential in terms of efficiency that should be implemented to the benefit of patient's needs and competitiveness of the health organisation concerned. Session two addresses this idea of business process re-engineering.

Highlights of this session include "Process Reengineering in Hospital" presented by Dr. Jens Peukert, CEO of Lohfert & Lohfert and Dr. Dominik Utiger, Director of Hirslanden Klinik St. Anna AG. Dr. Katarzyna Mazur - Hofsäss, President of Zimmer EMEA (CH) will discuss whether medtech companies are suppliers or partners. Mr. Mads Nybo, Chief Physician at Odense University Hospital (DK), will highlight how to optimise your lab in times of crisis and Mr. Florian Kainzinger, Managing Director at Labor Berlin (DE) will discuss his experience of laboratory supply for 10,000 hospital beds. Safety is another key topic within this session and Dr. Peter Gausmann, Managing Director at Gesellschaft für Risiko-Beratung (DE) will lecture on clinical risk management and the insurance industry.

The second roundtable of the congress will feature a discussion on change management aptly entitled, “Manage the change, change the management”.

## New Buildings, New Logistics, New Technologies

Our world is constantly changing. Even outside the context of the crisis, we are constantly faced with new challenges in changing technologies and practices. This trend is particularly noticeable in the work carried out within the EAHM. European hospitals and their managers share the same concerns and the same problems and exchanges of views are essential to make the right choices. Technologies can improve safety, processes and improve the overall sustainability of hospitals.

The last session of the congress takes a look at these new buildings, logistics and technologies and provides examples of success stories.

Mr. Keith Hamer, VP Group Asset Management for Sodexo (UK), will discuss business continuity in healthcare and promote the use of asset lifecycle and maintenance services. Dr. Rafail Sala López, Managing Director of Marina Salud (ES), will present a Spanish example of innovation in management in the national health system. We will discover the potential of innovative hospital architecture and technology during a presentation from Mrs. Henny Van Laarhoven, Managing Director Orbis Krankenhaus, Sittard (NL), and Dr Helen Bevan, Chief of Service Transformation, NHS Institute (UK), will discuss how to build energy for transformational change for the long haul.

The final roundtable will brainstorm ideas for steering innovation.

### Social Programme

Aside from this packed lecture schedule, the 24th EAHM congress also boasts an extensive social programme with a reception at the prestigious City Hall and a Gala Dinner and show at the glamorous Casino 2000 in Mondorf-les-Bains. There are also hospital visits and sightseeing trips on offer, please visit the website for more details.

### It is not too late to book your place!

For more information, please visit:

[www.eahm-luxembourg2013.lu](http://www.eahm-luxembourg2013.lu)



We look forward to seeing you in Luxembourg!

## Technological Evolution, Economic Crisis and Hospital Management of the Future



Joël de Rosnay, a science writer and Molecular Biologist will give the keynote speech on the opening day of the congress. He is currently President of Biotics International, a consulting company specialising in the impact of new technologies on industries and Special Advisor to the President of the Cité des Sciences et de l'Industrie at La Villette of which he was Director of Forecasting and Assessment until June 2002. From 1975 to 1985 he was Director of Research Applications at l'Institut Pasteur (the Pasteur Institute in Paris). For a taste of what is to come, below you can read an abstract of his speech.

The hospital is facing rapid evolution in terms of science, technology and digitisation. In times of economic crisis its management must change. How will the patients of the future deal with these scientific and technological developments? One could speak of an "informed patient", more aware of technical developments and able to engage in a constructive dialogue with clinical staff.

Among the most promising technologies are those emerging in the field of e-health,

that is to say the use of smartphones to measure numerous health parameters and transmit them to the doctor or hospital staff. This will change our methods of prevention. We are moving towards "quantifiable prevention", which is not only of interest to hospitals but also the pharmaceutical industry. New scientific and technical developments hold great promise for the future. For example, the use of embryonic stem cells for regenerative medicine.

Digitisation will have a fundamental impact on the management of the hospitals of tomorrow. We talk about a hospital digital ecosystem, computerised medical records, communication between specialists in internal networks and video transmission. The training of doctors in hospital management will play an important role in linking the administration of medical and nursing staff. We will therefore address a new type of hospital management moving from the "rigid" hospital with vertical management to the "fluid" hospital, which takes into account the flows and exchanges between departments, doctors, administration and caregivers. Hence the importance of a multidimensional approach to the patient.

The goal is no longer just to save money but to spend our budgets wisely using modern tools of prevention and analysis. Hospitals of the future will incorporate the methods of successful companies that succeed through the circulation of information, evaluation of procedures and collaborative and inclusive participation. Quality of care, in the interest of the patient, will also be valued. Hence the need for human connection and personalisation in the context of a technologically informed and fraternal humanism.



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# CONGRESS PROGRAM

## SCIENTIFIC PROGRAM

WEDNESDAY, 27 NOVEMBER 2013

### PRE-CONGRESS PROGRAM

HOSPITALS VISITS: (10.00 - 18.00)

**REHAZENTER** - National Center for Functional Reeducation and Rehabilitation

**CENTRE Fr. BACLESSE** - National Center for Radiotherapy

**INCCI** - National Center for Cardiac Surgery and Interventional Cardiology

### PRESIDENTIAL DINNER FOR THE CONGRESS OFFICIALS & SPONSORS (evening)

THURSDAY, 28 NOVEMBER 2013

### OPENING CEREMONY

Moderator: Mrs. Nathalie Reuter, RTL-TV journalist

Welcome Speeches (10.00 - 11.00)

Keynote Speech: «Technological Evolution, Economical Crisis and Hospital Management of the Future»

Dr. Sc. Jodi de Rosnay Science Writer and Molecular Biologist, Specialist of the Impact of new Technologies on industries - FR (11.00 - 12.00)

### Bloc I: STRATEGIC GUIDELINES IN CRISIS

«Taking the Opportunities for Transformation of Care in Northern Ireland»

Dr. Andrew McCormick, Permanent Secretary of Dept. of Health, Social Services & Public Safety - IE (13.30 - 14.00)

«Leading Health Care in Taming Times - Is There Another Way?»

Dr. Peter Lottman, Deputy Medical Director of Great Ormond Street Hospital - UK (14.00 - 14.30)

«Hospital Management From the Point of View of a University Hospital»

Mrs. Ursula Günter, Head of Administration at Heidelberg University Hospital - DE (14.30 - 15.00)

Poster Session - Presentation (15.00 - 15.30)

Refreshments Break & Networking (15.30 - 16.00)

«Partnering to Create Value in Healthcare»

Mr. Simon Schwett, Managing Director - Healthcare Sodexo - UK (16.00 - 16.30)

«Macroeconomic Outlook and Implications for Financing and Investment Decisions»

Mr. Yves Nostbusch, PhD, Chief Economist at BGL BNP Paribas - LU (16.30 - 17.00)

«Towards an International Competency Framework for Healthcare Managers»

Mr. Eric de Rudderbeke, PhD, CEO of International Hospital Federation - CH (17.00 - 17.20)

Panel: «Financial Crisis & Efficient Communications»

### RECEPTION AT CITY TOWN HALL HOSTED BY THE CITY OF LUXEMBOURG (evening)

FRIDAY, 29 NOVEMBER 2013

### Bloc II: BUSINESS PROCESS RE-ENGINEERING

Moderator: Mrs. Nathalie Reuter, RTL-TV journalist

«Process-Orientated Control of Medical Supply, Project Design and Critical Success Factors»

Dr. Jens Peukert, CEO of Lohfert & Lohfert - DE & Dr. Dominik Ungert, Director of Hirslanden Klinik - CH (08.30 - 9.00)

«Medtech Companies: Suppliers or Partners?»

Dr. Katarzyna Mazur-Hofböss, President Zimper EMEA - CH (9.00 - 9.30)

«How to Optimize Your Lab and Face the Crisis»

Mr. Mads Nybo, PhD, Chief Physician at Odense University Hospital - DK (9.30 - 10.00)

Coffee Break & Networking (10.00 - 10.30)

«Written on an Experience of the Laboratory Setup for 10,000 Hospital Beds»

Mr. Florian Kainzinger, PhD, Managing Director at Labor Berlin - DE (10.30 - 11.00)

«Patient Safety - Clinical Risk Management and the Insurance Industry»

Prof. Dr. Peter Gausmann, Managing Director at Gesellschaft für Risiko-Beratung - DE (11.00 - 11.30)

Panel: «Manage the Change ment ... Change the Management» (11.30 - 12.15)

### Bloc III: NEW BUILDINGS, NEW LOGISTICS, NEW TECHNOLOGIES

«Ensuring Business Continuity in Health Care Institutions; The Case for Asset Lifecycle and Maintenance Services»

Mr. Keith Horner, VP Group Asset Management for Sodexo - UK (14.00 - 14.30)

«Marina Salud: Innovation in Management of Health Department in the Spanish National Health System»

Dr. Rafael Salo Lopez, Managing Director of Marina Salud - ES (14.30 - 15.00)

Poster Session: Awards Ceremony (15.00 - 15.30)

Refreshments Break & Networking (15.30 - 16.00)

«Hospital Innovative Architecture and Technology - Innovations for Optimized Processes»

Mrs. Nancy Van Laarhoven, Managing Director Orbis Krankenhaus, Sittard - NL (16.00 - 16.30)

«Building Energy for Transformational Change for The Long Haul»

Dr. Helen Bevan, Chief of Service Transformation, NHS Institute - UK (16.30 - 17.00)

Panel: «Steering Innovation» (17.00 - 17.45)

Conclusion & IMPO Presentation (17.45 - 18.00)

### GALA DINNER & SHOW AT CASINO 2000, Mondorf-les-Bains (LU) (evening)



# RESILIENCE

## An Essential Trait for Managers

By Andrea Aparo, Ugo Luigi Aparo, Gianfranco Finzi

**We are living in a very turbulent time: new, difficult, and often perceived as negative. To cope with it, we have to train ourselves to deal with the “resilience factor”. Medical Directors must be able to evolve from decision-making processes based on cause analysis to ones based on the effective actions and reactions to the effects. They have to move from reaction to pro-action, from past experiences to future possibilities.**

### The Stockdale Paradox

Adverse events happen to everyone; it is absolutely normal to face problems. It is a scale invariant phenomenon, problems show up at any scale: personal, family, team, organisation, and society. We have to train ourselves to cope with difficulties. Yet, despite all the preparation and training, some people are devastated by the unexpected. Others come out from the turmoil strengthened. Why is this?

If one analyses the adverse cases with positive outcomes, it turns out that all those that have been strengthened by the experience, show a psychological dichotomy in the way they respond to a crisis.

Crisis has almost always a negative connotation. It may be interesting to know that in Japanese "crisis" is written as a combination of two ideograms. The first means "danger", the second "opportunity". If you are able to see the opportunity and have sufficient expertise and experience to tackle it, then the result can be positive. Some scholars translate the above-mentioned combination of ideograms as "luck".

We mentioned the psychological duality needed to positively react to a crisis. Those who come out strengthened accept, from the very beginning, without compromise, the harsh reality of the facts, but they have an unshakable confidence that the final result will be positive. They are totally committed to never give up. This duality is known as the "Stockdale Paradox".

Jim Stockdale, United States Navy vice admiral is one of the most-highly decorated officers in the history of the U.S. Navy. On September 9, 1965 he was shot down over enemy territory and until 1973 was a "guest" of the infamous "Hanoi Hotel," the most notorious Vietnamese prison camp. Eight long years in prison with no rights whatsoever and not knowing if and when he would be released. His life was in constant threat yet he never gave up his beliefs, values or his role.

Stockdale was the highest-ranking prisoner of war in the "Hanoi Hotel" and the entire Vietnam conflict. Therefore he had a responsibility to all other American prisoners. He was their guide and inspiration, an example to them all. It was his responsibility to keep them motivated and unwilling to give up. Stockdale did this in many different ways: by cutting his face, and deliberately injuring himself in order not to be recorded in a propaganda movie to show the world how the war prisoners were well-treated; inventing a protocol to hide classified information in the letters he sent to his wife. He was tortured twenty times, and he developed ways to survive, defining which apparently important confession to make, and at what level, in order to sound sincere and stop the torture sessions.

To reduce the sense of isolation of the prisoners, he created a language in order to communicate without being noticed. A sequence of pauses and noises, fingers' snapping, tapping on a pipe, sweeping the yard etc. Eventually he and his men were released.

Stockdale recounts his years at the Hanoi Hotel in the book "In Love and War", co-written with his wife. It is a difficult and emotional book but each chapter is worth reading. The reader feels the anguish of uncertainty, the brutality of the captors. One can experience the terror that a harsh reality can induce, day by day. You turn the pages knowing that the story has a happy ending but you constantly ask yourself how all that has been possible, how one can live through those experiences not knowing that there will be a positive outcome.

Stockdale was asked how he did it and his answer was disarming: "I never lost faith that all would be OK. I never had any doubt that I would come out alive. I knew that at the end I would be the winner." Are we dealing with a sort of maniac optimist? No, not at all. Indeed when asked to describe those who did not make it, his answer was immediate and withering: "The optimists. They did not make it."

The lesson of Stockdale is very, very impor-

tant: never forget that the confidence and faith that things will be OK in the end must be sustained by a method, by self-discipline, in order to cope with the daily challenge presented by a brutal reality, no matter how fierce.

We must be wary of optimistic companies where negative data undergoes cosmetic treatment to make it pleasing and acceptable. Worry when you are told that yes, there is a problem to be solved, and the solution will be found tomorrow, the day after tomorrow, or in the near future.

The Stockdale Paradox, this duality of mind, is the signature of all those who lead companies and organisations that grow continuously over time, generating wealth and value. Look for companies that accept the reality, without being paralysed or removing the difficulty of the situation in which they find themselves. Search for firms certain of their ability to survive and continue to grow and you will be fine.

If you develop the ability to get the right signals out of the thousand noises around you, if you do not panic, and do not follow the chimera of illusions, if you are not fascinated by sensational short term successes, if you are able to keep your attention focused until the final result has been achieved, always knowing where to go and discovering how to get there when it is needed, then you are like Jim Stockdale and you will succeed in the end.

These are abilities that can be learned, they are abilities to prevent adverse events and face adversity with resilience.

### Resilience

Resilience is a term derived from materials science and indicates the property that some materials have to retain their structure, or to regain the original shape, after being subjected to crushing or deformation. In psychology it describes people's ability to cope with stressful or traumatic events, and to re-

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organise their lives in a positive way in the face of difficulties. People with a high level of resiliency are able to respond effectively to negative experiences, to give new impetus to their existence, and even to achieve important goals. Exposure to adversity seems to strengthen rather than weaken them. They tend to be optimistic, flexible and creative, have a high social intelligence, know how to work in teams and treasure their own, and other people's experiences.

Resilience is a sort of mental function that changes over time in relation to the experience, to what has been lived and, above all, to changes in the mental mechanisms that underlie it. According to Susanna Kobasa, a psychologist at the University of Chicago, people who are best able to cope with adversities of life, the most resilient in fact, show three personality traits:

1. **Commitment.** The tendency to get involved. The person with this trait is active; has a high stamina; stays in the game; is attentive and alert but not anxious; examines the difficulties realistically. There is commitment if the goals to fight for, to believe in, are clearly stated: If something, properly defined, has to be achieved in a due time.
2. **Control.** The belief that one can dominate what has to be done, the actions to be undertaken; belief of not being at the mercy of events. People with this trait, in order to be able to dominate the different situations of life, are poised to change, even radically, the strategy to be followed; in some cases intervening with great promptness; in other cases stepping back, taking time, waiting.
3. **Love for challenges.** Openness, flexibility, willingness to accept changes; the ability to see the positive aspects of the changes, and minimise the negative ones. Change is seen more as an opportunity to grow than a threat. Changes are challenges that reinforce strength.

Commitment, control and love for challenges are personality traits that one can be aware of, and therefore can be cultivated and trained. Resilience is not a characteristic present or absent in an individual. It is a set of behaviours, a way of thinking, and actions that anyone can learn.

Having a high level of resilience does not mean that one does not experience difficulties or the stress of modern life. It implies the ability to accept the possibility of doing something wrong, and at the same time to believe

that whatever error or wrong decision he/she could encounter, he/she will always acknowledge it, take responsibility, and correct the course of action.

A high level of resiliency is the result of the interplay of several factors. The most important one is a high level of social intelligence, which allows the defining of a set of relationships with supportive individuals who share the same ethical values and characteristics. This set creates and feeds an environment permeated by love and trust, which provides encouragement and reassurance. The final result is a higher level of resilience.

Other factors are involved:

- Self-Esteem: Knowledge of personal abilities and capabilities, together with a strong character;
- Ability to be define challenging, but achievable, goals and the incremental plan to reach them;
- Good communication and problem solving skills;
- Ability to control impulses and emotions.

There are many ways of increasing your level of resilience. Focusing your attention on past experiences and identifying your personal strengths can help find the most appropriate strategy.

Answering the following simple questions can facilitate this process:

- Which past events have been particularly stressful?
- How have these events affected me?
- In difficult times, who have I found it helpful to talk to?
- In difficult times what did I learn about myself and what was my interaction style?
- Was it useful for me to provide assistance to someone going through difficult times similar to ones I had experienced?
- Was I able to overcome the difficulties? How did I do it?
- What has allowed me to look with greater confidence to my future?

According to Boris Cyrulnik resilience is the art of surfing white waters. A trauma disrupts the actor by dragging him/her in a direction she/he would have not have taken. Being swept up by the eddies of the stream that is dragging him/her towards a waterfall, the resilient subject has to resort to his/her internal resources, to memory, in order to fight against the forces that are tossing incessantly.

## Managers and Adverse Events

We are living in a very turbulent period. It is new, difficult and often perceived as adverse. There is no escape from this situation and those in charge must be able to switch quickly from the analysis of the situation to a viable action. We must be "resilient managers". Once the adversity is here, we have no choice: we must move from cause-oriented thought to an action-oriented one. We have to focus on the future.

There are four lenses through which resilient managers observe adverse events so to make the above mentioned shift in thought:

1. **Control:** When a crisis erupts focus attention on what can be done, rather than trying to identify all the factors that caused the crisis;
2. **Impact:** Resist the temptation to look for the causes of the problem in yourself, or other people, maybe trying to identify who is responsible for it, but focus attention on the positive effects that may result from the possible actions;
3. **Extent:** Find out if the cause of the crisis is specific and if it can be contained, or might cause long repercussions;
4. **Duration:** How long will the crisis and its repercussions last.

The first two lenses characterise the personal reaction in the face of an adverse event. The other two describe the feeling one has of the magnitude of the event. Resilient managers must use all four lenses together to fully understand their instinctive responses to personal and professional challenges, successes and failures.

When an adverse event occurs commonly we fall into ontological emotional traps. The first one is deflation. He who has walked a long way on the road of success can easily think about him/herself as a hero capable of solving any problem. A traumatic event can bring him/her back to earth. They may find themselves disappointed, dejected, discouraged and under siege.

The second trap is victimisation. Many of us, confronted with an adverse event, take on the role of the helpless spectator. We ignore any criticism. We do not want to be helped. We want to go on our way. We pretend to be right. The rest of the world is plainly wrong. Nobody understands us. These two traps are very, very dangerous.



## How to Develop the Ability to Be Resilient

Most of us, when faced with an adverse event, do a quick check on the causes, magnitude, and duration of the consequences of the event. For example, we find out, almost immediately, what forces are under our control, and if the event could be forecasted.

Resilient managers do not waste time on this reflective thinking and instead move directly to active thinking, identifying which aspects of the crisis can be controlled and their impact. The immediate goal is to respond to the incident, containing its amplitude and duration.

Three types of questions facilitate this change of direction:

1. **Specific Questions:** What can I do?
2. **Visual Questions:** How can I focus my attention on what needs to be done instead on what is going on?
3. **Collaborative questions:** Am I searching for elements to solve the problem, or am I looking for assertions or accusations about the problem?

The goal is neither the definition of an action plan, nor the ultimate understanding of how the team has to react, but to create opportunities, designing, in an appropriate and practical way, an inventory, a process, of what should be done.

### 1. Control

*Specific questions:*

- What factors can I act on to change the course of the adverse event?

*Visual questions:*

- What would my mentor or manager do in the same setting?

*Collaborative questions:*

- Who in my team can help, and how can I get them on board?

### 2. Impact

*Specific questions:*

- What should I do to get the most positive immediate impact?

*Visual questions:*

- What positive effects could my efforts have on my team members?

*Collaborative questions:*

- How do I mobilise the efforts of those who are not collaborating?

### 3. Extent

*Specific questions:*

- What can I do to reduce the negative effect of the specific event by 10%?

- What can I do to get a positive outcome?

*Visual questions:*

- What efforts and resources do I have to allocate within my team to get a positive outcome?

*Collaborative questions:*

- What can we do individually and what can we do together to contain the damage and turn this into an opportunity?

### 4. Duration

*Specific questions:*

- What can I do, right now, to move in the positive direction?

*Visual questions:*

- What are the different facets of the incident?

*Collaborative questions:*

- What steps need to be undertaken by the team, and what processes must be implemented to overcome this crisis?

**Table 1: Cause/Response Oriented Thinking**

Cause-Oriented Thinking	Response-Oriented Thinking
<p><b>Check</b> Could the adverse event have been forecasted?</p>	<p><b>Check</b> What can I do to improve the situation?</p>
<p><b>Impact</b> Was I instrumental in causing the adverse event, or has it occurred driven by external factors?</p>	<p><b>Impact</b> What positive contribution can I provide?</p>
<p><b>Extent</b> Is the cause of this adverse event specific or not?</p>	<p><b>Extent</b> How can I help to contain the negative aspects of this situation and generate positive outcomes?</p>
<p><b>Duration</b> Is the cause of this adverse event short-, or long-term?</p>	<p><b>Duration</b> What can I do to take action now?</p>

### Conclusions

Managers, specifically medical directors, have to increase their resilience, and must be able to switch from cause-oriented to response-oriented thinking (Table 1). Managers need to acquire the resilience of the famous cartoon

character Wile E. Coyote. Fighting his fiercest enemy, gravity, he never gives up, no matter what, the pursuit of his primary objective, the Road Runner.

The lesson of vice admiral Stockdale is very, very important. Never confuse the confidence and faith that in the end we shall make it with the discipline and method needed to cope with the brutality of everyday life, no matter how fierce.

Life is not always kind. Often it is pretty unfair. Sometimes we are lucky and sometimes things don't go our way. We have all lived through unpleasant experiences and suffered disappointments. Often there was nothing, and no one, to blame: an illness, an accident, a death, the end of a love; a prison camp in Vietnam. It is not important what these experiences do to us but what really matters is what we do with these experiences.

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# DRIVING OPERATIONAL IMPROVEMENT

## Joined-up Healthcare Data

By Peter Osborne

**Following the introduction of the new NHS structures in 2013 in the UK, the NHS still needs to find additional cost savings, despite central health budgets being ring-fenced. This is a common situation across Europe. Peter Osborne believes that an integrated approach to data, which engages both commissioner and provider, could deliver efficiencies without impacting on staff.**

The Health and Social Care Act 2012 heralded one of the biggest changes in the way patient health services in England are commissioned. The Primary Care Trusts (PCT) that 'bought' services to meet their patients' health needs have given way to groups of GPs working together in Clinical Commissioning Groups (CCGs). These are now responsible for commissioning the majority of secondary healthcare services – about 60 per cent of the annual budget.

CCGs place clinicians at the centre of the commissioning process and use their knowledge of patient pathways to drive improvements and eliminate inefficient functions not meeting patients' needs. They also have the

could grow to £30bn between 2013/14 and 2020/21 if services continue to be delivered in the same way as now.

The easier savings have already been made, mainly via the Quality, Innovation, Productivity and Prevention (QIPP) agenda introduced in late 2009. QIPP embraces a range of efficiency measures such as voluntary redundancies, procurement, asset optimisation, and the selling off of properties.

### Quest for Innovation

The obvious cost saving is to cut staffing levels. Pay accounts for approximately 70 per cent of NHS trusts' costs but there are always

they tend to collect it to meet the measure rather than recognising its value.

Another challenge is that CCGs, CSUs, and secondary care providers are each operating as separate entities, managing their own budgets and costs rather than working collaboratively. The result is a non-joined up approach. For example, a patient arrives at a primary care facility; a clinician examines them and, if required, sends them to a secondary care facility where they are re-examined and provided specific treatment if needed. The patient is then discharged, but if they have to make a repeat visit, the whole process is replicated – with all the associated costs. Looking at this scenario as a cost driver would suggest that the patient in question should be treated differently.

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Information on the costs of treating individual patients provides a much more detailed understanding of the real costs of care incurred, enabling more informed management decisions

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freedom to buy, build or share services via Clinical Support Units (CSUs), Local Authorities, or any provider meeting NHS standards on price, quality and safety under the 'Any Qualified Provider' policy.

The core objective now is to drive further savings and improve clinical efficiency. This is arguably the greatest challenge facing the NHS because although budgets are ring-fenced, they are allocated on a 'flat-cash' basis at circa £100bn per annum through 2015.

With growth in demand rising at about five per cent each year, annual cost savings of some £5bn must be found – the so-called £20bn 'Nicholson Challenge'. More recently, NHS England reported that the funding gap

claims there are not enough front-line staff. A much better approach is to deploy this cost in a more effective way by identifying instances where there is duplication or inefficiency at the primary and the secondary care level, and optimising the flow of patients between them.

While the easier types of efficiency opportunities targeted under QIPP still exist, flat-cash allocation and increasing demand for services mean CCGs must come forward with innovative commissioning models. Data is now core to driving this next phase. Yet many trusts today consider data collection a burden imposed on them by external parties, and are often unwilling to collect data to support their own decision-making process. In other words,

### Interactions as Cost Drivers

Lessons can be learnt from the manufacturing supply-chain, where there is a need to assess the cost to produce, aligned wastage, the cost to expedite and the desire to achieve a just-in-time delivery. Much of this thinking could be transferred to the health sector, with pathways seen as an integrated process. Information on the costs of treating individual patients provides a much more detailed understanding of the real costs of care incurred, enabling more informed management decisions. It also has the potential to engage clinicians, by making clearer the link between clinical decisions and aspects of efficiency cost-drivers and cost-effectiveness.

Both commissioners and providers are required to submit data concerning services and patient activity to the Health and Social Care Information Centre (HSCIC) to support planning healthcare. But while there are set requirements governing the collection of data, the methods employed vary between organisations, making any comparative benchmarking unreliable. NHS England's chief data

officer Geraint Lewis stated in the HSJ that “only a handful of trusts” are likely to meet the new data requirements from April 2014.

The ability to compare costs to benchmarks is a crucial tool for enabling providers to focus on achieving cost reductions in those areas that would enable them to meet their annual efficiency obligations. Many trusts are part of benchmarking clubs and there are several organisations looking at data-sets but much of the data is historical and looks at KPIs more from a clinical achievement perspective rather than an operational cost or activity-based perspective.

### Value of Data Collection

Patient-level information and costing systems (PLICS) provide an accurate way of deriving costs by identifying the resources used for care of each individual patient as the basis for calculating the actual costs of activities performed by the organisation (which may span several departments). Yet the information agenda is much wider than PLICS, efficiency measures under QIPP, or the data requirements of incentives such as payment by results (PbR) – whereby CCGs pay providers a fixed price for each individual treatment.

Healthcare organisations need to recognise the value of disciplined data collection and consolidation, and then use thorough analysis to make better decisions. For example, a good proxy for treatment cost can be sought by analysing staff-patient interactions via a time-booking system such as Rio. Reconstructing treatment pathways from this and other required data would give a more granular understanding of the cluster costs and enable healthcare organisations to provide evidence to control scope and patient categorisation.

‘Clustering’ assesses the needs of each patient to allocate them to a needs-based ‘cluster’ and was introduced under PbR. Developed initially for mental health services, the clustering model is being adopted by the Department of Health as the template for wider implementation of PbR.

There will be variation in the cost to treat patients within any given cluster, with a minority of patients far exceeding the median cost. Identifying and reclassifying said patients, or identifying new treatment pathways or interventions for them will reduce the mean cost of the cluster and potentially allow for effective exception management.

Other opportunities for improvement in-

clude identifying efficient teams and successful practice, or identifying inefficient resourcing and scheduling, as well as managing cluster activities and cost variances within the pathways. By understanding the elapsed time and contact time by clusters, trusts will be able to better forecast their bed, facility, and staffing needs and so reduce the costs associated with being over- or under-capacity.

entation and reporting to enable managers to identify the root cause of inefficiencies.

Given that each CCG will have a preferred clinical path – i.e. its own community of CSUs, acute care, secondary care and other suppliers – operational processes, cost drivers and available data will vary, making cross comparison difficult. This is where an independent consultative partner can be engaged to assist in assessing available data,

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The key will be to ensure the logistics, such as usage of assets and resources, and procedures in the form of clinical outcome and cost-effectiveness are aligned to deliver the best value service at the lowest cost

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### Knowing Where to Focus

Understanding the margin by service and activity (clinical pathway or cluster) is vital to knowing where to focus. Once this is achieved, it will then be possible to optimise clinical pathways by linking process, procedures, resourcing and consumables. The key will be to ensure the logistics, such as usage of assets and resources, and procedures in the form of clinical outcome and cost effectiveness are aligned to deliver the best value service at the lowest cost. This includes elements such as rationalising the supply chain, effective stock management, and leading procurement practice.

As part of the need to cost packages of care under PbR, a set of care packages must also be developed that describe what interventions patients will receive (on average) dependent on their care cluster. This care package may contain core elements and supplementary elements. To calculate a price for the care package and by extension the staffing level required for its delivery, a measure for the amount of time clinicians spend delivering elements of the package is required.

To achieve this, a standardised approach to capturing data across all organisations is needed, so that data is captured from the appropriate sources proactively, while eliminating irrelevant or superfluous data. A set of tools is also necessary to allow extraction of data in the format required, as well as rapid pres-

developing the necessary toolset, and performing process reviews and improvements to derive real value from the secondary usage data-sets stored within the trusts.

### Time for Action

Driving operational efficiency is not about encouraging clinicians to work harder, it’s about changing their interaction because the data available shows that in certain instances an expedited option may be optimum.

Understanding the margin by service, and identifying elements of the service that are efficient and effectively running at a cost lower than what they are being ‘paid’ (i.e. budget allocated) allows a focus on those areas running at a cost higher than budget allocated. This is critical if efficiency targets are to be met. Developing the capability to apportion costs to patients or to treatment pathways will also be vital for a successful transition to PbR.

The concept of assessing the cost of a clinical interaction and its effectiveness is a highly complex (and contentious) area, but there are real opportunities to drive efficiencies if the logistics surrounding it are suitably addressed.

### Author:

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# LEARNING FROM THE NUCLEAR INDUSTRY: PEER-TO-PEER ASSESSMENT

There have been many publications focusing on how healthcare can learn from other industries, namely the aviation and manufacturing sectors but comparisons with the nuclear industry are not so common. Peter J. Provonost from John Hopkins University School of Medicine and Daniel W. Hudson from the US Nuclear Regulatory Commission have changed this. In an edition of *BMJ Quality and Safety Journal* in 2012 they published a paper entitled "Improving health-care quality through organisational peer-to-peer assessment: learning from the nuclear power industry".

So what can hospitals learn from the nuclear industry? Well, in reality, the two industries are not so different. Safety and quality are hugely important issues in both sectors. There is a strong need for external regulation and also internally-driven efforts for improvement. It is internally that healthcare seems to be lagging behind the nuclear power industry.

After the Three Mile Island accident in Pennsylvania in 1979 the nuclear power industry set up the Institute of Nuclear Power Operators to improve safety. The institute set up a peer-to-peer assessment programme to share best practices, safety hazards and methods to improve both safety and performance. Provonost and Hudson believe healthcare needs a similar clinician-led, industry wide process to share

best practices, hazards and processes to improve patient safety and work alongside the external regulatory bodies.

According to Provonost and Hudson, the key elements of peer-to-peer assessment model are as follows:

- Systems-based focus
- Horizontal learning
- Voluntary participation
- Non-punitive approach
- Multidisciplinary external peer reviewers

To set up a peer-to-peer assessment process players in the healthcare industry must work together to create and oversee the assessment process. Collaboration between clinicians, managers and technical experts is essential to develop the correct

tools. A training model is the next step, along with the training of the first peer evaluators. Finally, a sustainable financial model is required. Undoubtedly this is a lot of work but considering the importance of patient safety in our hospitals and the cost of adverse incidents, such an assessment process could be an invaluable tool in our institutions' goal of better quality care for patients.

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## BOOK REVIEW



### If Disney Ran Your Hospital: 9 1/2 Things You Would Do Differently

Fred Lee  
(Second River Healthcare 2005)

Using examples from his work with Disney and as a senior-level hospital executive, author Fred Lee challenges the assumptions that have defined customer service in healthcare. In this unique book, he focuses on the similarities between Disney and hospitals - both provide an "experience," not just a service. It shows how hospitals can emulate the strategies that earn Disney the trust and loyalty of their guests and employees.

The book explains why standard service excellence initiatives in healthcare have not led to high patient satisfaction and loyalty, and it provides 9 1/2 principles that will help hospitals gain the competitive advantage that comes from being seen as "the

best" by their own employees, consumers, and community.

Lee believes loyalty is a hospital's best source of long-term strategic advantage; loyalty from patients, from staff and from managers. The book is full of real life examples that readers can relate to provides a new insight into loyalty and leadership.

### Reviews of the book:

*"Fred Lee's message speaks to the heart of nursing leadership. This is exactly what nurse executives are looking for...a practical guide with vivid illustrations and profound insights that can be put to use immediately. It goes to the core of leadership in a healing organization."*

**Pamela Thompson, CEO of the Association of Nurse Executives**

*"I wish I had read this book when I was a hospital CEO. I would have given one to every employee."*

**Jerry Pogue, Publisher of Second River Healthcare Press**

# HOSPITAL ARCHITECTURE IS AN INTERDISCIPLINARY BUSINESS

## The Effect on the Patient must be Actively Prioritised

By Julie Meldgaard, Stine Fausing Thomsen and Pernille Weiss Terkildsen

The health service is currently undergoing a period of rapid expansion, placing challenging new demands on treatment, communication and architecture. This is particularly relevant in light of the increase in ambulatory care, which demands a lot from patient-staff communication. One approach to this challenge is to work deliberately with the design of the physical environment; increasing the quality of treatment, positively changing the experiences of the patients, and thereby improving the bottom line.

In the Scandinavian healthcare system, and especially in hospitals, there has long been a transition away from stationary treatment, in which the patient is hospitalised, to so-called ambulant treatment pathways, where the patient visits the hospital for a short period without being admitted. The number of ambulant treatments increased by 19% during the period from 2006-2011 (source: Statistics Denmark), while at the same time the number of bed days decreased by 12% - the average admission period in general medicine is now as low as 3.7 days (source: Danish Regions).

Ambulant patient pathways are, broadly speaking, recognised to be cheaper, more patient-secure, more productive and highly resource-

tients/customers in a resource effective and high quality manner.

Consequently the ambulant pathways must be as short as possible. Therefore communication between nurse and patient is paramount. If it does not function optimally during ambulatory care, there is a significant risk that the patient will not understand what they are asked or informed about. This may result in errors occurring during diagnosis or treatment. In extreme cases, this may result in an incomplete treatment course, which forces the patient to return to the hospital or seek treatment elsewhere. These results increase costs and are of great inconvenience to the patient.

ceive the medical attention needed. In situations like this, ambulatory care takes place in an outpatient clinic, where speed and efficiency are crucial. Here it is pivotal that the architecture and interior supports communication and its purpose. The following example will illustrate how. There is no time to waste and no time for the patient to get to know and get comfortable with the staff before the treatment begins. Not only for the patient, but also for the nurse there is a limited time-period to form an understanding of the individual patient, and thereafter decide what kind of treatment course is best suited to them. The risk is that nursing is reduced to anonymous procedures and impersonal standards.

## Ambulant patient pathways are, broadly speaking, recognised to be cheaper, more patient-secure, more productive and highly resource-effective

effective, and at the same time, they do not passivise patients in the manner that stationary treatment does. It is significant as well that the patients appreciate being diagnosed and treated without having to be admitted. Today you are only hospitalised if you are seriously ill. Anything else would become too expensive and too difficult to organise. The patient of the future is the well-informed citizen, increasingly recognised as a customer; they demand effective, secure and qualified service from the hospital. Therefore, hospitals must focus on the weakest patients concurrently with processing all other pa-

### The More Ambulant Treatment, the More Important the Architecture

Architecture and communication are closely connected areas on a practical (acoustic, sound, space etc.) as well as on the more abstract, atmospheric level. Both affect practical communication and influence both the patients' and the nurses' sense of communal roles and relations. If there is not a thoroughly processed symbiosis between the patients' needs and the purpose of the nursing, situations will arise where the patients, in spite of the intentions of the nurses, will not re-

### The Short-Term Outpatient Department

Stine's fieldwork during her nursing education has, amongst other things, generated this example:

*A young man sitting in the hallway is approached by one of the nurses, who with a subdued voice informs him about something. He is clearly confused and the nurse urges him to join her in the nurses' room for a personal talk. As they walk along the corridor to the nurses' room, the conversation begins. The nurse walks quickly in front of the patient, who tries to keep up. Fragments of their conversation can be heard by the surrounding people. This is neither conducive to communication or trust, and seems both undignified and at odds with the patient's lawful right of confidentiality.*

Stine's final project in her nursing education analysed the many interactions between nurse and patient that occur in ambulatory care units and outpatient departments. These encounters take place in hallways, waiting rooms, by the elevators, in car parks etc. Data indicates a need

to redefine how and where nursing actually takes place – especially in short interactions such as an outpatient situation, where the communication between patient and nurse has a very limited timeframe. Thought should be given to the performance of nursing in new and alternative contexts. The most significant factors here are reassuring settings, which promote a feeling of safety that optimises the communication value.

tem. Indeed, they have an impact on the economic bottom line. Therefore these factors should be integrated into the design and concept development process for new hospitals. These factors should also be at the centre of the ongoing adjustments and adaptations to the physical environment for optimisation purposes. The work processes for employees, interdisciplinary cooperation, the IT system and medico-technological

mands that staff live up to the values exhibited by the surroundings.

A lot takes place within the walls of a hospital, and as the example above shows, there is also a lot of patient-related contact and nursing outside of the well-defined, functionally determined rooms. Therefore, it has been essential in Aabenraa to create areas for both patients and employees in for example the hallways where space is limited. By working with well-defined zones in the hallway, you avoid the problem of people getting in each other's way, which is uncomfortable and inconvenient for patients/relatives as well as for staff. One side of the hallway is dedicated to the staff – here the focus lies in professionalism, orderliness, and quick and easy access to the necessary work tools. On the other side of the hallway is a more social zone. Here a calm mood has been created by gathering artistic elements and objects. There is a beautifully executed wooden bar which can be used as a support when walking down the hallway, or to make exercise routines. There are wall hung folding chairs to be used if you require a rest, or if relatives wish to have an informal talk outside of the patient room.

The mounting of art has a secondary function in that it can be used in walking exercises. The pictures are hung at certain intervals (like the folding chairs) so the physiotherapist does not have to place disruptive traffic cones in the hallway.

Art, furniture, lighting and signposting – all of the elements in the hallway are selected from the same concept and theme. There is a clear and coherent hierarchy so the different elements do not have to fight for attention. Care when decorating and furnishing ensures an atmosphere of safety, intimacy and warmth is created. In these surroundings, the pace is naturally slower and time for conversation is generated, time to hear and to understand each other. This creates both quality and efficiency in healthcare.

As mentioned before, time and the appropriate settings for communication between patients and nurses are important factors to ensure quality and efficiency but they are difficult to achieve in a busy department setting, which is rarely tailored to the purpose. Nursing theories combined with design and décor can improve conditions for patient-nurse interaction, promoting intimacy, dialogue and safety. According to the Norwegian philosopher and healthcare scientist Kari Martinsen, creating space for intimacy and privacy is essential in an otherwise noisy and restless hallway in a hospital (Martinsen, 2005).

This can be achieved through the establish-

## The physical settings of the healthcare system are cost-intensive, one-off investments, where bad decisions have permanent and negative implications on the operating economy in the future

### Settings Create Value

Architecture within the healthcare system has recently been experiencing increased interest from politicians, scientists, employees and not least the patients. It is of course especially relevant for those of us who work with evidence-based science. The physical settings of the healthcare system are cost-intensive, one-off investments, where bad decisions have permanent and negative implications on the operating economy in the future. This is especially relevant for logistics, productivity, performance specification, organisation and work environment. Large sums are at stake, and therefore concrete financial rationales are often allowed to control the decision-making processes concerning design and architecture (Tryggstad, 2011 and Flyvbjerg 2008). Patient security is also a relevant parameter in Denmark, though still on a much lesser scale compared to other countries, where lawsuits regarding patient compensation, which can be attributed to architecture and design, are increasing rapidly. The trend is clear and the logic obvious, from both ethical and socio-economic perspectives.

But what we as nurses and architects find strange is that the more fundamental factors such as productivity, process optimisation and patient security are still very superficially treated; often in broad terms and with macro-economic 'guesstimates'. These are basic factors that deal with the patients' interaction with the staff, with technology and with the hospital as a whole (space, interiors and architecture). When combined, these minor factors, add up to a level that justifies analysis into the hows and whys of physical settings in the healthcare sys-

opportunities are all important factors.

The above example can hopefully be seen as a challenge to the existing trends of standardisation and the 'one-size-fits-all' architecture. Hospitals need to look at the existing praxis and determine what to have more or less of in the future. We believe that a thorough analysis of today's praxis is a thus far unexploited source, which could strengthen the architects' insight into the kind of organisation for which they are designing.

It is also our claim that the analyses can increase the health professionals' understanding and exploitation of the potential and limitations of the physical setting in their performance of medical care, communication, therapy etc.

### The South Jutland Hospital

At the new South Jutland Hospital in Aabenraa, they take the meaning of their surroundings seriously, acknowledging that the rooms that contain us affect both our body and mind. The surroundings are thereby a crucial element when it comes to treatment, nursing and healing. From the moment you enter the hospital in Aabenraa, it is clear that it has been crucial for the architects to create a comfortable, welcoming and warm atmosphere. Already in the main lobby you can sense the quality and attention that is at the centre of the hospital. When you feel that thought has been put into the surroundings and settings, you intuitively feel more secure, and really begin believing that the treatment you receive in the hospital is of good quality. The hospital staff are also influenced by their surroundings. A workplace that an employee can take pride in de-

» CONTINUES ON PAGE 51





This issue our supplement focuses on one of the most expensive areas of the hospital: the Operating Room (OR). As usual, there is one copy for you and one to pass on to the relevant department. Van Essen et al. introduce a new decision support system to help OR managers successfully adjust their ever-changing OR schedules. The news section covers issues such as new technologies, teamwork and the effect of background noise on surgical team communication. The final article looks at the different ways to keep your OR sustainable in terms of costs and the environment.

## RESCHEDULING IN THE OR

### A Decision Support System Keeps Stakeholders and OR-Manager Happy

By J. Theresia van Essen, Johann L. Hurink, Woutske Hartholt, Bernd J. van den Akker

Managing the Operating Room (OR) department is difficult due to the conflicting priorities and preferences of stakeholders. Therefore, planning and scheduling methods are helpful to increase the efficiency in OR departments (see Cardoen et al. and Hulshof et al. for an overview on OR planning and scheduling). In this article, we focus on the rescheduling of surgeries, or more precisely, on the rescheduling of surgeries throughout the day.

On any given day, emergency patients who need surgery arrive in the OR department. In many hospitals, these surgeries are scheduled in one of the elective ORs, which disrupts the OR schedule. Changes in the duration of elective surgeries may also disrupt the OR schedule. Therefore, the initial OR schedule may have to be adjusted throughout the day to ensure that it is still possible to execute.

The new OR schedule must fulfill quite a number of restrictions, and in addition, there are several stakeholders whose preferences should be taken into account. Since it is hard for an OR-manager to consider all these restrictions and preferences simultaneously, we developed a decision support system (DSS), which supports the OR-manager. The proposed approach is general, but the realisation and used preferences are based on data from a specific hospital in the Netherlands.

In the next section, we discuss the various stakeholders involved and their restrictions and preferences, based on a survey performed at the Isala Clinics, which is the above mentioned hospital in the Netherlands. Although these restrictions and preferences may differ between hospitals, the ideas of the method developed in this paper should be applicable for other hospi-

tals too. Based on the achieved insights, we have developed a mathematical model that incorporates these restrictions and preferences to analyse which changes are preferred. These changes are incorporated as decision rules in the DSS. The developed DSS is tested by means of a simulation study to determine what improvements can be made to the OR schedule when the developed DSS is used in practice.

#### Restrictions and Preferences

The initial OR schedule is given by the assignment of the elective surgeries to an OR and the initially planned start times of the elective surgeries. Each surgery has an expected duration, however, in practice, the actual duration of a surgery generally deviates from this duration. When a surgery takes less time than expected, the initial OR-schedule is not disrupted. However, it may be beneficial for the OR and other departments to schedule this next surgery earlier. When a surgery takes longer than expected, the next surgery may have to start later. This results in a shift of the not yet started surgeries in this OR. Because of this, some restrictions may be violated. In addition, emergency surgeries may arrive which also disrupt the initial OR-sched-

ule. Therefore, throughout the day, a new OR schedule may have to be created for all elective and emergency surgeries that still have to be performed. In this section, we first consider the overall restrictions for rescheduling surgeries throughout the day. Then, we consider all stakeholders involved when changing the OR schedule and discuss their restrictions and preferences.

#### Overall restrictions

Rescheduling is done by assigning a new start time to each surgery. Note that we do not allow the elective surgeries to be assigned to another OR as this might lead to larger disruptions in the processes. Within the rescheduling, it may be necessary to cancel an elective surgery. Note that we do not consider the rescheduling of a cancelled surgery, because we only focus on rescheduling within the day and not from day to day.

The new start time of a surgery should fulfill a number of restrictions. It should be greater than or equal to (i) the ready time of the patient, (ii) the start time of the assigned surgeon, and (iii) the start time of the assigned OR. In addition, there may be some surgeries that should start before a certain time because of medical reasons, and therefore, cannot be cancelled.

### The Patient

The key stakeholder is the patient. For patients it is important that the surgery takes place at the scheduled time. Penalty costs are incurred when the new start time deviates from this preference.

### Ward

Prior to surgery, patients are admitted to a ward where they are prepared for surgery. The survey showed that when a surgery starts earlier or later than scheduled, the workload on the ward increases. Therefore, penalty costs are incurred when there is a change in the start time of a surgery.

### Holding Department

After the preparation on the ward, the patient is transported to the holding department to be further prepared. A limit on the number of patients who can be treated simultaneously is determined by the number of available nurses and beds.

The survey at the Isala Clinics showed that the holding department prefers a levelled amount of patients that are present at each

patient is younger than six months, the anaesthetist must be present during the complete surgery, including the surgical procedure. This means that during this time no anaesthesia can be administered or reversed in one of the other assigned ORs.

### Surgeon

The surgeon is assigned to one OR and only has to perform the surgical procedure. This means that he/she does not have to be present during administering and reversing anaesthesia. The surgeons indicated in the survey that they do not have any preferences concerning a change in the OR-schedule as they consider the patient to be the most important.

### OR Assistants

The OR-assistants do not impose any restrictions on the OR-schedule. Their only preference is that overtime is minimised. Overtime can occur due to emergency surgeries and surgeries that take longer than expected. Therefore, penalty costs are incurred when there is overtime.

ies a radiology technician should be present during administering anaesthesia and the surgical procedure. This means that he/she does not have to be present during reversing anaesthesia. We restrict the number of required radiology technicians to be smaller than or equal to the number of available radiology technicians.

The survey showed that it is important for the radiology department that their employees at the OR department finish as early as possible so that they can carry out other work in the radiology department. Therefore, penalty costs specified by the radiology department are incurred when a radiology technician finishes later than needed, i.e., when the time the radiology technicians are present is longer than the time the radiology technicians are needed.

### Pathology Department

During some surgeries, tissue is removed from a patient that needs to be examined by a pathologist. After the surgical procedure, the tissue is transported from the OR to the pathology department. When tissue arrives after closing time and overtime is needed penalty costs are incurred.

### Logistic Department

The logistic department is responsible for preparing materials needed during surgery. The materials are laid out in the order in which the surgeries are scheduled. When two surgeries are interchanged, penalty costs specified by the logistic department are incurred, because they have to change the order in which the materials are laid out.

### Decision Rules

All the restrictions and preferences described in the previous section are combined in a mathematical model (Van Essen et al. 2012). The model is used to determine optimal adjustments of the OR-schedule, however, the computation time of this model is too long to make the model applicable in practice. Therefore, the solutions obtained by this model are only used to determine which changes are preferred by the stakeholders in the solutions obtained by the mathematical model.

We tested the model on three scenarios for Isala Clinics. For each of the scenarios, we only considered surgeries that started or arrived after a certain point in time. Table 1 shows that for Isala Clinics, shifting a sur-

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The simulation study shows that by using this DSS, fewer surgeries are cancelled and patients and wards are more satisfied, but also that the workload of several departments increases to compensate for this

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point of time. Therefore, penalty costs, specified by the manager of the holding department, are incurred when the number of patients exceeds a certain threshold.

### Anaesthetist

The anaesthetist is responsible for administering and reversing anaesthesia on one or more ORs. However, during the surgical procedure, the anaesthetist does not have to be present in the OR, because the presence of an anaesthesia nurse is enough. Therefore, we do not allow that more than one anaesthesia is administered or reversed at a time in the ORs to which the anaesthetist is assigned.

However, there are a few exceptions. When a surgery is complex, for example when the

### Recovery Department

After surgery, the patient is transported to the recovery department to be monitored while recovering from surgery. The limit on the number of patients who can be monitored simultaneously is determined by the number of available nurses and beds.

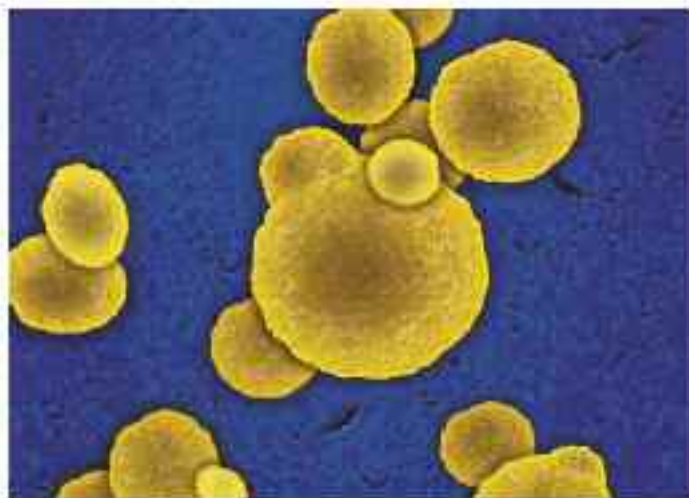
Like the holding department, the recovery department also prefers a levelled amount of patients that are present at each point of time. Therefore, penalty costs are incurred when the number of patients exceeds a certain threshold.

### Radiology Department

For some surgeries, an X-ray machine is needed during surgery. For these surger-



# Pre-Surgical Screening of *Staphylococcus aureus* and Methicillin-Resistant *Staphylococcus aureus* Can Reduce Surgical Site Infection rates and Hospital Costs



The BD MAX StaphSR Assay can detect *S. aureus* and MRSA in under two hours, allowing healthcare facilities to begin treatment earlier.

**S**urgical site infections (SSI) now affect approximately 5% of all surgical patients and are the second most frequent cause of health-care associated infections (HAI). They adversely impact mortality and patient quality of life and result in prolonged hospitalization. In the U.S., approximately 500,000 to 750,000 SSIs occur annually, resulting in an overall mortality rate of 3% and increasing to a rate of 20% or higher for cardiac patients. According to the CDC, on average each SSI increases a patient's hospital stay by more than a week and hospital charges by more than \$3,000.

The National Healthcare Safety Network (NHSN) reports that *Staphylococcus aureus* (*S. aureus*) is the predominant organism of SSI (SA-SSI), accounting for about 30% of all infections. Approximately 25-30% of healthy people are colonized with *S. aureus*, while only about 5 to 8% of people carry methicillin-resistant *Staphylococcus aureus* (MRSA), which is more commonly associated with exposure to healthcare institutes. Most SA-SSI derive from a person's own flora and carriers of *S. aureus* have three to eight times the risk of acquiring an HAI with this organism. Studies have now shown that SSIs can be prevented by conducting preoperative screening to identify patients colonized with *S. aureus* or MRSA, followed by targeted decolonization and/or antibiotic prophylaxis. This strategy can also improve patient outcomes by positioning healthcare professionals to introduce interventional strategies for SSIs before the development of painful and potentially life-threatening complications.

A recent Dutch randomized controlled trial evaluated the benefits of screening surgical patients for *S. aureus* through a

real-time polymerase chain reaction assay. In results published in the **New England Journal of Medicine**, the authors provided strong evidence indicating that rapid identification of patients carrying *S. aureus* combined with peri-operative decontamination using mupirocin nasal ointment and chlorhexidine gluconate soap can reduce the rate of SA-SSI development by nearly 60%, while causing very few side effects. The study also found that this method reduced the mean hospital stay for patients by almost two days.

A second study in the Netherlands found that a "screen-to-treat" strategy helped to reduce per patient hospital costs by €2,000 and showed an annual savings to the study hospital of \$1.5M. Targeted decolonization and/or antibiotic prophylaxis for *S. aureus* and MRSA carriers can also help reduce the use of an unnecessary antibiotic therapy and preserve maximum efficacy in antimicrobial treatments.

A study published in **Infection Control and Hospital Epidemiology** found that while 60% of infectious disease physicians perform preoperative screening for *S. aureus*, only 13% screen for both *S. aureus* and MRSA. Although screening strategies vary among physicians and hospitals, a screen-to-treat is positioned to deliver optimal results with the use of rapid molecular tests able to detect deadly superbugs in pre-surgical patients. In recent years, researchers at BD introduced the BD GeneOhm™ StaphSR Assay, a test that detects *S. aureus* and MRSA in less than two hours. Traditional culture-based testing can take up to three days to confirm detection. More timely detection can position hospitals and other health facilities to initiate treatment earlier while quarantining colonized patients and introducing other forms of intervention that can both improve outcomes and reduce the risk of new infection among patients and healthcare workers.

Based on the most recent data, broader use of a screen-to-treat strategy targeting both *S. aureus* and MRSA can help reduce the risk of SSIs for surgical patients while reducing average length of hospital stay and overall hospital costs.



Further information:

[www.bd.com/europe/ds](http://www.bd.com/europe/ds)



gery is the most frequent adjustment used, and we also see that often a break is scheduled between two surgeries. The latter may not seem optimal with respect to OR utilisation, however, these breaks can improve the perceived workload of other departments or may be necessary to fulfill the restrictions. Therefore, we incorporate the following two decision rules into our DSS:

1. Shifting a surgery
2. Schedule break between two surgeries

**Table 1: Results scenario 1, 2, and 3**

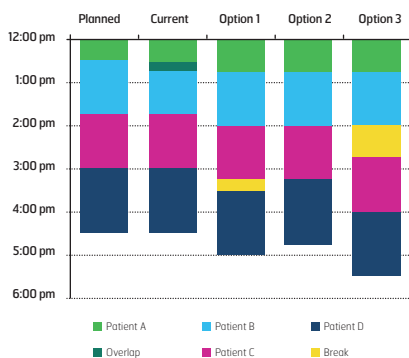
	10 a.m.	12 p.m.	2 p.m.
Number of surgeries	754	584	377
Rescheduled surgeries	566	416	213
Shifted surgeries	375	297	176
Exchanged surgeries	1	0	0
Cancelled surgeries	0	0	1
No break	264	183	71
Break 15 minutes	166	112	66
Break 30 minutes	62	33	21
Break 45 minutes	22	19	11
Break > 45 minutes	38	37	13

### Decision Support System

To make our method applicable in practice, we have developed a DSS which can be used by the OR-manager. We incorporated the two decision rules that are derived in the previous section. The user can indicate for which OR the schedule should be adjusted. Then, the DSS presents the three best options to the user. A screenshot of the DSS is shown in Figure 1.

To determine the effect of using the DSS

**Figure 1: Screenshot DSS**



in practice, we tested the developed DSS on data of Isala Clinics by means of a simulation study. The results in Table 2 show that the DSS provides a much better solution than the original realised OR-schedule of the Isala Clinics as the total penalty costs are reduced by approximately 50%. In addition, the results show that the penalty costs for the patients and wards decrease, however, the penalty costs for the OR-assistants and the recovery, radiology and pathology departments increase. The penalty costs for the mentioned stakeholders increase because surgeries cannot be cancelled or exchanged and thus, more surgeries have to be done in overtime. Concluding, the use of the DSS provides a better trade-off between the preferences of the involved stakeholders and by this reduces the incurred penalty costs significantly.

### Conclusions

In this article, we treated the problem of rescheduling surgeries on the day of execution. We formulated a mathematical model that determines the best adjusted OR-schedule at a given point in time. The achieved results show that, with a few exceptions, the only used adjustments are (i) shifting surgeries, and (ii) scheduling breaks between two surgeries. These two decision rules are incorporated in a developed DSS. This system determines the best adjusted schedule for one OR with respect to the given restrictions. The simulation study shows that by using this DSS, fewer surgeries are cancelled and patients and wards are more satisfied, but also that the workload of several departments increases to compensate this.

Further research could focus on including the Central Sterile Supply Department (CSSD) into the model. This department prepares the instrument sets needed for a surgery. When a surgery is added to the OR-schedule during the day, this may influence the workload on the CSSD. In addition, the CSSD may impose some extra restrictions on the OR schedule.

There are several ways in which the developed DSS can be used, for example, to reschedule an OR immediately when it is disturbed or reschedule all ORs at some moments in time. The last example also raises the question in what order the ORs should be rescheduled. Therefore, it is interesting to investigate good ways to use the DSS.

**Table 2: Results simulation study DSS**

Total penalty costs	Realised OR-schedule	
	Original	DSS
Cancellation	66.67	0.00
Patient	40.91	29.50
Wards	34.40	21.44
Holding	0.00	0.00
OR-assistants	6.43	12.12
Recovery	8.85	14.70
Radiology	2.41	2.78
Pathology	0.70	1.14
Logistics	9.26	0.00
Total costs	87.03	45.13

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As safety is of top priority for patients, clinicians and managers alike, this issue we bring you a supplement dedicated to the topic. As usual there are two copies: one for you and another to pass to on an interested colleague. Stephen Leyshon et al. ask why healthcare of all sectors struggles with risk and emphasise the benefits of a data-driven, preventative approach to risk management. Agnoletti et al look at safety in the operating room and Percy Stubbs delves into the hot topic of safety-engineered medical devices.



## HAZARDOUS TO YOUR HEALTH:

### Why Does Healthcare Struggle to Manage Risk?

By Stephen Leyshon, Eva Turk, Tita Alissa Listyowardojo, Anna Hayman Robertson

Healthcare is known to be dangerous to patients – the very people it seeks to help. Of the 421 million hospitalisations in the world annually, 42.7 million are estimated to be associated with some degree of adverse event – this makes unsafe care the “14th leading cause of morbidity and mortality, comparable to the burden from tuberculosis or malaria”.

Healthcare providers and policy makers are seeking to change this and the evidence shows that change is possible. Other safety critical sectors have been more successful at reducing harm by using risk based approaches: assessing risk and acting to ensure that they have an appropriate number and strength of prevention and mitigation controls in place relative to their hazards.

In healthcare there is evidence that the use of system level methods to assess and manage risk improves quality. For example, the recent EU funded MARQuIS study found that hospitals “that have either ISO certification or accreditation [i.e. hospitals that can demonstrate effective risk management] are safer and better than those which have neither”. The aim of this paper is to share the lessons learnt in identifying challenges for applying risk management in healthcare for patient safety.

#### Methods

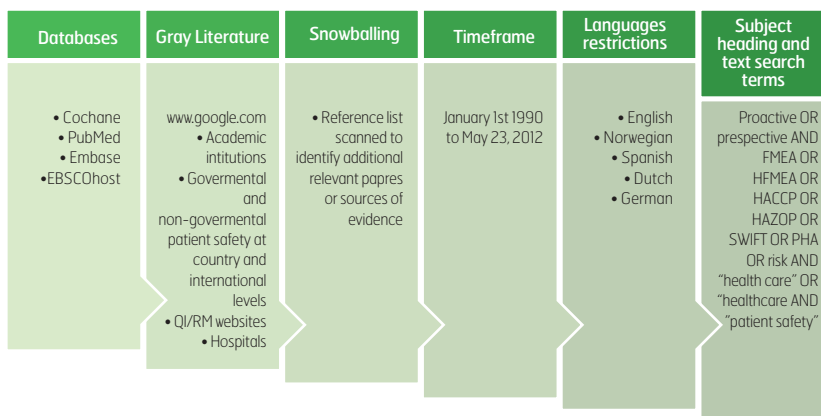
A two phased study was conducted over the period 2012–13:

**Phase I:** A systematic literature review was carried out. For the purposes of the review, proactive risk assessment (PRA) was de-

defined as any method (qualitative, semi-quantitative or quantitative) used to estimate or evaluate the likelihood and consequence of hazards to patient safety before they happen to facilitate decisions on preventing harm. The search terms for specific PRA methods were identified through consultation with PRA experts in other safety critical industries (i.e., aviation, road, construction, maritime, oil and gas, rail, energy, telecommunication). Figure 1 shows the search strategy with incorporated subject headings and text words (in title and abstract). Reference lists of included studies were also examined for any additional relevant studies not identified through the searches.

**Phase II:** Empirical data was collected using a multiple case study approach. Semi-structured interviews were conducted with hospital staff in three hospitals in Europe (See Table 1). Individual interviews were carried out in each hospital until data saturation point was reached. In hospital 1, staff were selected from a patient pathway, whereas for hospital 2 and 3, staff were selected from two specific clinical areas; this reflected the different ways in which care was organised. In all three hospitals, staff were selected that represented different levels of experience, roles and responsibilities. The interviews were focused on identifying risk assessment at a system level, including staff experiences with using these processes.

Figure 1: Search strategy



**Table 1:** Description of the participating hospitals in the case study

Case study	Hospital 1	Hospital 2	Hospital 3
<b>Type of hospital</b>	Acute	Acute	Acute
<b>Country</b>	Norway	The UK	The UK
<b>Size</b>	200 beds	1200 beds	900 beds
<b>Number of units assessed</b>	8 units covering the patient pathway "hip fractures in elderly"	2 units	2 units
<b>Positions of interviewees</b>	Line management and operational staff, senior managers and administrative staff	Operational staff, unit manager, senior manager	Operational staff, unit manager, senior manager
<b>Number of interviewees</b>	25	23	22

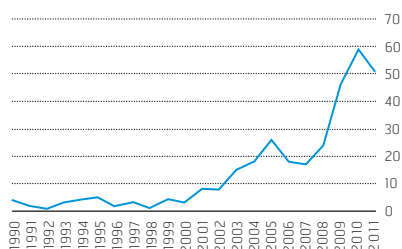
**Results**

**Findings from the systematic literature review (phase I)**

The initial search strategy identified 387 references. The abstracts of each reference were screened independently by three researchers (ET, SL, AHR). After abstract screening, 96 articles were obtained and read in full by two researchers independently (ET, SL). Thirty four articles met the inclusion criteria.

The review shows that the rate of publication on PRA methods has increased over the last 20 years (Figure 2). Despite the increased publication rate, the literature on the use of systematic methods of PRA in healthcare is largely descriptive with limited empirical evidence showing successful adoption or impact (e.g. a decrease in the number and severity of incidents post PRA implementation) or identification of the healthcare specific strengths and weaknesses of the processes described. Most articles identified through

**Figure 2:** Number of publications identified through the literature search over time



**Table 2:** Barriers to PRA

Barriers to PRA internal to a team	Barriers to PRA external to a team
Inadequate organisational structure	Lack of trust in external facilitators
Limited competence in healthcare practitioners in PRA methods	No or limited awareness of rules and regulations governing healthcare practice by external consultants or facilitators
Resource limitations	Lack of control over the risk register (i.e. the database of if identified risks) once the risks are reported out of a team, ward or unit
Ineffective communication	
Misperception of the method	
Lack of awareness	
Perceived lack of validity of and reliability of quantitative elements of PRA (e.g. risk priority numbers)	

the review simply set out the steps to using particular PRA approaches (most frequently Failure Modes Effect Analysis - FMEA).

The literature suggests a number of barriers in applying PRA approaches to healthcare (table 2): the need for dedicated time, resources and an organisational structure 2ready and able to support PRA approaches (e.g. with the necessary information to make appropriate judgements). For example, FMEA requires on average 10 hours including 4-8 hours of team meetings. In addition to dedicated time, many healthcare staff had difficulties in understanding the concept of PRA. Staff often perceived some PRA methods (e.g., Hazard Analysis and Critical Control Points or

HACCP) as time consuming, burdensome, unnecessary and difficult, even after staff attending workshops explaining the process and the methods' potential value. This is likely because staff perceived the PRA approaches, with their emphasis on process mapping and discussing potential failure points, as theoretical and removed staff from direct patient care, which makes PRA unattractive to action-orientated health professionals.


In addition to internal factors described above, there were also external factors of barriers to apply PRA methods into healthcare. For example, the lack of trust towards the external facilitators who introduced the PRA methods, and the perception that facilitators take advantage of business, may impinge the staff's motivation to be involved in the PRA.

**Findings from the case studies (phase II)**

The interviews revealed that most staff were only aware of clinical risk assessments such as falls risk assessment, manual handling, VTE, and pressure ulcers. Some senior staff with a managerial role conducted risk assessment related to a broader issue such as infrastructure and facility layout, but this practice was limited and inconsistent across staff grades. One hospital mentioned that risk assessment was conducted for determining the staffing levels and staff skill mix. However, no further actions were taken by hospital management on the results of that assessment.

Where system PRA processes were in place, there was mixed understanding of their use





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and potential value. There was some evidence that the risk assessment methods in use had become rituals, arising from national and local policies (e.g. to prevent the apportionment of blame), rather than meaningful ways of tackling risk. This was compounded by a perceived disconnection between senior management and front-line staff in some of the hospitals. In the absence of formal PRA processes clinical staff frequently discussed patient safety issues, but used a less structured or systematic approach (e.g. the discussion of concerns in general meetings).

Where hospitals had risk registers for the logging and tracking of identified risks, some interviewees reported that there was a lack of local accountability for the population and management of the risk registers. Staff thus did not know how the registered risks were handled and used.

### Discussions

Findings from the literature review and the case studies show that, in general, the knowledge and practice of formal risk assessment on a system level for patient safety is limited and with variable maturity. The staff interviewed had mixed understanding of the use and potential values of the formal risk assessment. There was evidence that this is because the processes had become ritualistic rather than an opportunity for staff of all grades and other stakeholders (including the users of services) to engage in a meaningful dialogue on

the hazards to patient safety and to put in place actions for reducing unacceptable risks. This is ironic and unfortunate given the fact that one of PRA's potential values is in moving beyond ritual to making the real life processes of care delivery explicit so that the processes are amenable for improvement.

In the absence of formal processes for assessing and managing risks, staff used staff meetings or informal conversations to discuss their patient safety issues, including dealing with risks. These ways, nevertheless, were not done systematically or in a structured way, which meant that it was possible for risks to be 'lost' in the system and for staff and other stakeholders to disengage with managing risk and improving patient safety.

### Conclusions

PRA has the potential to be an important tool in addressing the urgent need to enhance patient safety. A preventative, data driven approach that enables healthcare providers to address human, technical and organisational factors by mapping their processes and identifying, eliminating or minimising hazards before they cause injury has worked well in other safety critical sectors. It fits with the needs of health services that are struggling to improve safety.

Despite this, our literature review and initial case studies show hospitals are struggling to make use of PRA. Healthcare has not yet reached the maturity of other sectors in en-

abling the assessment and management of system level risk as an integral part of all staffs' work. As a result, healthcare has too often yet to engage with PRA as more than a technical, tick box exercise. To change, healthcare organisations must address their culture, mindsets, competence and resources to enable all levels of staff to identify, assess and manage risk from a system perspective. This is a vital step in delivering patient safety for all.

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# OPERATING ROOM MANAGEMENT AND INFORMATION TECHNOLOGY

## Improving Efficiency and Safety with an Innovative Managerial Model

By Vanni Agnoletti, Matteo Buccioli, Emanuele Padovani, Rebecca Orelli Levy, Maria Teresa Montella, Giorgio Gambale

The operating room suite (OR) represents one of the most critical hospital units, both in patient safety and financial terms. In this article, we present a theoretical model, called ORMS (Operating Room Management System), embedded in a business intelligence environment, that is able to provide useful and easy-to-use information by using medical literature indicators for the management of ORs. The ORMS model, which is based on a tracking system of relevant events within the surgical path, presents three profiles of information that cover information needs of different actors: managers, anaesthesiologists and surgeons. After two years of utilisation of this model at Forlì Hospital, Italy, the performance has increased both in terms of efficiency and patient safety, proving that improvements in performance are possible by implementing innovative managerial models even in an era of constrained resources.

### Step One: Tracking the Surgical Path

This study was developed in house by the Forlì Local Health Authority (Forlì, Italy) within the Morgagni-Pierantoni Hospital. The purpose was to improve the level of efficiency and patient safety within the OR, and to ensure a fair distribution of hospital resources among healthcare professionals. The research team of the hospital performed two experiments for the data gathering. The aim of the first experimentation was to develop a system called 'data recording system' (DRS) to track the relevant steps of the surgical path process. Initially the research team set out simply to define appropriate timeframe that would be useful in measuring the efficiency of the OR (Table 1 column A), in line with scientific literature.

Personal Digital Assistants (PDA) were selected as hardware to support data entry activity. The PDA software was entirely developed by hospital engineers. The results of the first experimentation phase showed that our surgical path tracking approach was generally implementable; although the additional workload for operators was acceptable, there was potential for reducing it. The PDA software required re-engineering to adapt it more effectively to OR requirements. It also became evident that system improvement potential would be higher if the quantity of time tracking stamps was increased and entire tracks were registered without data lacks or interruptions.

With the results of the first experimentation in mind, the aims of the second experimentation consisted of tracking the whole 16 surgical path process steps proposed by Rotondi et al (Table 1 column B) and increasing the quantity and quality (reducing incompleteness in tracking) of data concerning the surgical process.

To overcome the data quality problems the hospital research team introduced a

series of improvements. The nurse anaesthetist was identified as the appropriate operator to track the different surgical path timeframes. The PDA software was re-designed to enable a closer alignment of time tracking with the logistic path of the patient. The adapted version of the software was aligned closer to OR logistics and suggests following time registration steps to the operator.

**Table 1: First and second trial: timings of the surgical path process**

A	B	C
1	ward exit	ward exit
2	entrance ORB	entrance ORB
3		identification by nurse anaesthetist
4		entrance anaesthesia room
5	start anaesthesia	start anaesthesia
6		end anaesthesia
7	entrance OR	entrance OR
8	start surgical procedure	start surgical procedure
9	end surgical procedure	end surgical procedure
10	exit OR	exit OR
11		entrance RR
12		exit RR
13		identification by healthcare assistant
14		transport ICU
15		exit ORB
16		ward re-entry

ORB: operating room block

OR: operating room

RR: recovery room

ICU: intensive care unit



# Sharps injuries prevention: an EU focus

In May 2013, an EU directive on preventing sharps injuries became legally binding. On behalf of **B. Braun**, Andreas Wittmann, who leads the department of technical infection control at the University of Wuppertal in Germany, talks to *Hospital* about the adoption of German safety guidelines based on the requirements of the new EU ruling.

Examples of best practice risk assessment

Risk by amount of blood exposure per device	Frequency of NSI in healthcare settings			
	Seldom	Sometimes	Often	Frequently
Potentially fatal	Central venous catheters	Peri-prosthetic catheters	Blood-drawing needles	Devices for blood drawing
Serious	-	Intra-muscular syringes	Butt catheters	Scapel blades
Medium	-	-	Subcutaneous syringes	Scalpel handles
Low	Needles for acupuncture	-	-	Pens for insulin

■ Risk is not acceptable – action to address the risk is very urgently required ■ Risk is not acceptable – action to address the risk is required ■ Risk is acceptable – standard precautions are applicable

## Why should hospitals reconsider their risk assessment on sharps injuries?

**Andreas Wittman:** During their daily routine, healthcare workers are exposed to a multitude of risks. In particular, the risk of infections caused by sharps injuries. Such blood exposures can lead to the transmission of most known pathogens; some risks, such as hepatitis B infection can be minimised through vaccination or post-exposure prophylaxis for HIV. In contrast, the only possible prophylaxis for hepatitis C virus currently is the prevention of exposure. Our own research shows that each employee faces the risk of suffering from a sharps injury every two years.

However, only a low number is reported to the institution responsible. The majority of these injuries either occurs during the disposal of contaminated needles or is a consequence of incorrect disposal. Consequently, a risk assessment that identifies all clinical processes where a sharps injury can occur is essential. This builds the basis for initiating necessary preventive measures.

*"Our own research shows that each employee faces the risk of suffering from a sharps injury every two years."*

## What should an accurate risk assessment take into account?

As required by the new EU directive, formal risk assessments need to be performed for all activities involving medical sharps. An accurate risk assessment takes into account the amount of

blood exposure per type of sharps device and the frequency of a sharps injury.

## How did you develop your best practice risk assessment matrix?

The risk of infection is a function of the probability that the patient's blood is infectious and the probability that enough pathogens are transferred via a needlestick. Measurements involving blood-filled, hollow-bore needles showed that a typical sharps injury causes the transmission of approximately 1µl of blood.

Our research shows that needle size influences the volume of blood transferred. Accordingly, large-lumen needles lead to the transmission of a higher volume of blood. Sharps devices carry a serious, or even fatal, risk through the amount of blood exposure.

## Which preventive measures are advisable?

Effective strategies for controlling injuries and occupational diseases should focus on:

- the substitution of major hazards by technical solutions
- engineering controls to protect workers from residual hazards.

Administrative controls to reduce any contact with blood are also necessary. The use of personal protective equipment such as gloves should be only the last line of defence.

References are available on request.

## Further information

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# Sharps Injuries Prevention

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The barcode reading system was identified as the simplest and fastest way to gather data using PDA, and led to a reduction in data entry errors as well as minimised obstacles to clinical activities. The PDA usage was extended with the introduction and development of a barcode reading system, enabling the scanning not only of patient bracelets, but also of cards which operators used to access software and register room

entering/exiting. Data was recorded by DRS as a simple output made up of a series of 12 to 16 steps along the pathway from the ward to the operating room. The number of outputs depends on the route the patient follows during the surgical pathway (Figure 1) and data is sent to ORMS as a series of outputs. DRS is able to read every step of the surgical path and all the delta-times between every step and the next.

### Step Two: The ORMS Model

ORMS can be regarded as practical model implemented in an analysis tool embedded in a business intelligence environment, which processes data to simple and understandable performance tachometers and tables. The analysis of data is based on Macario and Dexter's studies on ORB efficiency and our experience and analysis of tracked data. Data recorded by DRS is sent immediately via wi-fi connection to a central hospital server, which works as an interim storage. Systematically data is sent to the ORMS system where it is processed and added to previous data analyses.

Data quality is guaranteed by the introduction of two data quality rules. These data quality rules overcome basic data introduction problems by excluding non-reliable data before their analysis. The ORMS login (with password) is layered and every user has access to data depending on his/her professional The system is divided in three main profile types (Figure 2) M (manager), A (anaesthesiologist) or S (surgeon); each profile type can access required information in the profile content. Every profile includes a few subcategories where operators can access more detailed data analyses (Table 2). The first data output screen shows general information and guides the user towards more detailed data analysis as precise surgical procedure time of every single surgical unit. The hierarchy inside the software enables the user to have a complete insight of data regarding his/her profile in a very simple and "user-friendly way". The manager's profile is aimed at hospital managers and presents data concerning the entity of operations. Within the surgeons profile the model works out data that is important for surgeons and anaesthesiologists alike.

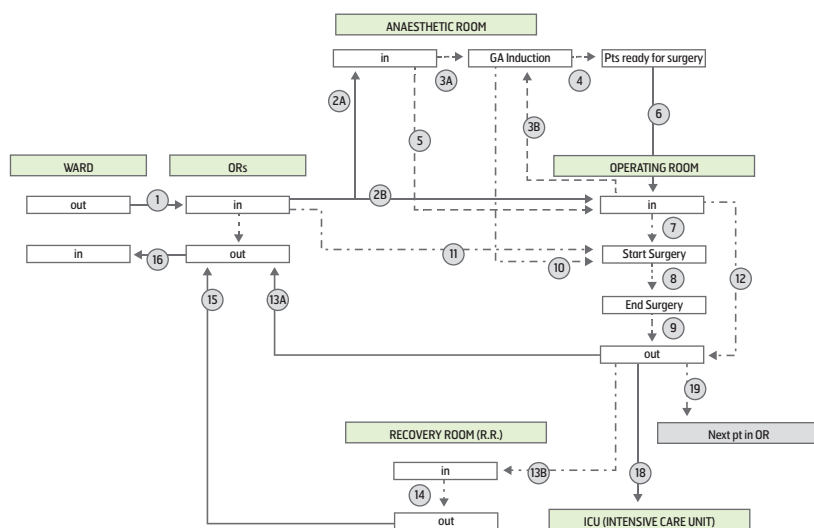
The manager's profile comprises five different data analysis subcategories. The first output screen (M1) is a global vision of the entire surgical activity in terms of total number of procedures, number of scheduled/unscheduled procedures, raw utilisation (total hours of cases performed ÷ total hours of OR time allocated), and a description of all surgical units' workload. M2 is a comparison of the productivity of each surgical unit. Variables used to describe the workload are: number of surgical procedures, number of procedures together with

**Table 2:** Categories and subcategories of data analysis

Window	Subject	Level	Type of data
M1	Facility	Global	Quantitative
M2	Productivity units	Comparison	Quantitative
M3	Productivity unit	Comparison	Performance
M4	Facility	Efficient indicators	Performance
M5	Surgical procedure		Qualitative
A1	Facility		Performance
A2	ORB	Pathway	Quantitative
A3	Surgical procedure		Qualitative
A4	Pathway	Timing	Quantitative
S1	Facility	Global	Performance
S2	Productivity unit	Comparison	Quantitative
S3	Surgical procedure		Qualitative
S4	DRG		Quantitative

**M:** Manager **A:** Anaesthesiologist **S:** Surgeon **ORB:** Operating Room Block **DRG:** Diagnosis Related Groups

**Figure 1:** Surgical path: from the ward to operating room and back to the ward



**Out:** patient is leaving  
**GA:** general anaesthesia  
**ICU:** intensive care unit  
**In:** patient is entering  
**Pt/s:** patient/s  
**A or B:** different solution from the same position  
**ORs:** operating rooms or surgical block  
**R.R.:** recovery room



duration, and logistic pathway (induction area, ward, recovery room or intensive care unit- ICU). M3 gives a view on surgical units in terms of number of procedures, surgical time average and logistic patient flow analysis (ward, recovery room or ICU admission). M4 displays the efficiency indicators and expressed as key performance indicators (6 dashboards that use the red-yellow-green traffic light-like scale of colours). M5 represents the Transport-Induction-Surgery-Awakening (TISA) graph. This graph maps the time it takes to bring the patient from the ward to ORB, the induction time, the surgery procedure time and the awakening time. Each time interval is referred to the surgical procedure chosen by the operator, so the TISA graph represents the total amount of time, expressed as average time and standard deviation required to perform a specific procedure.

### Implementing and Using the ORMS Model: Results

From January 2009 to December 2011, on an average year the DRS enabled the registration of about 5,000 surgical operations covering 97.7% of actual procedures. The total number of surgical procedures has increased from 4,892 in 2009 to 5,616 in 2010 and decreased to 5,120 in 2011. The DRS system has improved the efficiency of the operating room process and patient safety.

Raw utilisation has increased from 44% in 2009 to 56% in 2010 and decreased to 52% in 2011 with the same OR block time and hours of allocated block time.

The number of high complexity surgical procedures ( $\geq 120$  minutes) has increased in 2011 compared to 2010 and 2009 for General Surgical unit, ENT surgical unit, Urology surgical unit and Orthopedic-Traumatology surgical units.

The number of unscheduled procedures performed has been reduced while maintaining the same percentage of surgical procedures. The number of overtime events decreased in 2010 and in 2011 compared to 2009 and the delays expressed in minutes are almost the same.

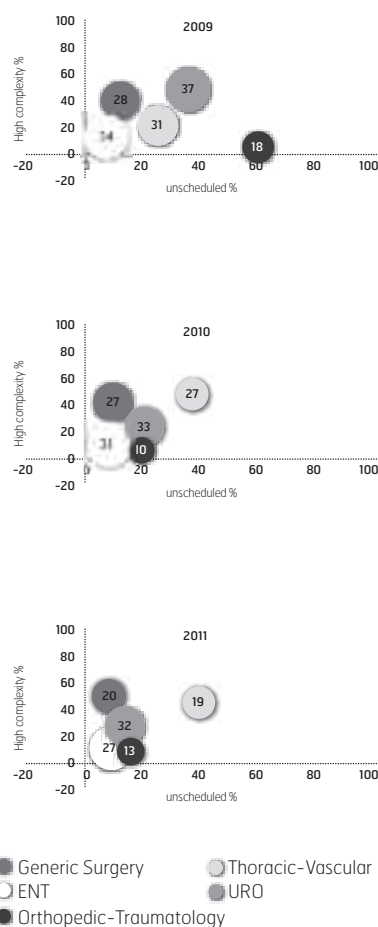
A direct link was found between the complexity of surgical procedures, the number of unscheduled procedures and overtime (cause-effect relationship). Figure 3 shows this link: the x axis represents the percentage of high complexity procedures and the y axis represents the percentage of un-

scheduled procedures. Bubble diameter represents the percentage of over time procedures. The graph shows the relation between the three variables; from 2009 to 2011 the bubbles go up or remain at the same height and move closer towards the y axis as the percentage of unscheduled procedures decreases. Therefore, despite a consistency in the complexity of procedures, surgical groups have been successful in reducing the number of unscheduled procedures and overtime.

No serious adverse events occurred in three years compared to the 2007-2008 period, when one event of wrong site surgery and 2 near misses of one WSS and of one wrong person surgery occurred.

For the above mentioned reasons, the model has proved to be successful and has been awarded as finalist at the European Public Sector Award of 2011 by European Institute for Public Administration.

**Figure 3:**  
Three years correlation: complexity - unscheduled procedures - over time



### Conclusion

The ORMS model represents a successful experiment of the introduction of managerial innovation in a public hospital in Italy, a country that is considered one of the laggards in terms of introduction of effective managerial models within its public sector. But it contains interesting insights even for more advanced countries. In fact, it is interesting to note that although the project was developed by healthcare professionals, it aims to align managerial and professional goals. This is an important step forward, when compared to solutions typically based on a "trade-off" between efficiency (managerial side) and effectiveness (professional side).

Provides solutions for patient safety and risk management. The results of this project are producing a "domino effect" not only on surgical or anaesthesiological or nursing activities, but also on how we understand the process as a whole. James Harrington states that we can't improve what we can't measure; we have improved and strive to improve even further so that our daily work benefits from efficiency, cost reductions and work comprehension. It is our belief that a secondary effect of our system is the forging of a new way of thinking among team members.

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# CONVERTING TO SAFETY-ENGINEERED MEDICAL DEVICES: COMPLIANCE WITH THE NEW EU DIRECTIVE ON SHARPS INJURY PREVENTION

By Percy Stubbs

In recent years, much work has been done by healthcare worker associations to highlight the danger of sharps injuries, which are described by the European Parliament as “one of the most serious health and safety threats in European workplaces and estimated to cause one million injuries each year”. Sharps injuries are the most frequent occupational hazard faced by healthcare workers, with 45% of these occurring amongst nursing professionals and 40% amongst other medical professionals. A European country study reveals that the highest risk area for the likelihood of needlestick injury is venous blood-drawing (>38%); and that only 20–50% of all needlestick injuries are reported.

Such injuries are particularly dangerous in view of their potential for transmitting life-threatening blood-borne pathogens, including Hepatitis B (HBV), Hepatitis C (HCV) and HIV. Most injuries are from hollow-bore needles used in injection syringes, blood-drawing devices and intravenous catheters – the everyday tools of the healthcare worker trade and the most deadly, as they contain residual blood. Upon suffering an injury from a contaminated needle or sharp, the risk of infection is one in three workers for HBV, one in 30 for HCV and one in 300 for HIV. These injuries have an enormous psychological impact, and potentially serious health impact.

There is now EU legislation for the introduction of compulsory healthcare worker protection requirements. The EU Employment and Social Affairs Ministers adopted a new Directive, which is designed to help prevent healthcare workers from sustaining injuries from medical sharps such as hypodermic needles and blood collection devices. The Directive was published in the Official Journal of the EU in June 2010 and the deadline for implementation into national law in all EU countries was May 2013.

Both the public and private healthcare sectors are affected by the legislation, which is designed “to achieve the safest possible working environment” in hospitals and wherever healthcare activities are undertaken and “by preventing injuries to workers caused by all medical sharps (including needlesticks)”. The Di-

rective declaration specifically mandates better training, better working conditions and the general use of safer medical instruments incorporating sharps protection mechanisms. The Directive confirms employers have a responsibility to protect their employees from sharps injuries and, therefore, compliance is mandatory.

This article discusses the management of risk and cost of needlestick injury treatment in order to help general management, occupational health managers and health and safety heads in public and private sector healthcare organisations address the business case for conversion to safety-engineered medical devices.

## The Costs Associated with Sharps Injuries

Over the last ten years there have been a number of discussions and studies on the costs associated with sharps injuries. Most identify the costs purely as the expense of treating the injured party, with the typical treatment sum varying between a few hundred and a couple of thousand Euros.

However, these academic papers specifically exclude factors such as staff time off work, the cost of resignations and wasted training investment when staff leave, or greater recruitment costs because of increased staff churn. For serious sharps injuries resulting in infection by a blood-borne pathogen, costs that could be avoided are much higher. The cost associated with each inocula-

tion injury has been estimated to range between €15,000 to €1,000,000 for an injury resulting in transfer of a blood-borne virus.

## Adopting Safety-Engineered Medical Devices Makes Good Business Sense

A wide variety of studies demonstrate that the adoption of safety-engineered medical devices, such as catheters and syringes, radically reduces injury levels. Now that the use of safety-engineered medical devices is specifically cited in European law, and despite pressure on health budgets across Europe, many healthcare organisations have already constructed a robust case for conversion to safety-engineered medical devices. Healthcare organisations which have already converted recognise that adoption of safety-engineered medical devices is integral in their efforts to provide a safer working environment for staff, to eliminate the cost of treatment and staff absence, and to avoid damaging and expensive legal action. In general, the cost of introducing safety-engineered medical devices to prevent needlestick injuries is estimated to be roughly a quarter of the cost of treating injuries.

Studies typically see conversion to safety-engineered medical devices as providing a viable return on investment, because their use significantly reduces the risk of sharps injuries and the associated costs, as well as being more attractive to

# Working together to improve healthcare worker safety

and comply with the new EU Directive 2010/32/EU



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healthcare workers wanting to work for reputable institutions with high quality standards. This is supported by experience in Italy which demonstrates that adoption of safety-engineered medical devices, in conjunction with training and awareness, is extremely effective in reducing sharps injuries (reduction ranges from 63% to 100% depending on the device used), and that adoption of safety-engineered medical devices is both affordable and cost effective.

Although adoption of safety-engineered medical devices does have an additional initial investment implication, that cost is not insurmountable. A European study, for instance, found that “the direct cost increase [of using safety-engineered medical devices] was €0.558 per patient in the emergency department and €0.636 per patient-day in the hospital wards”, but that “proper use of [safety] engineered devices to prevent percutaneous injury is a highly effective measure to prevent these injuries among healthcare workers.”

One Spanish study also found that “savings in sharps injuries care outweigh additional costs of certain [safety] engineered sharps injury prevention devices.” A Swedish study reported that “the expected number of injuries [in Sweden] that could be avoided by introducing safety-engineered medical devices was estimated at 3,125 and the corresponding expected cost offset at €850,000.”

In Spain, five of the autonomous regions have now made the use of safety-engineered medical devices a legal requirement. Evidence of the country’s leading role in this respect is found in a study conducted some years ago, by the General Council of Hospitals, which identified some €30 million/year in savings from conversion to safety-engineered medical devices.

Most organisations, private and public, however, will also be motivated by the ethical duty to provide staff with a safer working environment, something that often improves staff loyalty, motivation, productivity and recruitment. There is a growing body of evidence in the UK that what is good for staff is good for patients, with a recent report on NHS health and well-being stating that “organisations that prioritised staff health and well-being performed better, with improved pa-

tient satisfaction, stronger quality scores, better outcomes, higher levels of staff retention and lower rates of sickness absence”. For private medical laboratories in particular, the whole brand image of a safer environment also plays a role in attracting patients.

### Leading the Conversion to Safety-Engineered Medical Devices

Medisch Centrum Haaglanden (MCH), a leading clinical teaching hospital in The Hague, is dedicated to the highest standards of patient care, as well as to providing its staff with the best working environment. Occupational Health at MCH has always monitored needlestick injury, and desired increased staff safety, as well as greater comfort for patients.

This led to the Oncology and Nuclear Medicine departments at one of its two locations, MCH Westeinde, converting in July 2007 to the exclusive use of a safety-engineered medical intravenous device – a closed IV catheter system. Used for peripheral venous access, the all-in-one safety-engineered medical system is designed to reduce needlestick injury by using passive needle-shielding technology – where the shielding mechanism automatically activates without any need for manual activation by the practitioner – that does not compromise the insertion techniques. It is also designed to reduce insertion attempts and limit healthcare workers’ exposure to blood with its innovative blood-containment system that helps minimise blood leakage from the catheter hub.

MCH chose an extremely secure system, where the needle becomes ‘sealed off’ after intravenous insertion. The needle lies slightly flatter on the skin than other products, and the cannula adapts more closely to the patient’s movements, reducing the risk of phlebitis.

Following the successful conversion of the Oncology department, the Intensive Care unit at MCH Westeinde is also planning to start using all-in-one safety-engineered medical IV systems. Word of mouth, and increased awareness of the importance of safety, is also leading to safety product trials being set up in other departments. The main priority is staff safety, but safety and infection prevention come hand in hand.

The new EU Directive specifically requires each hospital to undertake a risk assessment process, which MCH already has in place, in the form of a specific Hazardous Incidents and Critical Occurrences Risk Inventory. Any needlestick incident is thoroughly investigated internally, and corrective actions are implemented as required (MCH recently replaced its sharps containers with safer units). In order to be compliant with the new Directive, MCH only needed to make minor adjustments and developments, as the hospital is already on track to implement a total safety policy in the near future.

### Conclusion

Forward-thinking healthcare organisations in both public and private sectors, such as Medisch Centrum Haaglanden, that have chosen to convert to safety-engineered medical devices have recognised a compelling business case for conversion to safety-engineered medical devices straight away. Their reasoning usually combines economic, risk and ethical factors. They understand that NSI costs can be substantial, when treatment, lost working time and staff turnover are taken into account. They have constructed a business case for conversion to safety-engineered medical devices that is at least cost-neutral, if not delivering actual savings. And finally, these leading healthcare organisations want to create an environment for staff and clinicians that provides proper protection against injuries that are, at best, distressing, and at worst, can ruin careers and destroy lives.

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## IMPROVED TEAMWORK IN THE OR BOOSTS PATIENT SAFETY

A recent scientific statement from the American Heart Association recommends improving communication and strengthening teamwork among cardiac surgery teams to reduce preventable mistakes in the cardiac operating room.

The statement reviewed evidence-based research focused on communication within and between teams, the physical workspace and the organisational culture of the cardiac operating room and provides recommendations for improving patient safety. It is published in *Circulation*, a journal of the American Heart Association.

Statement highlights include:

- Using checklists and/or briefings before every cardiac surgery, followed by postoperative briefings;
- Developing institutional policies to define disruptive behaviours by medical professionals in all hospital settings, with transparent, formal procedures for addressing unacceptable behaviours; and
- Establishing an institutional culture of safety by implementing a robust quality improvement system that encourages input from all team members, in order to contin-

uously identify and correct safety hazards.

The authors note that the critical elements of teamwork can be summarised by the Six Cs:

1. Communication;
2. Cooperation;
3. Coordination;
4. Cognition;
5. Conflict resolution; and
6. Coaching.

For more information, please visit: [www.heart.org](http://www.heart.org)

## BACKGROUND NOISE IN THE OPERATING ROOM CAN IMPAIR SURGICAL TEAM COMMUNICATION

Ambient background noise—whether it is the sound of loud surgical equipment, talkative team members, or music—is a patient and surgical safety factor that can affect auditory processing among surgeons and the members of their team in the operating room (OR), according to a study published in the *Journal of the American College of Surgeons*. The findings are the first to demonstrate that a surgeon's ability to understand spoken words in the OR is directly affected by noise in the environment.

"The operating room is a very fast-paced, high-demand, all senses running on all cylinders type of environment," said study co-author Matthew Bush, MD, assistant professor of surgery at the University of Kentucky Medical Center, Lexington. "To minimise errors of communication, it is essential that we consider very carefully the listening environment we are promoting in the OR."

To assess the effects of ambient noise on communication in the OR, the researchers created a noise environment similar to that of an OR and tested 15 surgeons with one to 30 years of operating experience. The surgeons' ability to understand and repeat words was tested using the Speech In Noise Test-Revised (SPIN-R) under four different listening conditions typical of OR environments. These conditions included quiet, filtered noise through a surgical mask and background noise both with and without music. Subjects were tested in two situations: engaged in a specific surgical task and task free.

The study showed a significant decrease in speech comprehension with the presence of background noise when the words were unpredictable. In addition, the surgeons demonstrated considerably poorer speech comprehension in the presence of music compared with a quiet environment or one with OR noise present. However, the addition of music became a significant barrier to speech comprehension only when the surgeon was engaged in a task.

The researchers concluded that OR noise can cause a decrease in auditory processing, particularly in the presence of music. Further, the ability to understand what is being said becomes even more difficult when the conversations carry critical information that is unpredictable.

Currently, miscommunication is one of the most frequently cited causes of preventable medical errors. For this reason, there is a growing interest in identifying overlooked variables that can lead to communication breakdowns among healthcare professionals.

Therefore, these study results have important implications in the real world because surgical teams carry on critical conversations during surgical procedures that often include discussions about medications and dosing as well as the blood supply that should be on hand. Because some of these details might sound similar, clear communication is crucial to avoiding medical errors (ie: a request for the drug heparin might be heard as Hespan).

"Our main goal is to increase awareness that

operating room noise does affect communication and that we should foster the best environment in which we can communicate better," Dr. Bush explained. "This effort means that the surgical team needs to work diligently to create the safest environment possible, and that step may mean either turning the music off or down, or limiting background conversations or other things in the environment that could lead to communication errors and medical mistakes."

In future studies, the researchers plan to look at a larger population of surgeons, especially those who are hearing impaired, as well as other operating team members such as anaesthesiologists and nurses.

"I think it's important to demonstrate the effect of environmental operating noise on communication on a variety of different players in the operating room setting," Dr. Bush said. "Another step from here is to not only see how noise affects our understanding of speech, but how it affects our tasks, how it affects our ability to perform surgical procedures efficiently and effectively. That is a different stage and different study design completely, but these questions are all ahead of us as we investigate the effects of environmental sound on operating room communication."

For more information, please visit: [www.facs.org](http://www.facs.org)

## TECHNOLOGY/EQUIPMENT ISSUES ACCOUNT FOR ALMOST ONE IN FOUR OPERATING ROOM ERRORS

Around a quarter of all operating room errors are caused by technology/equipment problems, indicates an analysis of the available evidence, published online in *BMJ Quality & Safety*. The report indicated that the inability to use the technology/equipment, lack of availability, and faulty devices/machines made up the bulk of the problems.

The researchers methodically searched for published studies on errors and problems arising in operating rooms in electronic databases. After applying a quality assessment technique, they found 28 studies out of a total of 19,362 pieces of research that were suitable for inclusion in the analysis.

Technology/equipment issues cropped up in an average of 15.5% of malpractice claims. Across all the studies, an average of 2.4 errors was recorded for each procedure, although this figure rose to 15.5 when an independent observer recorded the errors. Equipment and/or technology issues accounted for almost a quarter (23.5%) of these errors.

Eight studies categorised the different types of equipment error: the configuration or settings caused problems in more than four out of 10 cases (43.4%); availability of the required device/machine was an issue in just over 37% of cases; while in almost a third of cases, the equipment or technology wasn't working properly.

Four studies looked at the severity of mistakes in the operating room, classifying a fifth as "major", of which equipment failures accounted for a fifth, compared with 8% and 13%, respectively, for communication and technical failures.

While the type and rate of equipment failures varied widely, depending on the study and surgical procedure involved, surgery that relied heavily on technology had higher rates of problems.

Three studies reported on the deployment of an equipment/technology checklist before surgery and showed that this could halve the error rate, prompting the authors to rec-

ommend that a generic equipment check should become routine practice, and be included in the current World Health Organization Surgical Safety Checklist.

The authors appreciate that technological advances have improved the chances of survival and quality of life of people undergoing surgery. But they caution: "The increasing use of technology in all surgical specialties may also increase the complexity of the surgical process, and may represent an increasing propensity to error from equipment failure."

Previous evidence suggests that medical errors affect up to 16% of all patients admitted to hospital, around half of which are attributable to surgical procedures, they add.

*Source: Surgical technology and operating-room safety failures: a systematic review of quantitative studies Online First doi 10.1136/bmjqs-2012-001778*

## STUDY QUESTIONS EFFECTIVENESS OF LESS-INVASIVE SURGICAL PROCEDURE TO DETECT CANCER IN LYMPH NODES NEAR BREAST

Judy C. Boughey, M.D., Kelly K. Hunt, M.D., and colleagues for the Alliance for Clinical Trials in Oncology conducted a study to determine the false-negative rate of sentinel lymph node surgery in patients with node-positive breast cancer receiving chemotherapy before surgery. A false-negative is occurrence of negative test results in subjects known to have a disease for which an individual is being tested.

Axillary (the armpit region) lymph node status is an important prognostic factor in breast cancer and is used to guide local, regional, and systemic treatment decisions. Accurate determination of axillary involvement after chemotherapy is important; however, removing all axillary nodes to assess for residual nodal disease exposes many patients to the potential side effects of surgery and, potentially, only a subset will benefit. To avoid the complications associated with axillary lymph

node dissection (ALND), it is preferable to identify nodal disease with the less invasive sentinel lymph node (SLN) surgical procedure, which results in fewer side effects, according to background information in the article.

The American College of Surgeons Oncology Group (ACOSOG) Z1071 trial enrolled women from 136 institutions from July 2009 to June 2011 who had various stages of breast cancer and received neoadjuvant (before surgery) chemotherapy. Following chemotherapy, patients underwent both SLN surgery and ALND. The primary end point for the study was the false-negative rate of SLN surgery after chemotherapy in women who presented with cN1 disease (disease in movable axillary lymph nodes). The researchers evaluated the likelihood that the false-negative rate in patients with two or more SLNs examined was greater than 10 percent, the rate expected for women

undergoing SLN surgery who present with clinical node-negative (cN0) disease.

Seven hundred fifty-six women were enrolled in the study. Of 663 evaluable patients with cN1 disease, 649 underwent chemotherapy followed by both SLN surgery and ALND. The researchers found that the false-negative rate was 12.6 percent with SLN surgery and exceeded the prespecified threshold of 10 percent. "Given this [10 percent] threshold, changes in approach and patient selection that result in greater sensitivity would be necessary to support the use of SLN surgery as an alternative to ALND in this patient population."

*Source: Judy C. Boughey. Sentinel Lymph Node Surgery After Neoadjuvant Chemotherapy in Patients With Node-Positive Breast Cancer. JAMA, 2013; 310 (14): 1455 DOI: 10.1001/jama.2013.278932*



## HOSPITAL COST OF ROBOTIC OR CONVENTIONAL OPEN-CHEST MITRAL VALVE REPAIR SURGERY IS SIMILAR

The total hospital cost of mitral valve repair surgery — from the time a patient is admitted to the hospital until release — is similar, whether performed through small port incisions using robotic equipment or via the conventional open-chest method, a Mayo Clinic study of 370 patients found.

Importantly, robotic surgeries were just as safe as conventional open procedures, but patients who underwent robotic mitral valve repair recovered more rapidly and returned home earlier than patients who had open-chest surgery. The results of the study also reflect systems innovation efforts designed to reduce the cost of high-technology cardiac care. The findings were published online in Mayo Clinic Proceedings.

of the body as efficiently.

In robot-assisted cardiac operations, small incisions are made on the right side of the chest, and the surgeon conducts surgery using a robotic telemanipulator system, which includes a high-definition camera and thin mechanical arms that act as extensions of the surgeon's eyes and hands. In open-chest surgery, the surgeon cuts down the centre of the chest along the breastbone to expose the heart.

"There is concern that the adoption of new technology in the operating room will increase costs," Dr. Suri says. "That does not need to be the case. While total hospital costs were slightly higher initially for robot-assisted mitral valve repair surgery, we found that with increased experience and changes in our care

terms innovations were implemented), total cost — from admission to dismissal — for robotic surgery was slightly higher (\$34,920) than for open-chest surgery (\$32,650), but during the post-improvement period (after systems innovations were implemented), the median cost of robotic repair became similar to open-chest — \$30,606 and \$31,310, respectively.

The length of hospital stay consequently decreased in the patients who had robotic repair surgery. In the pre-systems innovation period, these patients were in the hospital for an average of four days, compared with an average of 5.6 days for open-chest patients. In the post-improvement period, the time frame was 3.7 days compared with 5.7 days, respectively.

"Studies like this one are important in health-



"These results reflect an important opportunity to decrease cost and improve quality of U.S. healthcare when technologically complex procedures are performed by well-trained, high-volume teams capable of leveraging the potential of less invasive approaches for patient benefit," says lead author Rakesh Suri, M.D., D.Phil., a cardiovascular surgeon at Mayo Clinic in Rochester.

Patients undergo mitral valve repair surgery for severe mitral valve regurgitation, a common condition that is increasing in frequency. By 2030, an estimated 5 million Americans will have moderate to severe mitral valve regurgitation. The condition occurs when the mitral valve does not close properly, causing blood to be pumped backward instead of forward. Oxygen-rich blood is thus unable to move through the heart to the rest

processes, there was a steady and significant decrease in costs over time as we progressed through the learning curve."

In this study performed between July 2007 and January 2011, 370 patients who underwent mitral valve repair surgery (185 robotically and 185 open-chest) were compared. All patients had successful surgeries and there were no early deaths. Halfway through the study period, in 2009, systems innovations were implemented, such as increased efficiency in the operating room and expedited postoperative recovery efforts that allowed patients who underwent robotic repair to have their breathing tube removed in the operating room. They also were more likely to be able to move to a hospital room the day of the surgery, decreasing the time spent in a more expensive intensive care unit.

In the pre-improvement period (before sys-

care today because they can show us that innovation can lead to reducing costs and improving patients' outcomes," says Veronique Roger, M.D., a study author and the medical director of Mayo Clinic's Centre for the Science of Health Care Delivery.

The Mayo Clinic Proceedings study follows a Mayo Clinic study in *The Annals of Thoracic Surgery* in 2012, which found that robotic repair patients returned to work quicker than open-chest patients (33 days and 54 days, respectively). In addition, robotic repair was associated with slightly improved quality of life indicators compared with open-chest surgery during the first weeks after surgery, but indicators became indistinguishable by one year.

**For more information, please visit:**  
[www.mayoclinic.org](http://www.mayoclinic.org)

# THE SUSTAINABLE OPERATING ROOM

The Operating Room (OR) is a central part of the hospital environment. It is high risk and high cost, but there are many initiatives out there to make the OR more sustainable in terms of the environment and also cost-effectiveness. The OR uses the most supplies in a hospital and studies have shown that between 20–30% of hospital waste can be traced back to the OR.

## “Greening the OR”

Practice Greenhealth’s initiative “Greening the OR” aims to identify best practices and substantiating data around products and practices that reduce waste, increase efficiency, increase worker and patient safety and reduce environmental impact. The initiative has reviewed eight strategies so far that significantly reduce cost and waste for facilities.

The initiative focuses on collaboration and aims to envision what the ‘green OR’ of the future will look like in terms of the products and processes used and help managers make this vision a reality. The focus is on sharing data, tools and resources on sustainability in the OR in collaboration with all stakeholders involved: managers, surgeons, sustainability leaders, the supply chain and service providers. It is said that the financial benefits of these programmes are significant, with millions of dollars in potential savings.

Indeed, Practice Greenhealth stress that not all green practices require large capital investments and that they can actually cut costs. A change in OR culture for example can actually result in cost-savings. This could be better leadership or the better understanding and use of data. “Going Green” is quickly becoming associated with good business practice in the long term, with companies focusing on their responsibility. It is also said to improve customer satisfaction.

This year Practice Greenhealth held its first Greening the OR symposium. The event described the environmental footprint of the OR and its impact on human health and presented the business case for a green OR highlighting the numerous benefits (cost, safety, engagement and environmental). Presenters discussed ideas such as reusing linens, minimising regulated medical waste, bluewrap reduction and reprocessing.

The “Greening the OR” initiative has many resources and educational opportunities. For example, the checklist can be used as an internal audit for your OR to assess the extent of your green practices and showing where the opportunities lie in terms of products and processes.

**For more information on the initiative and to sign up, please visit:**

<https://practicegreenhealth.org>

## Leadership

It is clear that strong leadership is essential to change processes or the culture of the operating room. Any changes made by the management need the support of the surgeons involved and the wider surgical team to be successful. Practice Greenhealth is aware of this and has set up the Council for Environmentally Responsible Surgery (CERS). This initiative aims at increasing peer leadership and peer-to-peer learning among physicians in the operating room (OR) supporting sustainability efforts.

Physicians in the OR play a key role in decision-making within the OR. They are involved in choosing supplies and also operational process changes and are becoming more aware of the green implications of their choices as well as costs and safety and quality. The CERS provides engaged physicians with a forum to discuss these issues, to learn from their peers and collaborate with those in other institutions.

## Cutting Costs in the OR

There are many tips and programmes out there to help reduce costs in the running of the operating room. Like the Greening the OR initiative, common advice includes collaboration and communication with physicians, benchmarking procedures and processes, reviewing costs regularly and shopping around for better deals.

In the past, many hospitals have favoured the use of disposable surgical instruments. The advantages are numerous including antiseptis improvement, easily trackable costs and the elimination of the post-surgical sterilisation process. However, the use of disposables can also increase costs. This is a particular issue in today’s economic climate. Disposables can be more expensive to buy and also safely dispose of. They also encourage waste. For these reasons reusable instruments are now making a comeback. The jury may be out on whether they save money or not but reusable instruments are said to be more environmentally friendly and so definitely worth further consideration.

Cost cutting can also be achieved by the standardisation of surgical instruments. If hospitals stock six different types of instrument from different manufacturers the cost of maintaining the inventory would be very high. Standardisation negates this problem, with many companies offering reduced prices and special deals for hospitals willing to standardise. Surgeons may resist these changes but clear communication and a strong evaluation process should allay fears. It is widely believed that standardisation reduces costs in the long term such as inventory and training costs. Staff competence can be higher and institutions can depend on stronger manufacturer support.

Another way to cut costs in the OR is to eliminate any waste in custom packs. If surgeons open a custom pack they must use everything inside it, if not this is a waste of money. An annual review of custom packs with physicians can reveal which items are needed and which are not. The unneeded items can then be eliminated from the custom packs in the future. Another obvious and yet often overlooked technique in saving money in the OR is to review your costs. It is important to review contracts and bills to ensure you are paying the correct amount. Shopping around with other companies can also reveal who offers the lower prices.

Finally, any changes within the OR must be supported by the surgeons. Without their cooperation new initiatives and processes will fail. Changes to daily routine are often met with distrust but clear communication and evaluation should ensure physicians understand both the need for cost-cutting measures and also the benefits for the OR and the hospital.

## Sources:

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[www.beckersasc.com](http://www.beckersasc.com)

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## » CONTINUES FROM PAGE 30

ment of small meeting points, conversation stations and niches, which divide a long and unmanageable hallways into smaller, clearer sections without the intense traffic of busy staff members. This establishes a private space in the middle of the chaos and anxiety of the hallway, where the patient becomes more visible. In this way, a place for sensory engagement and time between patient and nurse is created. This initiative can facilitate communication, trust and safety for the patient, and strengthen their experience and recovery.

The patients' need for privacy and their individual behaviour is of course personal, and physical settings can be a factor in aiding or inhibiting these relationships. The architecture of the hospital and limited physical spaces can provoke feelings of unfamiliarity and 'wrong-ness'. They can be so stressful that the patient hurries to get out of the hospital, perhaps without providing the staff with the necessary information or without having understood everything they have been asked or informed about.

If the architecture and the physical setting of the hospital are not prioritised with a focus on productivity and efficiency, the nurses' work environment becomes strained, and they are prevented from delivering care in a quality-filled and result-orientated manner. This leads to negative

treatment outcomes for the patient as well as low work satisfaction for the nurse, and can have serious consequences for the socio-economics of the health system.

With this in mind, we at ArchiMed are in no doubt that there is room for improvement, and that the building boom in the healthcare sector during the years to come ought to take these relationships seriously – from the point when the programme is devised, when the competition proposal is assessed, when the project proposal is adopted, through the obligatory cost-cutting periods, and right through until the building is in use and undergoing continuous redesign and adaption.

One of the areas where there is great potential for improvement is the meeting point of the different professionals – where nurses, doctors and other staff meet the architect, the engineer and the designer. Health professionals must help the building professionals to create the best possible solutions for the exact functions, processes and work practices a hospital contains. And the building professionals have to improve the way they explain the innovative value of their concept in a way that makes sense for the health professionals.

In many ways, a hospital is a very complex and changeable system. Describing such a place to people who are not used to moving through it demands precision and care. Not at least when this description forms the basis on which the architect's professional competence can unfold. A

professional competence that allows the architect to think up new spatial coherences and opportunities that can benefit the staff, the patients and the economy of the hospital.

The call must be made to support the different professionals in forming a closer cooperation, thereby exploiting each competence and role to the fullest. The architect must trust that the nurse has the best insight in order to describe the optimal nursing practices, and conversely the nurse must trust that the architect is fully capable of translating words into spaces. The nurse does not need to be an architect, but the cooperation should be trusting and challenging in order for the healthcare system to evolve in everyone's interest. In this way alone can we create a healthcare system that provides the best results and value for money.

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# GETTING AHEAD BY GETTING ALONG

## Managing Challenging Conversations

By Stephen Baker

**Many guides to effective leadership in medicine concentrate on structure. How the department should be organised and how authority should be delegated are frequently addressed. Other advice dispensers rightly focus on the formation and implementation of the realisation of your mission. Their purpose is to provide helpful suggestions to formulate goals and objectives that derive the most benefit for the department in general as well as to meet the aspirations of faculty, the education of trainees and the care of patients.**

These suggestions and directives are often overarching, elevated at a metaphorical height above daily activities. They are unconcerned with the constant daily hubbub happening on the 'ground'. There the chair will be confronted with a continual stream of conversations, some trivial, others more significant and a few others surprisingly crucial even if they are informal and ad hoc in presentation.

But it is just these colloquies in which your

mettle as a leader can and will be tested. How to proceed without deflecting from your aims and how to frame these encounters are just as much a part of the job as the planning for and the effectuating of grand strategic initiatives.

**Keeping Control**

First, a word of caution. Your effectiveness as chair depends on the maintenance of

control. It is established and perpetuated not so much by maintaining an ironclad monopoly on agenda, because in a seemingly casual conversation, the agenda is provided by the supplicant or the critic who beseeches you. But, very soon in any exchange, you must project and protect your ethos or you will lose control and as such your capability to manage the situation will erode.

An example: a faculty member or a resident accosts you with the complaint "I have



been placed on duty during the afternoon of the annual picnic held on Monday afternoon. It is unfair!" You could acquiesce and find a weaker person to switch with him. Or you could inform him otherwise, by saying, "It is not unfair - no-one is at fault for your being unable to attend. It is merely unfortunate." No redress is required. "Next time someone else will be assigned". Making clear the unfair-unfortunate dichotomy provides

pose of taxes is not always punitive but rather a necessary way to supply services, more often a boon than a bane.

### Receiving Suggestions

As a leader, you must listen not only to complaints but also, at times, to suggestions to improve things. Typically, they are presented as putatively well-reasoned, seemingly

lated it? Or should you ponder it for a while?

After that, when you have allowed yourself to think it through somewhat you might follow this protocol of engagement by channelling the dialogue according to a programmatic schedule of tenses.

First, ask him (or her) to recast the idea not in declarative terms, but rather in the subjunctive, "if this, then that", instead of permitting him to declare it without qualification forcing you to accept it or reject it without qualification. With a subjunctively offered proposal, you can perceive and discuss apparent consequences hypothetically.

And those consequences are more likely to emerge when it is no longer a take it or leave it proposition. If the ill effects of the idea become prominent at this stage it is likely that the proposer will go away disappointed, but he will not go away mad.

If on the other hand there seems to be merit in the notion, continue the analysis by now invoking the conditional tense allowing for further consideration without necessarily giving your assent. The dialogue may then be "if this would occur, then that would happen, would it not?" At this stage you can still reject it without fomenting ill feelings. And if you then decide to proceed further, move to a formulation, such as, "Let us now do the following to test it out." No decision is rendered even at this stage. However, along the way you have respected the enthusiasm of the proposer but you have not yet agreed to embrace the proposal. And by the concern and consideration you have shown you have established a congenial relationship you can then build upon to heighten the esteem by which you wish and need to be held.

### Conclusion

Learning to manage the conversation then is not merely an option. For your success it is an obligation and a skill you can acquire by thinking tactically, listening and speaking tactfully and deciding cautiously.

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## one of the under-emphasised but requisite capabilities that make a leader successful is his or her skill in metaphor management

you with a position on the high road. The complainer is then seen as selfish not only by you but also by him. Next time he will take into account that distinctive disjunction before challenging you because his complaint no longer has moral heft.

### Coping with Exaggeration

Another problem to parry is the use of hyperbole as a persuasive device. You are told, "The situation I have been placed in is a "disaster". If you allow that word to define the discussion, you will be manipulated by the exaggeration. It is then incumbent on you to restore the advantage by saying, "Wait a minute, that is not a disaster. Chernobyl and the Northern Japan tsunami and flood were each disasters. Rather, you are telling me about a difficulty not a cataclysm. Let's try to resolve or ameliorate it by placing it in the proper context." It is often amazing how the tenor of the conversation can become less strident when you have set the appropriate terms.

In that regard, one of the under-emphasised but requisite capabilities that make a leader successful is his or her skill in metaphor management. In the first presidential campaign of George Bush, the Republican Party framed the economic debate in terms of 'tax relief'. As Steven Pinker in *The Stuff of Thought* has pointed out, the tax then was portrayed as a disease, the relief the cure. The Democrats only responded within the context of Bush's metaphor and thus could not convince the electorate that the pur-

reasonable offerings to make things better. Often they are stated as conferring no special advantage to the author of the remarks, even though you know that most of the time hidden somewhere in the proposal, the promoter of the supposed opportunity is not entirely altruistic.

## Learning to manage the conversation then is not merely an option. For your success it is an obligation

Many of these suggestions are hare-brained or at least unrealistic while a few are truly beneficial if implemented. You know too that very often the unintended consequences will be more profound than the stated objective. Yet those insidious and frequently counterproductive happenstances will not immediately disclose themselves. What to do?

Should you summarily dismiss the idea and then have to deal with the hurt feelings of the idea's promoter? Should you uncritically accept it, swayed by the power and earnestness of the suggestion or the enthusiasm of the staff member who articu-



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# CONNECTED HEALTH EMPOWERS PATIENTS AND PROVIDERS

By David Pettigrew

**Connected health is poised to transform the way services are delivered. Sagentia's David Pettigrew examines how technology innovation is successfully making the transition to commercial reality.**

Ageing populations and the growing prevalence of chronic diseases are placing health-care infrastructure under greater pressure than ever before. The UK's Department of Health estimates these issues could require £5 billion in additional expenditure by 2018, yet NHS budgets are currently allocated on a flat-cash basis.

At a time of significant budgetary constraint, healthcare providers must find new ways to reduce costs and increase the efficiency and quality of care. Treating patients quickly and effectively frees-up hospital beds and critical resources. Ensuring underlying health issues are properly addressed and encouraging lifestyle improvements drives reductions in both the number of people visiting healthcare providers and repeat visits.

Technology is proving a key enabler in realising these aims, particularly in the form of connected health. Broadly defined as the use of technology to provide healthcare at a distance and improve speed of response, connected health is seeing new levels of capability being realised in areas such as user interfaces, storage, smartphones, low power connectivity, and data processing and analytics. These are being combined with medical sector advances around novel sensing and imaging technologies, as well as microfluidics, haptic feedback, and robotics, to deliver practical solutions to some of the most pressing healthcare issues.

## Making the Connection

Connected health is an evolution from existing delivery models such as telehealth and telemedicine services, which are focused on the transmission of raw data between two locations – for example, the electronic transmission of drug prescriptions to a patient, or medical images between clinicians. Connected health takes this further by abstracting these data using sophisticated context-aware algorithms to provide actionable information to the patient, payer or clinician.

It is this ability to provide real-time data management and decision support that distinguishes

connected health. It can be as simple as a bedside monitor linked to a nursing station that alerts nurses to a critical event, or a series of networked devices collecting clinical data that is stored together with patient records and other administrative and financial data within a central clinical information system (CIS).

More advanced connected health solutions combine the latest advances in smart sensing technology, fixed and wireless networking, and cloud computing. They also employ sophisticated algorithms and centralised storage (either locally or via remote servers) to enable the mining and analysis of 'big data' to uncover trends and insights, and generate decision-making outputs.

Crucially, connected health solutions can be applied at any point in the care pathway, from a patient's first contact with a healthcare professional, service, or organisation, through to the completion of their treatment and subsequent aftercare. Moreover, they can be delivered in the home, between the home and surgery, within a surgery or even between surgeries, in areas including vital signs, sleep, and medication compliance monitoring.

## A Technology Applied

Monitoring and prevention are two promising areas for connected health. Commercial examples include solutions for monitoring diabetes (blood sugar levels, insulin administration) and for preventing co-morbidities through the monitoring of blood pressure, cholesterol, and weight. There are also PT/INR self-testing solutions (Prothrombin Time/International Normalized Ratio) allowing patients taking medication such as coumadin or warfarin to measure their blood's anti-coagulation level (i.e. how long it takes their blood to 'clot'), as well as cloud-based platforms that log patient data and refine algorithms to enable more accurate diagnosis in areas such as cardiology and image analysis.

Arrhythmia detection is another major area of focus, as it is important for patients to be able to monitor and record their heart rate

outside of the surgery. An electrocardiogram (ECG) rhythm monitoring technology has been implemented by AliveCor for example, in the form of a hand-held device consisting of two finger-pads embedded in an iPhone cover. The ECG data acquired via this device can be transferred to a secure online server for review by a clinician.

Although AliveCor's system is approved for clinician use only at present, the next step could be to put this device in the hands of patients for recording their own ECG traces for remote review in-between their appointments. This would significantly increase the likelihood of detecting relatively rare arrhythmia events.

Another connected health innovation under development is the Endotronix system, which uses an implanted sensor to communicate pressures from inside the patient's heart to a smartphone app via a transmitter. The system is able to accurately capture internal heart pressure data at any time and communicate it securely from a remote location to the patient's care team. It will be possible for both patients and clinicians to view the data in various formats, and on multiple devices.

## Delivering Successful Outcomes

Some connected health solutions are already providing doctors with new levels of visibility of their patient's progress, and empowering patients to take more responsibility for their own health and care. 'Health Buddy', for example, is a personal and interactive communications device developed by Health Hero Network (now part of Bosch Healthcare). It enables a doctor or nurse coordinator to send a set of queries to the patient each day via the Internet. The patient answers them by pressing one of four buttons. The device automatically transmits this data to a processing centre, where it is analysed and published to a secure website for review by the coordinator.

Piloted as part of a computerised interactive asthma self-management and education programme in the U.S., the device was found to increase self-management skills while reducing



the number of urgent calls to the hospital. There are now more than 20 clinical trials of the Health Buddy system in post-acute and chronic care coordination, with consistent demonstration of positive outcomes across a variety of disease states and settings. One Health Buddy programme that is supporting chronically ill patients has achieved spending reductions of approximately 7-13 percent (\$312-\$542) per intervention patient per quarter.

The U.S. has been an early adopter of connected health solutions and digital health technology in general. Electronic health records (EHRs) are subsidised under 'ObamaCare', while VC funding for digital health is on track for another record year, with start-up incubator Rock Health reporting a 35 percent increase during the first quarter of 2013 compared with Q1 2012. Last year, total annual VC funding in the digital health industry stood at \$1.4 billion and \$968 million in 2011.

security of personal health information, and concerns over the impact on development schedules and costs should products require FDA approval.

Nevertheless, the 510(k) number issued by the U.S. Food and Drug Administration (FDA) is considered the 'gold standard' for solution developers globally due to the rigour of the regulatory process, and the fact it clears medical devices for sale in a market where providers, payers, and physician groups are forecast to spend over \$69 billion on health-care-related IT and telecommunications services between 2012 and 2017, according to analysts at Insight Research Corporation.

Functionality of connected health devices varies and is based on their technical sophistication, but their success will depend on end user acceptance. This explains the rising prominence of smartphone apps, which at first glance, would appear to provide an easy route

## Connecting the Future with the Present

Additional challenges remain, particularly in respect of the networking technologies employed in connected health applications and their respective power requirements and data rates. Using Wifi or broadband for example, has the advantage that the medical device can be connected to a backbone of wireless hotspots using an existing hospital network, and the investment will be relatively low from a technology perspective.

The drawback of this approach is that it is power hungry and cannot be used if the device is battery powered and has very limited dimensions. In this case, Bluetooth Low Energy (Bluetooth Smart®) is often the preferred solution as it has low-power consumption but also means a low data rate. This constrains the amount of information that can be transmitted back and forth in real time and thus limits the application. This is an area in which leading manufacturers continue to innovate by embedding processes within the portable device so that less data is being exchanged.

Given that connected health bridges the consumer and healthcare space, development of robust and interoperable platforms is essential. Recent FDA regulations and harmonised global standards are driving manufacturers to increasingly focus on usability engineering, in order to develop devices and services that minimise the risk of patient harm through user error. Considerable progress in terms of interoperability has been made by the Continua Health Alliance, which is developing a system of interoperable personal connected health solutions.

As these challenges are addressed, connected health will enable efficiencies and improve patient outcomes. It will also free-up healthcare professionals to focus triage on patients where it is needed most. And as people become more open to owning their own healthcare, advances in connected health mean they will have a growing range of tools at their disposal. Ultimately however, the transition to connected health will be borne out of necessity, as conventional healthcare and its associated costs become less feasible in respect of fiscal and demographic pressures.

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## connected health solutions can be applied at any point in the care pathway, from a patient's first contact with a healthcare professional, service, or organisation, through to the completion of their treatment and subsequent aftercare

In Europe, take up has been slower, but industry commentators believe all the elements are now in place for connected health to make the transition from small-scale pilots to mass market implementation. According to the European Connected Health Alliance, the path for connected medical devices will be smoother in Europe than in the US, because it is easier and faster to get over the regulatory hurdles and the process is better understood.

### Fit for Purpose

The regulatory landscape in the U.S. remains highly uncertain, with the FDA due to publish its final guidelines on mobile medical apps shortly. FDA draft guidelines released at the end of 2012 stipulate that certain types of medical mobile apps will be regulated, placing a large burden on R&D in terms of managing risk. There are also considerable challenges around protecting the privacy and

for manufacturers to deliver a 'consumer friendly' user interface for their connected systems. However, manufacturers and regulators are increasingly concerned about how rapid changes in smartphone hardware and operating systems will affect the intended function of their medical devices.

Depending on the level of risk of the intended connected health system, it can still be cheaper and less risky in the long run to develop a platform-independent system that they can control entirely. Alternatively, a model explored by many companies involves the use of custom 'smart sensors', which perform the 'high risk' data processing functions using sophisticated embedded algorithms. These devices can in turn transmit the result to the smartphone, which displays the data to the user. In this way, the usability of a smartphone interface is brought to bear without adding in the extra risk of using 'unregulated' hardware and software to generate the data.

# PERSONALISED MEDICAL TECHNOLOGY

By Mathias Goyen

**Personalised medicine is all the rage and has become a dominant guiding theme of health research. The focus is on the development of drugs that allow customised treatment. Based on the genetic individuality of each person, patient groups with certain characteristics are identified to receive specific medication. For this, molecular genetic tests are developed to determine in advance whether or to what extent a drug works for an individual patient. Only then is the drug administered. The goal is to make the drug more effective and to reduce systemic side effects that continue to pose a significant challenge in drug treatment.**

The principle of personalisation or customisation is not only interesting for pharmaceuticals but also for medical devices. Firstly, medical devices are required to implement personalised medicine as a direct combination of diagnostics and therapeutics ('theranostics'). Imaging without technology is unthinkable, for example. Also suitable, possibly mobile, in vitro diagnostics and medication administration technologies are needed. Secondly, the general objective of rendering medical treatment more effective and reducing side effects through patient-specific adaptation can also be applied to the design of medical components, equipment and systems.

Innovative medical devices are characterised by significant benefits for the patient and should be safe, gentle and efficient to use. The personalisation of diagnostics and treatment can therefore be regarded as a significant optimisation strategy that provides an increasingly important role for medical technology. Unlike pharmacology, however, the biological individuality of a person from the perspective of medical technology is expressed less on the molecular genetic level and more on the anatomical, physiological and partly also on the cellular levels. There are a number of examples for this, such as autologous bio-implants, individualised methods and technologies for imageguided intervention and telemedical patient monitoring.

## Background

The use of technical devices and aids is an indispensable part of modern medicine. In the areas of prevention, diagnostics, treatment, and rehabilitation, medical technology has a significant

place in homes, private practices, and hospitals. The medical technology industry is a dynamic, innovative, and future-oriented industry that not only contributes to the creation of jobs and wealth but also makes significant contributions to better healthcare for the population and thus enjoys great social significance. Medical technology companies benefit from a diversified and internationally recognised research community in many countries.

Medical technology is a highly complex technological field characterised by an equally complex stakeholder structure and interaction. The environment is par-

new technologies with medical benefits. Overall, only a fraction of the continuously acquired medical technological knowledge ultimately trickles down to clinical care in the form of medical equipment, systems, and procedures.

Research and development are the basis for any medical technological innovation process. Conditions promoting innovation are thus of considerable importance for sustainable economic growth and employment in the medical technology industry. This is especially true for an export-oriented industry that must compete internationally primarily through technological leadership and quality.

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The medical technology industry is a dynamic, innovative, and future-oriented industry that not only contributes to the creation of jobs and wealth but also makes significant contributions to better healthcare for the population

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ticularly marked by technological intensity, interdisciplinarity, regulation, and competition, as well as by demographic change. While this complexity results in numerous opportunities it can also produce factors that may hamper innovation. This may lead to negative economic effects for both related companies and for the respective country as an industrial location. In the worst case, however, patients receive no access to

## Directions of Innovation

Five general directions of innovation can be identified:

### Miniaturisation

Miniaturisation of technical components and systems, e.g., in instruments for minimally invasive surgery or portable sensor systems for monitoring vital parameters.

**Biologisation**

Integration of biological and technological components, e.g., in bioimplants such as cartilage and vascular implants.

**Computerisation**

Integration of information and communication technology into medical technological systems, e.g. computed tomography.

**Personalisation**

Adaptation of treatment to the individual case and medical history of a patient and hence the use of customised medical technological components, devices, and systems. This includes customised treatment by directly pairing diagnostics with treatment (theranostics), e.g., in theranostic implants.

logical and medical need-based innovation momentum.

The following technological areas have high potential for innovation with a continued high demand for research and development (R&D) and corresponding significant R&D risks:

- Diagnostic image procedures;
- Interventional techniques;
- In vitro technologies;
- Medical information systems and telemedicine;
- Prostheses and implants; and
- Therapy systems.

There are overlaps between the individual areas of technology so clear distinctions are not always possible. Furthermore, additional subtopics which exhibit considerable innovation activity, can be identified in the respective areas of technology.

clinical research in the pharmaceutical sector, innovations in medical technology are usually aimed at smaller groups of patients. Therefore, the identification of a suitable clinical partner for research and establishment of an innovation is often challenging for both the manufacturer and the research institution. A suitable clinical research partner must exhibit an appropriate skills profile in combination with an appropriate patient population and a sufficient number of cases.

Another difficulty arises from the requirements for proof of clinical benefit. In Germany for example, suitable methods and specifications for proving clinical benefit are missing on the part of the Federal Joint Committee (GBA) and the Institute for Quality and Efficiency in Health Care with respect to biologised medical technologies and/or medical technologies with combined active ingredients, the complexity of requirements for clinical research was also significantly increased by the introduction of Advanced Therapy Medicinal Products (ATMP). In addition, there are problems of demarcation between medical devices and pharmaceuticals. In this increasingly complex regulatory environment, the interactions between manufacturers, research institutes, hospitals, university centres, and government agencies appear to be poorly developed and in need of improvement.

Again, compared to the pharmaceutical sector, medical-clinical research has been established less systematically, both on the part of hospitals and on the part of manufacturers, such that there appears to be room for overall expertise development. A further complication on the part of hospitals is the still relatively low level of interest of doctors in medical technological clinical research. One major reason for this is the higher impact factors of journals in the fields of medicine, molecular biology, and pharmacology. Added to this is an *a priori* lack of interest of researching physicians in medical technology, which is not least due to medical degree programmes focusing on biomedicine instead of technology.

**Medical Device Approval**

Medical devices may be marketed or used in Europe if they have a CE mark.

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## In direct comparison with established clinical research in the pharmaceutical sector, innovations in medical technology are usually aimed at smaller groups of patients

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**Networking**

Information technological integration of medical devices into existing data and communication networks, e.g., networking of various technical devices in the operating room.

The driving forces for these different directions are varied. At the core is a considerable medical need, which is mainly due to demographic developments that include a significant increase in the prevalence of chronic diseases (such as heart failure, diabetes, and neurodegenerative diseases) and a number of untreatable or inadequately treatable diseases. Innovative medical technology also possesses considerable potential to increase efficiency. Its combination with steadily growing technological capabilities and the increasing importance of the health industry and thus medical technology as a key catalysing element results in a significant techno-

There are interdisciplinary crosscutting issues that are important in view of all the aforementioned areas of technology and that significantly drive the research and development of innovative medical technology (e.g. patient safety in medical technology, usability and user acceptance of medical devices, human-technology interaction and human-machine interfaces, cross-sectoral medical technology, education and training in medical technology, standardisation in medical technology and medical technology in the context of society and ethics).

**Clinical Research**

Clinical research using new medical devices and systems has changed in recent years and has been influenced by new regulatory frameworks.

In direct comparison with established



This mark may be affixed if the essential requirements' are met and the mandatory conformity assessment has been carried out. The conditions of approval of medical devices are subject to constant changes. The EU Commission is currently working on the reorganisation of the standards, including more binding and detailed requirements for notified bodies and stricter monitoring of conformity assessments. The changes will also be aimed at better coordination of market observation and vigilance activities of national authorities at the EU level. In addition, the requirements for clinical trials are to be adapted to the pharmaceutical law.

Overall, it should be noted that the approval process for medical devices is adapting to the regulations in the pharmaceutical sector and is therefore becoming more complex, time-consuming and costly. This results in an increasing burden and a higher risk, in particular for manufacturers of medical devices. Especially for small and medium-size enter-

prises (SMEs), this is increasingly difficult to deal with due to their limited financial capacity. It is also becoming increasingly difficult for research facilities, which supply companies with R&D results in the wake of the technology transfer, to integrate into the research process aspects geared toward the future approval of medical devices. A particular difficulty arises in the respective delineations of medical devices and pharmaceuticals in terms of the applicable approval guidelines and responsibilities.

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On the other hand, internationally harmonised standards that adequately reflect the increasing technological complexity are of great importance for the future economic success of medical devices. They can be an important basis for quality as-

## Reimbursement

Reimbursement by statutory health insurance (SHI) is crucial for successful marketing of a medical device. In general, reimbursement of medical technological innovations by SHI is fraught with hurdles and often proves to be a bottleneck in the medical technology innovation process.

Usually, the path of a medical technological innovation to reimbursability is long and fraught with risk. Unlike many pharmaceutical products, medical devices often cannot be fully protected by patents. This means that imitations that can be supplied much cheaper, without

the high added cost for the reimbursement approval, quickly enter the market. This increases the economic risk, especially for SMEs. This is aggravated by a general lack of information with regard to detailed questions on reimbursement, which can also have a negative effect, again particularly affecting SMEs. Research institutions usually do not deal with reimbursement issues and the corresponding framework conditions are practically irrelevant in the phase of applied research.

From a business perspective, these hurdles result in an increase in the overall risk of medical device development and can lead to ideas or concepts being abandoned. The potential innovation will then never reach the patient. To make

matters worse, the industry is not allowed to request inclusion of an innovation into the reimbursement catalogue and no direct involvement of the industry in the decision-making process is currently projected, as only patient initiatives and doctors can request inclusion.

From a methodological perspective, the proof of the clinical benefit of innovations has proven to be a major problem. In particular, demonstrating the long-term benefit of medical devices by means of the gold standard of the RCT (Randomised Controlled Trial) is problematic and costly. There are no suitable methods and requirements for RCTs of medical devices, especially with regard to the definition of appropriate clinical endpoints. Small businesses often have no adequate expertise to carve out the benefits of innovation in this way. The financial expenditure for this is usually not feasible and is associated with considerable risk. In addition, RCTs cannot answer all the important questions of those that bear the costs, as the impact on health-care services and thus the impact on reimbursement cannot be represented.

## Conclusion

Medical device technology for personalised medicine is an exciting and promising area for development, which has immense potential for innovation. However, the costs and risks of investment in clinical research within current regulatory frameworks and the difficult path to medical device approval and reimbursement may hamper development. There is room for improvement given that research in medical device technology currently lags behind pharmaceutical research.

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# Medical device technology for personalised medicine is an exciting and promising area for development, which has immense potential for innovation.

# THE HEALTHCARE SYSTEM IN LUXEMBOURG

By Marc Hastert, Laure Pellerin



Located in the heart of Europe, Luxembourg has, for a country with an area of 2,586 km<sup>2</sup>, over 537,000 residents to be added daily + / - 150, 000 cross-border workers. The Luxembourg society is distinguished primarily by its multicultural character. The population of the Grand Duchy consists of approximately 45% foreign nationals. In all, there are now more than 150 different nationalities in Luxembourg, a reality that it is an important factor for patient care. Luxembourgish, French and German are the official languages.

## Healthcare Provision

The provision of care in Luxembourg is based upon the guidelines of the hospitals plan. This plan, an initiative of the Health Minister, frames policies and the development of hospital structures for the next five years (last published in 2009) as well as the investment policy. Investments in the hospital sector in recent years have been very important in relation to the size of the country. One billion euros were injected to facilitate structural reforms within the sector, namely hospital mergers and care pathways for patients. The hospital sector will continue to grow in line with the reforms of previous years. The new hospitals plan, of which a draft was published in September 2013, aims to develop performance through better cooperation between institutions by pooling resources (computer systems, purchase of equipment) as well as ensuring the quality of healthcare provided to the public. The specialisation of the Regional Hospital Centres is encouraged to optimise patient care and to provide the population with competence centres comparable to those in other countries.

Based on the health needs and the distribution of the population in Luxembourg, the

hospitals plan draws a new map of hospitals and services with 2,730 beds, which corresponds to five beds per 1000 inhabitants

The services are provided by both public and private health facilities. Currently hospitals are situated in three main regions: north, central and south.

Each region has at least one Regional Hospital Centre (CHR):

- Two regional hospital centres serve the population of the central region, the Luxembourg Hospital Centre with its site in Eich and the Kirchberg Hospital centre, including the Bohler Clinic.
- The Emile Mayrisch Hospital centre serves the southern region with sites in Esch, Niederkorn and Dudelange.

- The Northern Hospital Centre serves the northern region with sites in Ettelbruck and Wiltz.

The regional hospital centres are attached to the SAMU (Emergency Ambulance Service). The mission of these regional centres is to provide the population with local access to health services for all of their needs, as well as specialised services that require high-performance technical platforms.

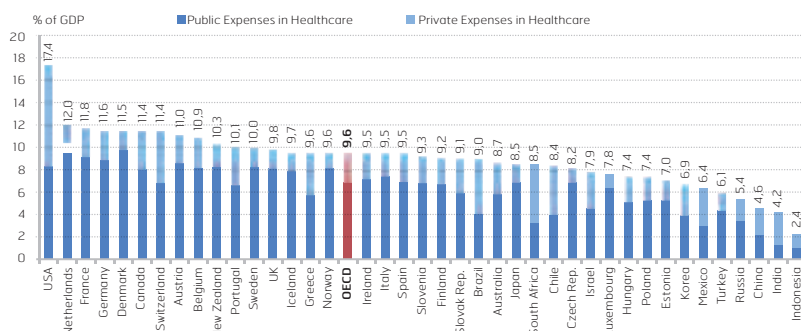
National specialist hospitals complement the regional hospital centres by offering specialist services:

- The National Institute of Cardiac Surgery and Interventional Cardiology provides cardiac surgery (acute care establishment at national service level);
- The National Radiotherapy Centre Francois Baclesse (acute care establishment at national service level);
- The National Neuro-Psychiatric Centre for psychiatric rehabilitation (medium stay hospital at national service level); and
- The National Centre for Reeducation and Rehabilitation (medium stay hospital at national service level).

**Figure 1: Total health expenditure as percentage of GDP (2012)**

<b>Total GDP (Euros)</b>	44.425,7
<b>GDP Growth</b>	0,30%
<b>Rate of Inflation</b>	2,70%
<b>Government deficit (% of GDP)</b>	-0,80%

**Figure 2:** Total health expenditure as percentage of GDP (2009) Source: OCDC



The rest of the hospital landscape is made up of the following hospitals:

- The Sainte-Marie Clinic is a local hospital oriented towards geriatric medicine;
- The Zitha Clinic is a general hospital;
- The Steinfort Hospital is a medium stay hospital which offers geriatric physical therapy;
- The Emile Mayrisch Convalescent Centre;
- The Mondorf Spa Centre; and
- The Omega Haus specialises in palliative and end of life care.

The services provided by these health institutions are available to both public and private patients.

Financing

Like France, Germany and Austria, Luxembourg follows the Bismarck model, i.e. mandatory social insurance contributions through business systems related to work. Luxembourg is subject to the same challenges and constraints as other European countries. Namely to:

- Ensure access to care for all;
- Improve the efficiency of the existing system; and
- Minimise as much as possible the inflation of healthcare expenditure (respecting the convergence criteria set out by the European Union).

The reform of the healthcare sector (sickness and maternity insurance) was passed on 17th December 2010. The years 2011 and 2012 were characterised by the implementation of this two-tiered reform (short-term and longer-term).

The short-term aims were:

- To ensure financial stability in the short-term pending the improvement of efficiency through structural reforms;
- To reframe automatic spending growth; and
- The legitimisation of spending.

The medium and long-term aims are:

- Sustainable funding through better controllability of the system;
- To optimise the quality and efficiency of care; and
- To identify and prepare for the challenges of the future. Namely, to prepare for de-

Figure 3: Total health expenditure by financing type (2009)

Source: OCDC

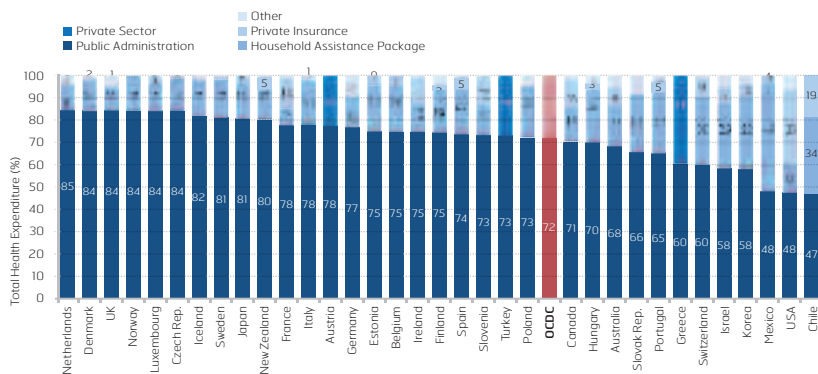


Figure 4: Employment in health and social services as a percentage of total civilian employment in 1995 and 2009 or nearest year

Source: OCDC

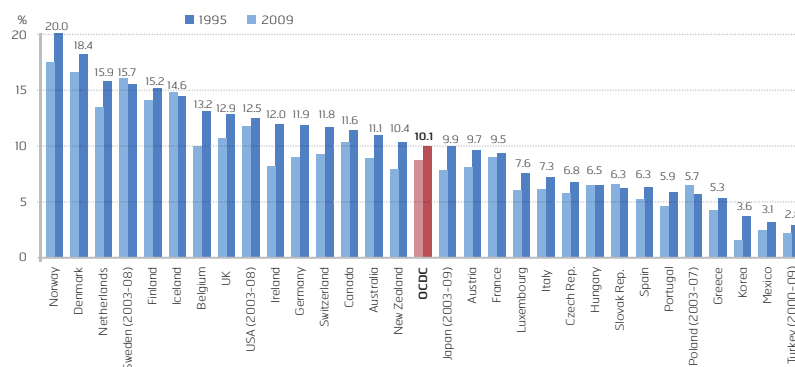
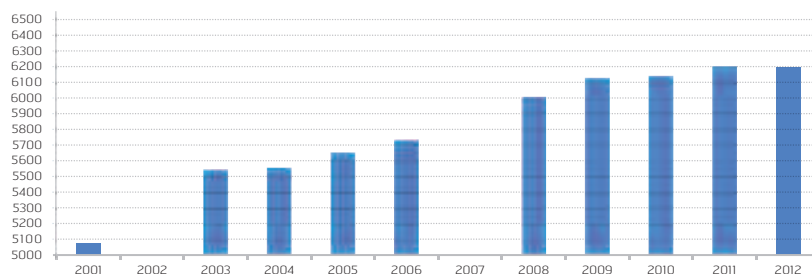


Figure 5: Evolution of the number of full-time equivalent employees



demographic change and increased competition.

In practical terms, an overall budget is established for the two financial years on the basis of a report forecast analysis prepared by the IGSS, the CNS and the CPH. The decision is made by the government every

Figure 6: Breakdown of Specialities

Doctors	1924
GP	424
Specialists	1010
MEVS (doctors undergoing specialization)	59

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even year on 1st October (i.e. every two years and for the first time in 2012). The elements of the overall budget are determined by:

- Demographic change of the resident population;

- Morbidity;
  - The practice of medicine based on scientific evidence; and
  - The country's economic growth.
- The overall budget takes into account the

specificities of institutions, including the Hospitals Plan and participation in emergency medical service. An RGD specifies the rules for setting the overall budget and the rules related to specific hospital budgets and what to include on an inclusive basis.

It is the National Health Fund (CNS) that finances the services of the hospital sector from budgets approved separately for each hospital on the basis of its predicted activity for both fiscal years. Modalities of care are governed by a written agreement between the CNS and the FHL.

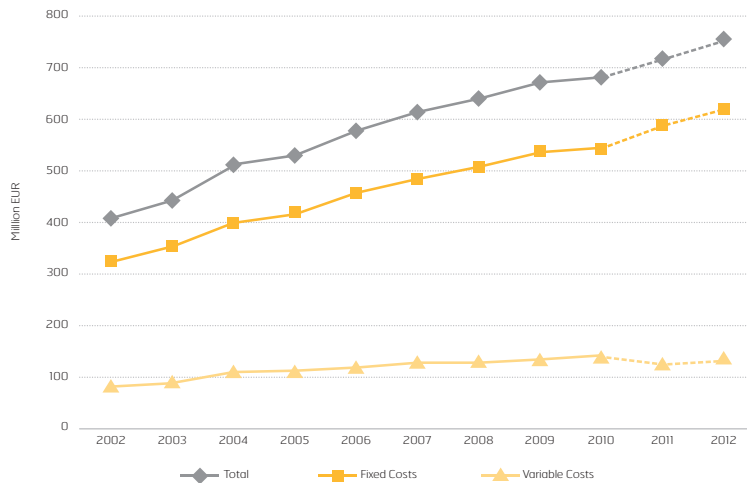
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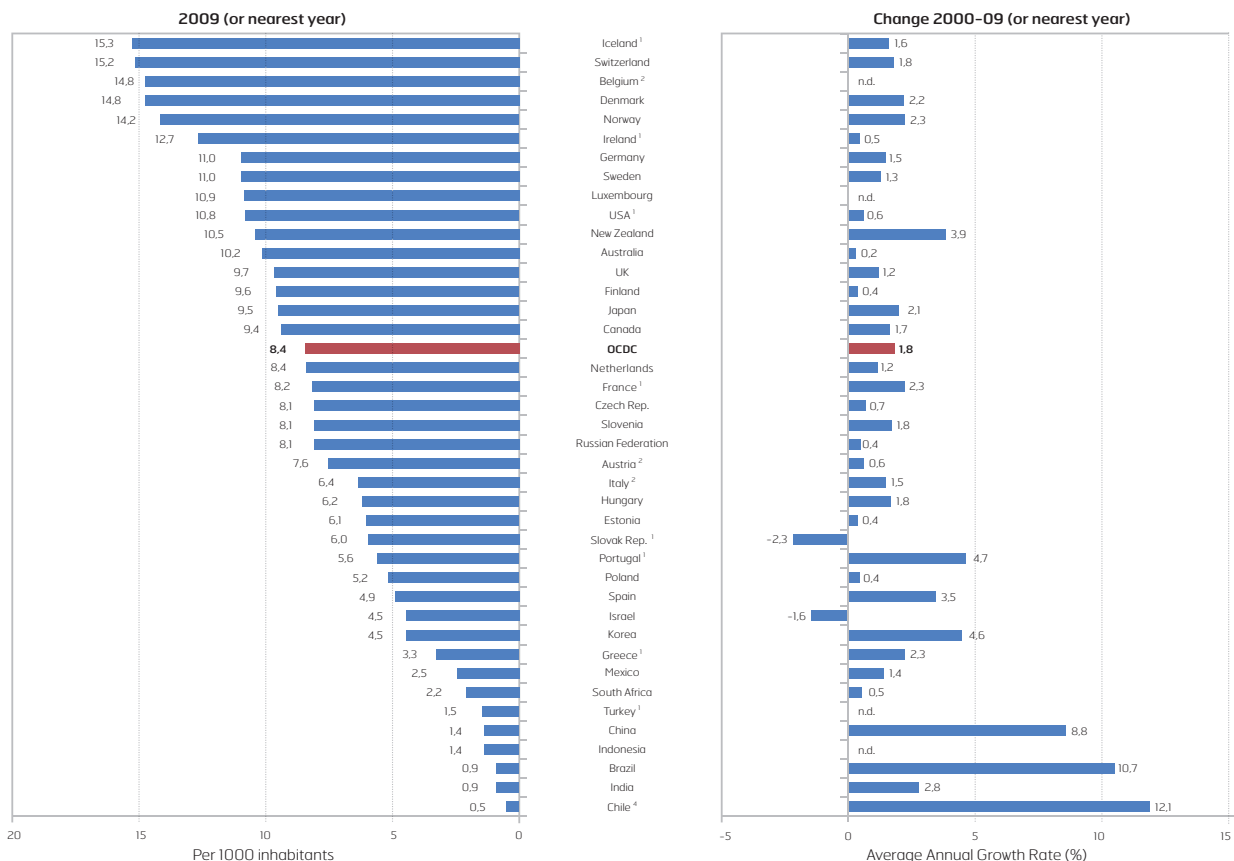
**Figure 7: Evolution of hospital budgets 2002-2012**

Source: IGSS



**Figure 8: Practising nurses per 1 000 population in 2009 and change from 2000 to 2009**

Source: OECD 2011



1. The data do not only include nurses providing care to patients but also those working in the health sector as an administrator, teacher, researcher, etc.  
2. The data correspond to the nurses authorised to practice.

3. Austria includes only nurses employed in hospitals.  
4. Chile includes only nurses working in public sector.  
Source: OECD healthcare database 2011; National sources for countries not members of OECD

# THE FEDERATION OF LUXEMBOURGISH HOSPITALS

## La Fédération des Hôpitaux Luxembourgeois (FHL)

### History

The FHL groups together hospitals in Luxembourg, defends their occupational interests and promotes all progress in the hospital sector including the wellbeing of the patient. It does this in a spirit of perfect political and religious independence.

The FHL was founded in 1948. It began as a structure grouping hospital managers and administrators, predominantly congregationists, who met regularly to resolve common issues. In January 1965 the FHL officially became a non-profit organisation with the development of its statutes. In terms of its legal existence, the FHL is now 48 years old.

### Missions

Over the last 50 years the healthcare sector has changed in structure and modernised significantly. The FHL has taken account of these changes and adapted its missions accordingly. Today, in line with its statutes, its roadmap has expanded. The FHL's current missions include:

1. To develop a short term and long term strategy for the hospital sector, and consequently a platform for exchange and close consultation between its members with the objective of coming to agreement on the major issues in the sector.
2. To ensure, to guide and to facilitate the practical implementation of decisions made by implementing the common strategy and to work to this end with both public and private stakeholders.
3. To conduct negotiations on behalf of its members with social security institutions on legal agreements and to mediate between its members and the public authorities and social security institutions.
4. To represent its members against third parties for the positions and actions jointly decided and conduct negotiations on behalf of its members for agreements with third parties.
5. To work together with its members to promote scientific and technical progress

and innovation.

6. To organise and develop relationships with foreign hospital associations and to adhere to international organisations with similar goals.
7. In general to ensure and meet the common and special interests of all its members taking into account the various legal and regulatory provisions, especially in terms of public health.

### Members

FHL currently has 12 members, including four regional hospital centres, one general hospital, 3 national centres (radiotherapy, cardiac surgery and interventional cardiology, physical therapy and rehabilitation) and four specialist institutions (obstetrics and gynaecology, psychiatry, post-acute care).

### Activities and Future Plans

In recent years the FHL has been particularly active and restructured itself. Today the association works as a platform for interdisciplinary exchange and close cooperation within the framework of medical, nursing and administrative issues to achieve operational and strategic goals. The association has also participated in legal consultations, developing the modifications set out by the law of December 17 2010 on the reform of healthcare and the establishment of the grand-ducal regulations to clarify the procedures for implementing the 2010 law.

The FHL also contributed, under the auspices of the National Health Fund, to the establishment of a uniform analytical accounting plan for the sector for greater transparency in spending, in force since January 2013.

The association collaborates closely with stakeholders to reach agreements within the hospital sector. Since its creation, the FHL has negotiated with the trade unions on collective labour agreements. Framework agreements have been reached with the doctors' association (AMMD) concerning the con-

tent of contracts between doctors and hospitals. The FHL has also taken the lead in drafting a standard contract for doctor coordinators (Draft standard contract FHL-AMMD). Its implementation raises high expectations for the increased responsibility of doctors for internal management.

FHL is an actor and motor in the realisation of national and international projects. For example the FHL created the economic interest group LUXITH G.I.E on the 20th December 2012 with the support of hospitals in Luxembourg. The group focuses on the implementation and operation of common services, software and IT infrastructures. The group will work closely with the e-health agency to implement national projects such as the EAI Mammography service.

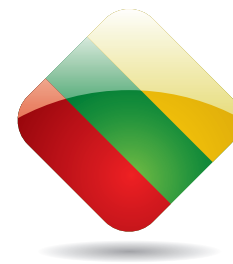
FHL is involved with areas to promote innovation and technological progress in the interest of hospital staff and patients. FHL participates in the European project HAPPI (Healthy Ageing – Public Procurement of Innovations). The project aims to link together European organisations involved in public sector health procurement in order to identify innovative and sustainable products and solutions to help people age well and support the hospital staff in charge of them.



The FHL positions itself as a unifying catalyst in the hospital sector. Many strategic plans for the health sector in Luxembourg are under consideration. Among the most emblematic include the creation of competence centres, the coordinated development of a codification of acts based on hospital diagnoses (ICD10) and medical procedures (ACPC), the creation of a single analysis laboratory for hospitals and the implementation of a plan for logistics services.

# THE HEALTHCARE SYSTEM IN LITHUANIA

By Viktoras Meižis



## Background

Lithuania is a country in Northern Europe, the largest of the three Baltic states. The Republic of Lithuania is a parliamentary Republic with some attributes of a semi-presidential system. The country is divided into 10 counties that are further subdivided into 60 municipalities. Lithuania declared its independence from Soviet Union in the March of 1990. After a transition from a planned economy to a free market one, Lithuania became a full member of NATO and the European Union in the spring of 2004 and a member of the Schengen Agreement on 21 December 2007. Since 1 July 2013, Lithuania has held the rotating Presidency of the Council of the European Union.

According to the national census carried out in March 2011, the population of Lithuania was 3,043,429. There has been a decrease of 441,000 (13%) since the previous (2001) census, of which 102,000 was through natural decrease and 339,000 through negative net migration (Statistics Lithuania, 2011b). Ethnic Lithuanians account for 84% of the population, about 6.6% are Polish, 5.8% are Russian and 1.2% are Belarusian. According to national statistics, at the beginning of 2013 there were 2,972,900 people residing in Lithuania (Statistics Lithuania, 2013b). Since the country joined the EU, net migration has increased markedly: from 6.8 per 1000 population in 2003, peaking at 26.9 in 2010 and then reducing to 14.3 in 2012 (Statistics Lithuania, 2013b).

Life expectancy at birth has been fluctuating greatly since the early 1990s, reaching 73.6 years in 2011 (68.1 years for men and 79.3 years for women) (World Bank, 2013). Substantial gender differences are noted as men in Lithuania are expected to live, on average, 11 years less than women (the widest gap in the EU countries). Similarly, there is a gap in healthy life-years between men and women: 57.8 and 62.4 years, respectively (European Commission, 2013).

Prior to the global financial crisis of 2007–2010 and now in its aftermath, Lithuania has one of the fastest growing economies in the

European Union. In 2011, Lithuania was categorised as a country with high human development; it had a Human Development Index of 0.81, ranking 40th among 187 countries (UNDP, 2011).

## Healthcare System

Since the years of restoration of Independence (1990) there have been several stages in the development of the national health system. The first stage (1990–1992) was characterised by devolution, as the role of municipalities in administering outpatient care and managing most small and medium-sized hospitals was increased. The next stage (1993–1994) was characterised by debates on private versus public administration of healthcare institutions and free patient choice of physician versus a gate-keeping role for GPs. The outcome was in favour of a public healthcare system and the introduction of family medicine. In 1994–1995, a number of political decisions were taken, among them to implement a statutory health insurance scheme and to decentralise specialist healthcare services administration from the Ministry of Health to the 10 counties.

Many strategic policy documents and many new key laws were adopted: the key document was the National Health Concept (adopted in 1991 by Supreme Council of the

Republic of Lithuania), outlined new approaches to healthcare, including introduction of the concept of health insurance, prioritising disease prevention and developing primary care. Another core document, which ensured continuity of health system reform, was the Lithuanian Health Programme adopted by Parliament of the Republic of Lithuania in 1998. The latest introduced a set of three major objectives for population health: to reduce mortality and increase average life expectancy, to improve quality of life, and to increase health equity. This Programme was like a certain guarantee of health policy principles' continuity despite the quite frequent change of government during the last decades.

Currently, a new Lithuanian Health Programme 2020 is under development. The programme aims at improving population health through safer social environment, healthy lifestyle and effective healthcare. It is being designed with an "health in all policies" approach by building and strengthening partnerships with other related sectors transferring and giving more responsibility for population health. "We hope that Lithuanian Health Programme will reflect modern thinking and criteria for assessment of activities how to improve people's health and will address the system of values, which should be the base for health system activities in each European coun-

**Table 1: Lithuanian Economy at a Glance**  
Sources: <sup>1</sup> Eurostat <sup>2</sup> Bank of Lithuania

	2006	2007	2008	2009	2010	2011	2012	2013 (forecast)
<b>GDP at current prices, € billion</b>	24.1	28.7	32.4	26.7	27.7	31.0	32.9	34.8 <sup>1</sup>
<b>GDP growth (annual), %</b>	7.8	9.8	2.9	-14.8	1.6	6.0	3.7	3.1 <sup>1</sup>
<b>Annual inflation, %</b>	3.8	5.8	11.1	4.2	1.2	4.1	3.2	1.4 <sup>2</sup>
<b>Cummulative FDI, € billion</b>	8.4	10.3	9.2	9.2	10.0	11.0	11.9	-
<b>Unemployment, %</b>	5.6	4.3	5.8	13.7	17.8	15.4	13.4	11.6 <sup>2</sup>



try: universality, justice, solidarity, sustainability, society participation, dignity, non-discrimination, transparency, accountability.” ( V.P.Andriukaitis, Minister of Health ,WHO/EURO/ RC63).

Substantial changes in the health system have been prompted by two major factors: the appearance of a third party payer in the form of the National Health Insurance fund (NHIF) and enforcement of legislation re-defining property rights and the status of healthcare institutions. The country has a mixed system funded by the national health insurance based on compulsory participation in the health insurance scheme and by the state budget. The vast majority of Lithuanian healthcare institutions are non-profit-making enterprises. Property rights and administrative functions fall under the

through capitation, with a smaller share from fee-for-service and performance-related payments. Outpatient care is financed mainly through case payment, and through fee for service for diagnostic tests. Inpatient care is financed mainly through case payment and historical budgets. Public health is mainly financed through historical budgets. There is a cost-sharing element across most areas of health service provision. Diagnosis-related groups (DRGs) introduction started in 2012.

In 2010, total health expenditure accounted for 7% of GDP, which is similar to the average for the new EU Member States (7.1%), and less than the average for the 15 EU Member States before May 2004 (EU-15) (10.6%). Total health expenditure per capita (measured in purchasing power par-

to 145, and currently there are 66 general hospitals, 49 nursing hospitals, 26 specialised hospitals and 4 rehabilitation hospitals (Health Information Centre, 2012).

### The Main Trends for the Health Workforce in Lithuania

Overall, the health workforce has decreased by approximately 18%: from 65,000 in 1990 to 47,000 in 2010, mostly through a large decrease in nursing personnel (Health Information Centre, 2013). The overall number of physicians per 100,000 population in Lithuania fluctuated between 360 and 375 in the period between 1992 and 2010. In 2010, it was 372 – higher than the EU averages. The number of nurses per 100,000 population over that period has decreased from 944 to 722 – higher than the EU-12 and lower than the average for the EU-15. The number of dentists has increased from 55 to 75 per 100,000, a figure similar to the EU-15 average. The number of pharmacists increased from 52 to 66 per 100,000 in the period from 1994 to 2003. In 2010, there were 88 licensed pharmacists per 100,000 population (European Commission, 2013). A more recent analysis (Lithuanian University of Health Sciences, 2011) reported that 3% of health professionals left the country between 2004 and 2010.

A number of challenges for national health system remain. The primary care system needs strengthening so that more patients are treated within it instead of being referred to a specialist, which will also require a change in attitude by patients. Transparency and accountability need to be increased in resource allocation, including financing of capital investment and in the payer-provider relationship. Finally, population health, while improving, remains weak, and major progress could be achieved by reducing the burden through health promotion and disease prevention. The greatest challenges for Lithuanian health system are a maintenance of sustainable financing and to convince other sectors that health should be the state goal and responsibility and to motivate other policy sectors for joint actions on public health and welfare.

**Author:**

**Viktoras Meižis**  
Director of Druskininkai Hospital

## The greatest challenges for Lithuanian health system are a maintenance of sustainable financing and to convince other sectors that health should be the state goal

jurisdiction of the central government (Ministry of Health), or the local municipalities.

The Ministry of Health of the Republic of Lithuania is the main institution at the national level, responsible for general supervision of the entire health system. The National Health Insurance Fund, under the Ministry of Health, is responsible for financing of healthcare services. 60 councils of municipalities are responsible for primary health and secondary healthcare. Tertiary care level is mostly concentrated in university hospitals and responsibility falls to the governmental level. A patient usually enters the health system through their GP or directly through a specialist doctor if urgent care is needed; for non-urgent care and with no GP referral a user fee is paid. When specialised care is needed, a patient can choose a service provider and a consultant. Inpatient and outpatient rehabilitation facilities are available to improve a patient's recovery.

A combination of payment methods exists for publicly funded health services. Primary care is financed predominantly

ity US dollars) in Lithuania has remained stable in 2008–2010, amounting to about \$1300. Since 1995, total health expenditure per capita in Lithuania has more than tripled (WHO Regional Office for Europe, 2013). In 2010, 81% of public expenditure on health was attributed to medical services, of which over 50% was spent on inpatient care, 20% on outpatient services and 9% on home care. Health administration accounted for 2.8% of public expenditure on health, while public health and prevention accounted for only 1.1% (HiT Lithuania 2013)

In 2003–2012, the network of hospitals was restructured, as part of wider healthcare service reforms. It started in 2003–2005 with the expansion of ambulatory services and primary care. In 2006–2008 of day care and day surgery was introduced and in 2009–2012 long-term and nursing services were developed and the service provider network was optimised and restructured.

Between 1990 and 2011, the total number of hospitals in Lithuania decreased from 197

# REFORM OF LITHUANIAN HOSPITALS DURING THE ECONOMIC CRISIS

By Edmundas Baltakis

Over the past five years, the number of state hospitals has fallen by 17.6 percent, meaning that as many as 18 facilities (mainly specialised – 47.6 percent) were merged into separate legal entities. This has resulted in a more effective network of institutions, joining them into larger legal entities and integrating mono-profile hospitals to multi-profile institutions. Hospitals providing specialised treatments for children, tuberculosis, psychiatry, infectious diseases, maternity services were mostly integrated to multi-profile institutions. This allowed the development of a streamlined service structure, redistributing patient flows, consolidating the infrastructure and resources of district hospitals for treatment of widespread diseases, while concentrating diagnostics and treatment technologies of complicated cases in large hospitals.

Based on the criteria set in the programme for the third phase of the restructuring, all Lithuanian hospitals were divided to national, regional and district facilities. Two university hospitals were attributed to the national level – Lithuanian Health Science University Hospital Kauno Klinikos (with over 2,000 inpatient beds), and Vilnius University Hospital Santariškiu Klinikos (with over 3,000 beds). The range of healthcare services was approved for each level hospital or their groups, based on specific criteria. District-level hospitals were further divided into 2 groups – 11 district hospitals (with 85 to 130 beds), as non-conforming to some of the requirements, with a small number of services (300 births, or 660 and less major surgeries per year), and failing to ensure their growth and efficient use of human and material resources, were not allowed to have departments of surgery and traumatology, obstetrics, and to provide level II intensive care services. The other 21 district hospitals that were compliant with requirements (with 130 to 200 beds) were certified to deliver such services. Currently, the country has 11 licensed regional hospitals (from 188 to 466 beds), 5 national (over 1,000 beds), and others.

Compared with previous years, the average duration of one treatment in general hospitals is declining and was 7.09 days in 2012.

The number of hospital beds in Lithuania fell by more than 2 percent between 2008–2012. This is explained by the declining Lithuanian population – by about 400,000 during this period of economic crisis, mainly because of emigration (to England, Ireland, Norway, Sweden, Germany, etc.). These processes affect changes in the relative number of beds.

Over the last 2 stages of the restructuring, the country's PHIs failed to achieve any one of the objectives – the target hospitalisation rate per 100 population – 18, although the inpatient services decreased by 2.6 percent in 2009 compared to 2011. The achieved indicator of 20.77 hospitalisations per 100 population reflects the country's demographic processes – ageing society, increasing number of diseases in 2012.

A positive trend is the significant growth of outpatient services: 7,944 thousand of these services were provided in 2009 and as many as 8,595 thousand in 2011 (i.e. 651 thousand or 8.2 percent more than in 2009). Cost-effective services are also growing: in 2011 as compared to 2009, the day inpatient service growth was +25 percent, day surgery +21.6 percent, reception and emergency care +6.4 percent, while monitoring services increased as high as 56.5 percent.

In order to improve the delivery of healthcare services in the country's hospitals, improving their quality and accessibility, more than 90 projects were implemented from the EU Structural Funds during the period from 2008 till the first half of 2013, utilising more than 73.5 million euros, allowing the modernisation of inpatient healthcare institutions:

- To improve accident and emergency care, infrastructure was upgraded in 29 health facilities (district, regional and republic level hospitals). This included the renovation of premises, acquisition of modern medical equipment (defibrilla-

tors, monitors for cardiovascular function monitoring, electrocardiographs, etc.) and medical vehicles for patient transportation.

- The development of day surgery services included the upgrade of 35 public (district, regional and republic level hospitals), and 9 private personal healthcare facilities. Operating and procedural rooms were renovated as were observation wards for day surgery services, patient and accompanying person waiting rooms. Medical equipment was modernised: operating tables, vital signs monitors, operating lighting, ventilation and anaesthesia, galvanocaustic machines, defibrillators, laparoscopy and other devices.
- Development of nursing and palliative care services included the upgrade of the infrastructure of 51 health facilities providing inpatient nursing and supportive care and/or inpatient palliative care services: renovation of premises, acquisition of modern medical and nursing equipment.

It should be noted that regardless of the base rate reduction for inpatient hospital services by 19, 11, 9 and 8 percent since 2009, the joint efforts of the Ministry of Health, the National Health Insurance Fund, the Lithuanian Association of Hospital Managers, heads of individual healthcare institutions and hospital communities allowed to mitigate the negative consequences in the health sector. The level of health services has been so far been maintained without compromising their accessibility to patients. By providing more outpatient, day surgery and other alternative services and developing prevention programmes, the Lithuanian health system has demonstrated its viability during the period of crisis.

**Author:**

**Edmundas Baltakis**

Chairman of the Lithuanian Association of Hospital Managers  
Head Doctor of Joniskis Hospital

# ASSOCIATION OF HOSPITAL MANAGERS PHYSICIANS OF LITHUANIA

By Stasys Gendvilis

The Association of Hospital Managers Physicians of Lithuania (LAHMP) was founded 22 years ago by a small group of enthusiasts - managers of healthcare institutions. Over the last decade it has changed in terms of numbers (the number of members has increased from 50 to 130), and quality. Statutes were amended and the LAHMP became the associated structure, bringing together institutions –

The association's mission is to unite its members for joint activities by transforming and improving the performance of healthcare facilities, improving the quality of healthcare services, their organisation, participating in the processes of governmental institutions in shaping health policy and participating in the activities of international institutions and organisations. Recently, the association is fo-

pose, we have developed joint projects of LAHMP institutions to receive funding from the EU Structural Funds for the subsequent managerial and professional knowledge development of our association managers and their institutions' personnel – doctors, nurses and other professionals.

During the period of 2009-2011, a total of 11 LAHMP institutions implemented the project "Improvement of perform-



legal entities and their directors, and other senior level health workers. The ambition of the association members is to achieve positive changes in the performance of both institutions, and the entire healthcare (HC) system, and to provide patients with higher-quality, more efficient and more affordable services.

In 1996, LAHMP joined the European Association of Hospital Managers (EAHM) during the Congress in Tampere, Finland. This has opened up new opportunities for the association to participate in various events and directly interact with European colleagues sharing different experiences (such as the efficiency of reforms) and information.

ocusing mainly on the training of our association members: managers and other senior personnel. Other key activities focus on organisation, coordination, researching new funding sources for healthcare institutions, disseminating information among its members about new innovative healthcare management service methods and forms of work organisation.

Historically, managers of our country's health institutions are mainly medical doctors; therefore, training in managerial, legal and economic areas is essential for our association. Every five years we organise training courses for all healthcare managers, under the title "Lithuanian health system development". For this pur-

ance of healthcare institutions and services, by improving the skills of employees". The project involved the training of 2315 participants – managers, doctors, nurses, and other healthcare workers.

In 2012-2013, the association initiated and implemented the project "Education of social partnership skills of healthcare employers and trade union representatives" in conjunction with the country's healthcare trade union. The training was attended by 1,000 healthcare institution employees and trade union members. A total of eight institutions signed collective agreements and set up four safety and health committees.

Currently, like many other countries,



Lithuania is still experiencing the economic recession and financial downturn. At the end of 2012 we had the parliamentary elections and a change of the government. The new government and the Ministry of Health have introduced numerous innovations in the country's healthcare system. Our association makes a great effort by offering strategic directions in the country's health financing system, further reform principles that will determine the management changes in the health system in the national healthcare programme prepared for the period of 2013-2020, and is involved in medical community building activities.

With Lithuania's accession to the EU and the beginning of the free movement of citizens, goods and services, many well-trained doctors and nurses from our country left to work abroad. As a result, now we are facing the shortage of medical professionals, particularly in the periphery of the country. The association constantly offers the ways of addressing issues of human resources in healthcare facilities to the government, the ministries of health, education and science, and higher medical schools.

The constant spotlight of the LAHMP activities is on the quality of healthcare services. Quality and safety can be ensured by a system of institution accreditation. We have been introduced to the accreditation systems most often applied in the European hospitals, and a large number of our institutions already have implemented quality management systems and the European certificates of management.

The association is participating, along with the Health Ministry, State Patient Fund in implementing the new EU Directive on patients' rights and ensuring the freedom of movement and the right to the necessary assistance in the EU member countries for the insured.

Managers of healthcare institutions continuously focus on e-health issues. The association participates in the development of the e-health strategy, design and spread of the e-health services in institutions, and promotion of their

Technologies", with participation and presentations from LAHMP lecturers.

The country has few private healthcare institutions (the exceptions being family clinics, dental clinics and drugstores). Therefore, the association often addresses the issues of rational approach to public-private partnership, and promotes the cooperation between public and private sectors.

In recent years, especially after the Lithuania's accession to the European Union, big changes took place in the

## With Lithuania's accession to the EU and the beginning of the free movement of citizens, goods and services, many well-trained doctors and nurses from our country left to work abroad

use among patients. Many institutions are implementing an electronic preliminary patient appointment reservation system; developing the hospital information system and the uniform national e-health system. On 12-13 October 2011, the LAHMP organised an international conference in Vilnius "Achievements of Healthcare Institutions in Optimizing Management of Information

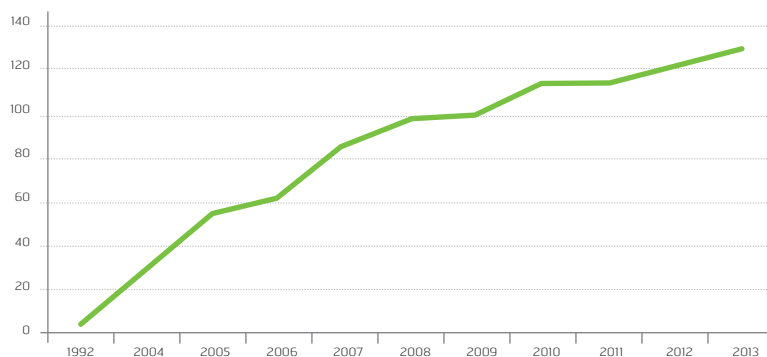
country's health care system: our legislation is adapted according to the European Standard; healthcare institutions are subject to the same modern diagnostic and treatment technologies, hospitals and clinics are managed and renovated. We are pleased to note that the managers of health care institutions, members of our Association, take the most active part in these processes.

In the second half of 2013, as part of the Lithuania's Presidency of the European Union, the country held a series of events related to the development of business, economic and finance. Among others, it organised the international "Public sector efficiency conference". The LAHMP was actively involved in the event by delivering presentations and taking part in discussions related to healthcare.

**Author:**

**Stasys Gendvilis**  
President LAHMP

**Table 1:** Growth of Association Members





Willy Heuschen

## UNE RESPONSABILITÉ CONJOINTE

La conférence annuelle de l' European Public Health Alliance qui s'est tenue pendant la présidence de l'Union européenne de la Lituanie a fait état des disparités croissantes concernant l'état de santé de la population et que l'on peut observer au sein des États membres de l'Union. Une étude a par exemple confirmé que les personnes touchées par une maladie ou un décès sont sujettes à de plus grandes restrictions dans les pays à revenu faible ou modeste. À l'heure actuelle, ce taux est deux fois plus élevé dans ces pays que dans les pays à revenu élevé. On a également constaté que la crise financière qui affecte actuellement les États membres n'avait pas uniquement des conséquences négatives sur la situation économique. Elle a également un impact sur la couverture des soins de santé – qui s'en trouve amoindrie – et les systèmes de santé dans leur ensemble s'en ressentent négativement.

En dehors de ce constat, le document de travail de la Commission européenne a mis en évidence d'autres facteurs ayant une influence sur l'état de santé physique des individus. Nous avons relevé ceux qui sont liés à l'éducation, à la formation et à l'emploi, aux niveaux de revenu et au choix de style de vie. Cela semble aller de soi mais nous devons souligner que tous les facteurs que nous venons de mentionner sont en interaction les uns avec les autres. Dans ce document de travail, la Commission lance un appel à tous les pays et à tous les intervenants du secteur de la santé pour qu'ils se lancent dans des actions et des investissements ciblés afin de réduire, dans un plus long terme, les disparités qui touchent le secteur de la santé.

Il est également de notre devoir en tant que gestionnaire d'hôpital d'œuvrer à l'amélioration de l'état de santé de nos concitoyens et par là même de soutenir la cohésion sociale. À notre niveau, cela peut se traduire, par exemple, par la mise à disposition de nos concitoyens d'un grand nombre de services. La pratique quotidienne de la gestion hospitalière montre que les disparités mentionnées plus haut peuvent facilement exister dans son propre pays ou dans la zone desservie par son hôpital. Chacun d'entre nous, s'il le souhaite, a la possibilité d'observer la fracture sociale d'une population en se rendant dans le service des urgences de son hôpital. Nous sommes également conscients du fait que les mesures d'austérité actuellement mises en œuvre dans de nombreux pays ne font qu'alourdir la charge financière supportée par les patients, ce qui a pour conséquence de limiter l'accès de certains d'entre eux aux services de santé.

D'autre part, les hôpitaux sont aussi contraints d'être dans une situation financière délicate s'ils veulent pouvoir proposer un niveau de service au moins égal au service actuel et assurer sa garantie dans l'avenir. Cela concerne surtout les investissements à réaliser pour suivre les nombreux développements qui s'imposent au niveau médical et technologique.

C'est à la direction d'un hôpital qu'incombe la charge de négocier efficacement cet équilibre entre la responsabilité sociale et l'efficacité économique de son établissement, à court comme à long terme. Vous découvrirez dans ce numéro plus de détails à ce propos et aussi comment l'AEDH soutient ses membres dans leurs efforts pour mener à bien ces diverses tâches hétéroclites et parfois difficiles. Le 24<sup>ème</sup> Congrès de l'AEDH, dont nous parlerons dans ce numéro, est un parfait exemple de la maîtrise de cet art de l'équilibre. Il vous permettra de vous familiariser avec les applications informatiques dans la technologie médicale, la sécurité dans d'autres domaines de l'industrie et pour les examens endoscopiques, ainsi que la gestion d'une salle d'opération, nous livrant ainsi de nombreux conseils utiles.

En outre, nous sommes heureux de vous présenter l'IMPO (de l'anglais « Inputs, Management, Processes, Outcomes »), une méthode de travail que l'AEDH a décidé d'utiliser dans l'avenir. Vous découvrirez plus en détail que l'IMPO offre une appréciation globale du management d'un hôpital : il met en valeur les connexions ainsi que les différents aspects à prendre en considération lors de l'évaluation. Sur la base des orientations nationales et sociales, il considère très clairement que toutes les activités d'un hôpital doivent être orientées patients et se concentrer sur la responsabilité sociale, valeurs qui sont aussi devenues nos valeurs de référence. La gestion et les processus, les médecins et les salariés, au quotidien, constituent le moteur central d'un hôpital. Avec l'IMPO, nous avons la conviction que notre association a apporté une intéressante pierre à l'édifice. Nous sommes intimement persuadés que l'IMPO est l'approche idéale, une approche qui permettra aux directeurs d'hôpitaux à la fois d'apprendre les uns des autres et d'être confortés dans leurs responsabilités face aux patients et en faveur de la cohésion sociale.

**Willy J. Heuschen,**

*Secrétaire général de l'AEDH et rédacteur en chef*



Les éditoriaux d' *(E)Hospital* sont rédigés par des membres des instances dirigeantes de l'AEDH. Les contributions publiées ici ne reflètent cependant que l'opinion de leur auteur et ne représentent en aucune façon la position officielle de l'AEDH.

## DEUXIÈME JOINT EUROPEAN HOSPITAL CONFERENCE

Après le succès de la première Joint European Hospital Conference l'année dernière, l'AEDH s'associe de nouveau à l'European Hospital and Healthcare Federation (HOPE) et l'Association of European Hospital Physicians (AEMH) dans le but d'organiser une deuxième rencontre.



La prochaine Joint European Hospital Conference se tiendra le vendredi 22 novembre 2013 à Düsseldorf, en Allemagne, dans le cadre du 36<sup>ème</sup> Deutsche Krankenhausstag au cours du salon MEDICA 2013.

La session du matin est divisée en deux parties et fait suite à la conférence qui s'est déroulée l'an passé par des présentations et des discussions concernant la directive européenne sur les droits des patients, alors que celle de l'après-midi portera sur l'accès à l'innovation dans les hôpitaux européens.

### La mise en œuvre de la directive européenne sur les droits des patients

Andrzej Rys, directeur des systèmes et produits de santé à la Commission européenne, présentera les conditions de la mise en œuvre de la directive. Ensuite, des orateurs venant de Suède, de Hongrie et d'Espagne partageront leurs expériences en établissant les points de contact nationaux prévus dans la directive.

Xavier Benez, directeur général de l'Union Nationale des Mutualités Libres, examinera comment les systèmes de santé nationaux peuvent se préparer à la mise en œuvre de la directive et la session se terminera par une discussion sur la façon dont les réseaux de référence européens correspondent aux structures nationales. Des représentants de l'Allemagne, de la Pologne et du Portugal nous feront part de la situation dans leurs pays respectifs.

### L'accès à l'innovation dans les hôpitaux européens

La session de l'après-midi sera tournée vers l'innovation, un sujet essentiel dans le secteur de la santé. Serge Bernasconi,

directeur général d'Eucomed, l'association européenne du secteur de la technologie médicale, présentera un aperçu des avantages des procédures médicales et des produits innovants en Europe nous fera part des décisions déterminantes qui devront être prises.

Pour développer l'innovation dans la pratique, des représentants du Royaume-Uni, de la France et de l'Italie mettront l'accent sur les décisions et les avantages de l'innovation dans les soins de santé. Cette étape sera suivie d'un débat.

Cette Joint European Hospital Conference devrait réunir 150 à 170 grands décideurs du secteur hospitalier européen. Toutes les présentations seront traduites simultanément en anglais, en français et en allemand.

Le congrès commence à 10 h et se déroule jusqu'à 16 h.

Les participants auront la possibilité de rencontrer leurs pairs au cours du déjeuner ainsi que lors de la réception en soirée à Düsseldorf.

**Pour plus d'informations :**  
[www.medica.de/EHC2](http://www.medica.de/EHC2)

## 43<sup>ÈME</sup> ASSEMBLÉE GÉNÉRALE ORDINAIRE



Jeu 28 novembre 2013  
de 8h30 à 9h30,  
au Centre de Congrès, salle D,  
1 rue du Fort Thüngen,  
L-1499, LUXEMBOURG

### Ordre du jour:

1. Approbation de l'ordre du jour
2. Approbation du compte-rendu de la

- 42<sup>ème</sup> Assemblée générale du 16 novembre 2012 à Düsseldorf, Allemagne
3. Rapport d'activités 2012-2013 par le Président
4. Approbation des comptes 2012:
  1. Présentation par le secrétaire général
  2. Rapport des commissaires aux comptes
  3. Approbation des comptes 2012 et décharge du Bureau et du secrétaire général
5. Budget 2014

1. Approbation des cotisations des membres ordinaires et associés (Art. 4.3.e. des statuts)
2. Approbation du budget de l'année 2014
6. Désignation des commissaires aux comptes pour l'année 2013
7. Admission et exclusion de membres
8. Prochaine Assemblée générale 2014

Merci de bien vouloir confirmer votre présence via le lien:

<http://www.aedh.eu.org/GA2013.html>



▶ **Présentation de l'IMPO, le nouveau modèle de travail de l'AEDH**  
Par Willy Heuschen et Jos Vanlanduyt

L'AEDH a conscience des nombreux bouleversements qui interviennent actuellement dans le secteur de la santé et de l'impact qu'ils ont sur les hôpitaux et sur les directeurs d'hôpitaux plus précisément. Tout comme nos hôpitaux, notre association doit s'adapter et évoluer. C'est pour cette raison qu'un nouveau modèle de travail a été mis au point : l'IMPO, qui vient de l'anglais « Inputs, Management, Processes, Outcomes ».

L'IMPO est le modèle de travail qui a été adopté pour l'AEDH et ses activités. S'il n'est pas adapté au contexte d'un hôpital en particulier, nous sommes néanmoins persuadés que l'IMPO est un outil qui permet d'engager une réflexion sur la gestion au sein d'un hôpital. L'objectif de l'IMPO n'est pas d'évaluer la gestion de l'hôpital – et il n'est donc pas destiné à remplacer les méthodes actuelles d'évaluation – mais d'examiner les causalités entre les données et les résultats internes et externes en tenant compte de la gestion et des processus.

L'IMPO intègre les quatre éléments pertinents dans la gestion hospitalière et souligne la nécessité d'une approche globale dans la gestion d'un hôpital. C'est lui qui va positionner et orienter les activités et le programme scientifique de l'AEDH.

▶ **La gestion d'un hôpital en temps de crise : le congrès de l'AEDH en 2013 se penche sur les contraintes, les défis et les opportunités**  
Par Edyta Gurgul

Le 24<sup>ème</sup> congrès de l'Association Européenne des Directeurs d'Hôpitaux aura lieu à Luxembourg en novembre 2013. Organisé par la Fédération des hôpitaux luxembourgeois (FHL), le congrès réunira des centaines de directeurs d'hôpitaux et de professionnels du secteur hospitalier européen autour du thème de la gestion des hôpitaux en temps de crise : ses contraintes, ses défis et ses opportunités.

M. Joël de Rosnay prononcera le discours d'ouverture dans un exposé intitulé *L'évolution technologique, la crise économique et la gestion de l'hôpital dans l'avenir* qui nous présentera les défis auxquels sont actuellement confrontés la société et l'industrie. Ensuite, la thématique continuera à être développée par les autres conférenciers à travers trois sessions de présentations réparties sur les deux jours :

- les orientations stratégiques en situation de crise ;
- la réingénierie des processus d'affaires ;
- les nouveaux bâtiments, nouvelles procédures et nouvelles technologies.

Pour effectuer une réservation et lire le programme officiel complet, veuillez consulter notre site : [www.eahm-luxembourg2013.lu](http://www.eahm-luxembourg2013.lu)

▶ **Résistance**  
Par Andrea Aparo, Ugo Luigi Aparo, Gianfranco Finzi

Nous vivons dans une période difficile et compliquée. C'est tout nouveau et très mal perçu. Pour lutter contre la crise nous devons utiliser le facteur « Résistance ». Les directeurs doivent être capable d'évoluer d'un processus décisionnel basé sur les causes à un processus décisionnel basé sur l'activité et l'efficacité. Ils doivent faire en sorte de devenir actif et non réactif, et utiliser les expériences du passé pour s'ouvrir de nouvelles possibilités dans le futur.

La plupart d'entre nous on fait face une situation différente, fait une vérification rapide des causes, pris en compte l'ampleur et la durée des conséquences des causes. Par exemple nous avons trouvé quelles sont les forces que nous pouvons contrôler et si les événements sont prévisibles. Un gestionnaire ne sait pas perdre de temps dans la réflexion, il utilise donc une pensée active en identifiant les aspects de la crise et leur impact. Le but est donc de répondre dans l'immédiat à une situation donnée en prenant en compte l'ampleur et sa durée.

▶ **Conduire des démarches vers une amélioration opérationnelle avec Joined-up Healthcare Data**  
Par Peter Osborne

Quand on parle de conduire des démarches vers une efficacité opérationnelle, il ne s'agit pas d'encourager les médecins à travailler plus : il s'agit de changer leur intervention, car les données issues de la recherche indiquent qu'ils pourraient, dans certains cas, travailler plus rapidement. Comprendre la marge d'un service et identifier des éléments de ce service qui apportent le plus d'efficacité avec un coût plus bas que celui pour lequel ils sont rétribués (par exemple le budget alloué) permet de comprendre quels sont les domaines qui occasionnent des dépassements de coût au delà de ce que le budget ne permet. C'est une démarche essentielle si on veut pouvoir atteindre les objectifs de rendement que l'on s'est fixés. En développant notre capacité de répartir les coûts par patients ou par thérapie, nous accomplissons également une avancée essentielle bien profitable pour réussir la transition vers le paiement au résultat.

Le concept de l'évaluation du coût d'une intervention clinique et de son efficacité est un domaine très complexe – et très controversé – mais les possibilités existent et sont bien réelles de rendre ces interventions plus efficaces si on considère avec attention les logistiques qui les supportent.

**L'architecture à l'hôpital :  
Une entreprise interdisciplinaire**Par Julie Meldgaard, Stine Fausing Thomsen, Pernille Weiss  
Terkildsen

Le service de santé vit une période de rapide évolution, elle fait face à de nombreux défis comme les demandes de traitements, la communication et l'architecture. Faire face à ses défis c'est vouloir travailler délibérément dans un environnement physique ou tous les professionnels de la santé et du bâtiment se rencontrent. Ils doivent travailler main dans la main.

Un professionnel de la santé va faire en sorte de trouver la meilleure solution pour répondre aux besoins de l'hôpital. Le professionnel du bâtiment va devoir expliquer et apporter des précisions sur l'impact que son innovation peut avoir sur le service hospitalier.

Dans ce sens il faut améliorer la manière d'expliquer son concept auprès des professionnels de la santé. Une manière qui doit donner du sens pour l'ensemble de l'équipe hospitalier. Les compétences professionnelles de l'architecte permettent de penser au-delà de l'espace et des opportunités dont bénéficient les patients, le staff et l'économie de l'hôpital.

**Progresser en s'entendant bien :  
Gestion des conversations difficiles**

Par Stephen Baker

Beaucoup de guides pour un leadership efficace en médecine se concentrent sur la structure. Comment le département doit être organisé et comment l'autorité doit être déléguée sont souvent abordées. D'autres distributeurs de conseils se concentrent justement sur la formation et la mise en œuvre de la réalisation de votre mission. Ces suggestions et directives sont souvent primordiales. Ils sont indifférents à l'agitation quotidienne et constante de ce qu'il se passe sur le « terrain ».

Les gestionnaires seront confrontés à un flux continu de conversations, certaines triviales, d'autres plus importantes et quelques autres étonnamment cruciales, même si elles sont informelles et ad hoc dans la présentation. C'est dans ces cas que vous êtes testés en tant que leader. Comment procéder sans dévier de vos objectifs et la façon d'encadrer ces rencontres sont tout autant une partie du travail que la planification et les grandes initiatives stratégiques.

Il ya trois aspects clés à maîtriser pour progresser par s'entendre. Tout d'abord, de garder le contrôle. Votre efficacité en tant que gestionnaire dépend du maintien d'un control. Le deuxième aspect est aux prises avec exagération, l'une des capacités sous-estimées mais nécessaires qui rendent un leader efficace est son habileté dans la gestion de la métaphore. Troisièmement, il faut écouter les suggestions, prendre le temps de les examiner et ensuite fournir une réponse pleine de tact.

**Un système d'aide à la décision pour le bonheur  
des intervenants et des responsables de bloc  
opératoire**

Par Theresia van Essen et al.

Que ce soit en raison de la variabilité de la durée d'une opération ou de l'arrivée de patients non programmés en urgence, la planification d'une salle d'opération est tout au long de la journée bouleversée, avec un risque de retard pour les opérations chirurgicales reflétant un caractère moins urgent. Ces changements peuvent conduire à des situations difficiles pour les patients, les équipes ou les autres services concernés : il doit donc y avoir réajustement du planning.

Nous avons développé un système d'aide à la décision qui assiste le responsable d'un bloc opératoire dans sa prise de décision en lui proposant les trois meilleures alternatives possibles pour réajuster la planification. Le système prend en compte les exigences et les considérations des intervenants concernés et propose uniquement des plannings qui répondent aux restrictions imposées. Les règles de décision qu'il utilise sont basées sur une analyse approfondie du problème de reprogrammation d'un bloc opératoire. Une étude de simulation a montré que l'utilisation du système d'aide à la décision permet de diminuer le nombre d'annulations de chirurgies programmées, que les patients et les équipes sont plus satisfaits, mais aussi que la charge de travail des autres services adjacents augmente proportionnellement.

**Pourquoi le système de santé est en difficulté  
lorsqu'il s'agit de gérer le risque ?**Par Stephen Leyshon, Eva Turk, Tita Alissa Listyowardojo,  
Anna Hayman Robertson

Le système de santé est connu pour être risqué pour les personnes les plus vulnérables. Sur les 421 millions d'hospitalisations, 42 millions sont liés à des situations différentes et à des degrés différents. Ces chiffres nous indiquent le manque de sécurité autour de la santé. C'est la 14<sup>ème</sup> cause de morbidité et de mortalité dans le monde. Elle se situe au même niveau que la tuberculose ou la malaria.

« Proactive risk assessment » (PRA) a le potentiel pour devenir un excellent outil pour sécuriser au mieux la santé et apporter les besoins nécessaires et urgents pour assurer la sécurité sanitaire des patients. L'approche que propose le PRA, peut permettre d'éliminer ou minimiser le danger avant que celui-ci cause des blessures.

Dans certains secteurs médicaux en difficulté, le PRA a bien fonctionné. Malgré cela, les commentaires fait sur ce système montrent que les hôpitaux sont en difficulté face à son utilisation. Le système de santé n'est pas arrivé à atteindre la maturité qu'ont d'autres secteurs dans la capacité à maîtriser le niveau de risque sanitaire. Pour changer et mieux

mesurer les dangers liés à la santé, les organisations de santé doivent faire en sorte de transmettre leur savoir-faire, compétences et ressources permettant à l'ensemble du staff médical de mesurer et mieux maîtriser les risques dont la santé est l'objet.

► **Gestion de la salle d'opération et l'informatique : Amélioration de l'efficacité et de la sécurité**

Par Vanni Agnoletti et al.

La salle d'opération (OR) représente l'une des unités les plus critiques de l'hôpital autant dans la protection des patients contre le risque sanitaire mais aussi sur le plan financier. Cet article présente un modèle théorique, appelée ORMS (Operating System Management Room), elle est imbriquée dans un environnement d'entreprise intelligente qui est capable d'apporter les informations nécessaires via les indicateurs du langage médical.

L'ORMS fonctionne grâce à un système de suivi où l'on peut suivre les antécédents du patient comme les opérations chirurgicales. Elle peut apporter trois types d'informations qui couvrent les informations dont ont besoins les médecins, les chirurgiens et les anesthésistes.

À l'hôpital de Forlì, ce système fonctionne bien et l'efficacité et la sécurité des patients ont augmenté, ce qui prouve que l'on peut être performant même dans une période de restrictions de sources. De tels résultats sont aussi le fruit de l'innovation managériale.

► **« Connected Health »**

Par David Pettigrew

L'espérance de vie et les maladies chroniques sont en augmentation, ce qui met les hôpitaux plus que jamais sous pression. Dans un moment aussi difficile de restriction budgétaire, il faut trouver par le biais de nouvelles méthodes comment réduire les coûts tout en étant encore plus efficace.

« Connected Health » (la médecine à distance) peut fournir cet équilibre entre réduction des coûts, efficacité et qualité. C'est une solution qui peut être utilisée à tout moment et n'importe où du premier contact du client en passant par tous les niveaux d'un service hospitalier jusqu'au suivi du traitement et le suivi d'après-traitement. Ce système peut être utilisé à la maison ou entre deux opérations chirurgicales.

► **La technologie médicale personnalisée**

Par Mathias Goyen

La médecine personnalisée est à la mode et est devenue le leitmotiv dominant de la recherche dans le secteur de la santé. Si l'intérêt principal a été porté sur le développement de médicaments qui permettent un traitement adapté, le principe de personnalisation ou d'adaptation semble être également particulièrement intéressant pour tout ce qui touche aux dispositifs médicaux. Tout d'abord, pour que la médecine personnalisée soit la combinaison directe d'un diagnostic et d'une thérapeutique (« théranostic »), on a un réel besoin de dispositifs médicaux. Deuxièmement, l'objectif général de rendre un traitement médical plus efficace et de réduire ses effets secondaires grâce à son adaptation spécifique à chaque patient peut aussi être appliqué à la conception de composants médicaux, d'équipements ou de systèmes.

Parmi les différents domaines technologiques, voici ceux qui ont un fort potentiel d'innovation et qui suscitent une demande toujours forte dans la recherche et le développement, ainsi que sur les risques afférents :

- les procédures d'images diagnostiques ;
- les techniques interventionnelles ;
- les technologies in vitro ;
- les systèmes informatiques médicaux et la télémédecine ;
- les prothèses et implants ;
- les systèmes de thérapie.

► **Une salle d'opération durable**

La salle d'opération est un élément central dans le cadre d'un hôpital. Le risque est grand et le coût élevé, pourtant de nombreuses initiatives peuvent voir le jour pour rendre le bloc opératoire plus durable en termes de coût-efficacité au sein de son environnement. C'est le bloc opératoire qui utilise la plus grande partie du matériel dans un hôpital et des études ont montré qu'il génère entre 20 et 30 % du total des déchets d'un hôpital.

L'initiative de Greenhealth « Greening the OR » (OR pour Operating Room) s'est donnée pour but d'identifier les meilleures pratiques et les données probantes autour des produits et des pratiques pour réduire les déchets, améliorer l'efficacité, accroître la sécurité des travailleurs et des patients et réduire l'impact environnemental. L'initiative a jusqu'ici considéré huit stratégies qui permettent aux institutions de réduire considérablement les coûts et les déchets.

De nombreuses astuces et plans sont capables de contribuer à une réduction des coûts dans la gestion de la salle d'opération. Parmi les conseils les plus fréquents, il y a la collaboration et la communication avec les médecins, l'analyse comparative des procédures et des processus, l'examen régulier des coûts et le fait de rester toujours à la recherche des meilleures offres.



► **Focus : Le Grand-Duché de Luxembourg**  
Par Marc Hastert et Laure Pellerin



La Fédération des hôpitaux luxembourgeois (FHL) regroupe les hôpitaux du Luxembourg, défend leurs intérêts professionnels et assure la promotion de toutes les avancées dans le secteur hospitalier, y compris le bien-être du patient. Au cours des dernières années, cette fédération a été particulièrement active et a restructuré son travail pour les hôpitaux autour d'une plateforme d'échange interdisciplinaire en se basant sur une étroite coopération entre les médecins, les infirmier(e)s et le secteur administratif pour créer des plans opérationnels et stratégiques.

La Fédération des hôpitaux luxembourgeois se perçoit comme un catalyseur d'unification dans le secteur hospitalier. De nombreux plans stratégiques concernant le secteur de la santé au Luxembourg y sont à l'étude. Parmi les plus emblématiques se trouvent la création de centres de compétence, le développement coordonné d'un codage des actes de diagnostics hospitaliers (CIM10) et des actes médicaux (CCAM), la création d'un laboratoire d'analyse unique dans le secteur hospitalier et la mise en œuvre d'un plan pour les services de logistique.

► **Focus: Lituanie**

Actuellement, un nouveau programme de santé 2020 est en cours de développement. Le programme vise à améliorer la santé de la population par un environnement social plus stable, un mode de vie sain et des soins de santé efficaces. La « santé dans toutes les politiques » est une approche qui inclut la construction et le renforcement des partenariats avec d'autres secteurs connexes et renforcer la responsabilisation en matière de santé publique.



Des changements importants dans le système de santé ont été marqués par deux facteurs principaux : l'apparition d'un tiers payeur par le biais d'une assurance maladie et l'application de la législation redéfinissant les droits de propriété et le statut des établissements de santé. Le pays dispose d'un système mixte financé par l'assurance nationale de santé fondée sur la participation obligatoire au régime d'assurance maladie et par le budget de l'Etat. La grande majorité des établissements de santé lituaniens sont des entreprises non-lucratives. Les droits de propriété et les fonctions administratives relèvent de la compétence du gouvernement central (ministère de la Santé) ou des municipalités locales.



Willy Heuschen

## MITVERANTWORTLICH ...

Die im Rahmen des EU-Vorsitzes Litauens abgehaltene Jahreskonferenz der European Public Health Alliance zeigte auf, dass die Ungleichheiten des Gesundheitszustandes der Bevölkerungen der europäischen Mitgliedsländer weiter und verstärkt auseinander klaffen. So zeigt eine Statistik, dass die Einschränkung der aktiven Lebensgestaltung bedingt durch Krankheit oder frühzeitigen Tod in Ländern mit tiefen bzw. mittleren Einkommen weiter zunimmt. Inzwischen ist diese Rate in diesen Staaten doppelt so hoch wie in den Ländern mit höherem Einkommen. Des Weiteren ist festgestellt, dass die Finanzkrise der europäischen Staaten nicht nur die Wirtschaftslage negativ beeinflusst. Sie hemmt auch den Gesundheitsschutz und hat nachhaltige Negativauswirkungen in den Gesundheitssystemen. Neben dieser Feststellung zeigt ein Arbeitspapier der EU Kommission weitere Faktoren auf, die den Gesundheitszustand der Bevölkerung beeinflussen. Diese sind vielfältig und reichen von der Ausbildung, der Beschäftigung, der Einkommenshöhe bis hin zum Lebensstil. Es liegt auf der Hand, dass die genannten Faktoren interagieren. In dem Arbeitspapier appelliert die Kommission an alle Länder und an deren Akteure ihrer jeweiligen Gesundheitssysteme, die Ungleichheiten im Gesundheitsniveau nachhaltig durch zielgerechte Aktionen und Investitionen zu verringern. Als Krankenhausmanager haben auch wir über das Leistungsangebot unserer Einrichtungen einen Beitrag zur Verbesserung des Gesundheitszustandes unserer Bevölkerung und somit zur sozialen Kohäsion zu leisten.

Die tägliche Praxis des Krankenhausmanagements zeigt, dass die genannten Ungleichheiten auch im eigenen Land und im Einzugsgebiet des Krankenhauses bestehen können. Das soziale Gefälle der Bevölkerung lässt sich leicht in einer Notaufnahme eines Akutkrankenhauses erkennen. Auch wissen wir, dass die verordneten Sparmaßnahmen derzeit in vielen Staaten den Patienten eine höhere finanzielle Selbstbeteiligung aufbürden. Es spricht von selbst, dass dadurch die Zugänglichkeit zur gesundheitlichen Versorgung gewisser Patienten beeinträchtigt werden kann.

Andererseits muss das Krankenhaus auch schwarze Zahlen schreiben, will es seinen aktuellen Leistungsstand absichern um zukunftsorientiert zu arbeiten. Dies geht meistens mit weiteren Investitionen einher, um mit der Entwicklung der Medizin und der Medizin-Technik Schritt zu halten.

Das Krankenhausmanagement hat in diesem Spagat zwischen der sozialen Verantwortungsübernahme und der Wirtschaftlichkeit der Einrichtung, kurzfristig und langfristig effizient zu handeln.

Wie sie nachlesen können, steht die EVKD ihren Mitgliedern in dieser schwierigen und vielfältigen Aufgabenstellung zur Seite. Der 24. EVKD Kongress, auf den wir in dieser Ausgabe eingehen, ist dabei ein gutes Beispiel, wie der Spagat zu meistern ist. Die Berichte zu IT Anwendungen in der Medizin Technologie, Erfahrungsberichte zur Sicherheit aus anderen Industriebereichen und bei endoskopischen Untersuchungen, und das Management des OP-Traktes enthalten weitere bereichernde Tipps, die wir Ihnen anbieten.

Des Weiteren stellen wir das IMPO-Modell vor, das wir künftig als Arbeitsmethode der EVKD gebrauchen möchten. Wie Sie nachlesen können, bietet IMPO eine globale Erfassung des Krankenhausmanagements und zeigt den Zusammenhang sowie die verschiedenen Aspekte auf, die bei einer Bewertung zu beachten sind. Ausgehend von den nationalen und gesellschaftlichen Vorgaben, die INPUTS, verdeutlicht es, dass alle Tätigkeiten im Krankenhaus Patienten orientiert und auf die soziale Verantwortung ausgerichtet und gemessen werden sollten. Das Management und die Prozesse, die Ärzte und unsere Mitarbeiter im täglichen Ablauf erbringen, sind dabei der Motor des Krankenhauses. Anhand dieses Modells glauben wir als Vereinigung ein bereicherndes Programm auf den Weg zu bringen. Wir sind überzeugt, dass IMPO ein idealer Ansatz ist, Krankenhausmanager voneinander lernen zu lassen und sie in ihrer Mitverantwortung für Patienten und die soziale Kohäsion zu stärken.

**Von Willy Heuschen,**  
*EVKD Generalsekretär u. Chefredakteur*



Leitartikel in (E)Hospital werden von Führungspersönlichkeiten der EVKD verfasst. Die hier veröffentlichten Beiträge geben dennoch ausschließlich die Meinung der Autoren wieder und sind nicht als offizielle Stellungnahme der EVKD zu werten.

## JOINT EUROPEAN HOSPITAL KONFERENZ

Nach dem Erfolg der „Joint European Hospital Konferenz“ im letzten Jahr schließt sich die EAHM abermals mit der ‚European Hospital and Health-care Federation (HOPE)‘ und der ‚Association of European Hospital Physicians (AEMH)‘ zusammen – und organisiert eine zweite Konferenz.



Die nächste Joint European Hospital Konferenz findet am Freitag, den 22. November 2013 in Düsseldorf statt, im Rahmen des 36. Krankenhaustages der Medica 2013.

Die Veranstaltung ist zweigeteilt: Die morgendliche Sitzung knüpft mit Vorträgen und Debatten über die Europäische Richtlinie der Patientenrechte nahtlos an die letztjährige Konferenz an, während der Fokus am Nachmittag auf dem innovativen Zugang in Europas

Krankenhäusern liegt.

### Umsetzung der Europäischen Richtlinie über Patientenrechte

Andrzej Rys, Direktor für Öffentliche Gesundheitssysteme der Europäischen Kommission, stellt die Voraussetzungen für die Implementierung der Richtlinie vor. Nachfolgend berichten Vortragende aus Schweden, Ungarn und Spanien über ihre Erfahrungen hinsichtlich der in den Richtlinien vorgeschriebenen Errichtung nationaler Kontaktstellen.

Xavier Brenez, CEO der ‚National Federation of Independent Health Insurance Funds‘ analysiert, wie sich nationale Gesundheitssysteme auf die Umsetzung vorbereiten können; Schlusspunkt der Sitzung ist die Debatte darüber, wie sich die Europäischen Referenznetze in die nationalen Strukturen einfügen. Vertreter aus Deutschland, Polen und Portugal berichten über die Situation in ihren jeweiligen Ländern.

### Innovativer Zugang in Europas Krankenhäusern

Die Nachmittagssitzung wendet sich der Innovation zu, einem Schlüsselpunkt im

Gesundheitssektor. Serge Bernasconi, CEO der Vereinigung der Europäischen Medizintechnik-Industrie (Eucomed), eröffnet den Nachmittag mit einem Überblick der Vorteile innovativer medizinischer Prozeduren und Produkte in Europa und den dafür erforderlichen wichtigen Entscheidungen.

Weiter geht es mit Innovation in der Praxis, hier thematisieren Vertreter aus dem Vereinigten Königreich, Frankreich und Italien die Entscheidungen und Vorteile von Innovation in der Gesundheitsversorgung. Dem anschließend folgt eine Podiumsdiskussion.

Wir erwarten etwa 150 bis 170 wichtige Entscheidungsträger aus Krankenhäusern in ganz Europa. Alle Vorträge werden simultan auf Englisch, Französisch und Deutsch übersetzt. Der Kongress findet von 10.00 bis 16.00 Uhr statt.

Das Mittagessen sowie der abendliche Empfang in Düsseldorf geben den Teilnehmern eine weitere Möglichkeit zum Netzwerken.

Mehr Information finden Sie unter: [www.medica.de/EHC2](http://www.medica.de/EHC2)

## 43. ORDENTLICHEN MITGLIEDERVERSAMMLUNG



ASSOCIATION EUROPÉENNE DES DIRECTEURS D'HÔPITALS  
EUROPEAN ASSOCIATION OF HOSPITAL MANAGERS

Abzuhalten am Donnerstag, den 28. November 2013, von 8.30-9:30 Uhr im Congress Center, room D, 1 rue du Fort Thüngen, L-1499 LUXEMBOURG

### Tagesordnung: Zur Beschlussfassung

1. Genehmigung der Tagesordnung
2. Genehmigung des Sitzungsprotokolls

der 42. Mitgliederversammlung vom 16. November 2012 in Düsseldorf, Deutschland

3. Bericht des Präsidenten zur Tätigkeit der EVKD 2012-2013
4. Rechnungslegung des Jahres 2012
  - 4.1. Erläuterungen durch den Generalsekretär der EVKD
  - 4.2. Prüfungsbericht der Rechnungsprüfer
  - 4.3. Genehmigung der Rechnungslegung 2012 und Entlastung des Präsidiums und des Generalsekretärs
5. Wirtschaftsplan für das Jahr 2014

5.1. Genehmigung der Beitragsordnung der ordentlichen und assoziierten Mitglieder (Art. 4.3.e der Statuten)

5.2. Genehmigung des Wirtschaftsplanes für das Jahr 2014

6. Wahl der Wirtschaftsprüfer für das Jahr 2013

7. Aufnahme und Ausschluss von Mitgliedern

8. Nächste Ordentliche Mitgliederversammlung 2014

Wir wären Ihnen dankbar, wenn Sie sich auf dieser Seite im Voraus anmelden oder entschuldigen könnten : <http://www.evkd.eu.org/GA2013.html>

### ► **Wir stellen vor: IMPO – ein neues Arbeitsmodell für die EAHM**

Von Willy Hesuchen, Jos Vanlandyut

Die EAHM ist sich der vielen Veränderungen auf dem Gesundheitssektor bewusst, und auch deren Bedeutung für Krankenhäuser und hier insbesondere Krankenhausmanager. Im selben Maß, wie unsere Krankenhäuser sich neuen Umständen anpassen und sich dabei weiter entwickeln, muss auch die EAHM mitziehen. Wir haben daher das neue Arbeitsmodell IMPO entwickelt: Inputs, Management, Processes, Outcomes.

IMPO ist für die EAHM und deren Aktivitäten ein Arbeitsmodell. Dieses Modell wurde nicht dem Kontext eines bestimmten Krankenhauses angepasst, doch wir sind davon überzeugt, dass IMPO generell bei der Analyse des Managements von Krankenhäusern hilfreich sein kann. Das Ziel von IMPO ist allerdings nicht die Evaluierung des Krankenhausmanagements (es ist daher auch nicht als Ersatz für derzeit eingesetzte Evaluierungsmethoden gedacht), sondern vielmehr die Untersuchung der Kausalitäten zwischen externen und internen Einflüssen und Endergebnissen unter Berücksichtigung von Kundenbetreuung und Rechnungswesen.

IMPO integriert die vier für die Leitung eines Krankenhauses relevanten Komponenten und unterstreicht damit den Bedarf für einen globalen Ansatz im Krankenhausmanagement. In seiner Verantwortung liegt die Aufstellung und Steuerung der Aktivitäten und des wissenschaftlichen Programms der EAHM.

### ► **Krankenhausmanagement in Zeiten von Krisen, Einschränkungen, Herausforderungen und Chancen: EAHM Kongress 2013**

Von Edyta Gurgul

Der 24. Kongress der Europäischen Vereinigung der Krankenhausmanager findet im November 2013 in Luxemburg statt. Als Organisator fungiert die Luxemburgische Krankenhausföderation (FHL), die am Kongress Hunderte von Krankenhausmanagern und Angestellte des Europäischen Krankenhausesektors zusammen-bringt. Zentrales Thema ist das Krankenhausmanagement in Zeiten von Krisen, Einschränkungen, Herausforderungen und Chancen.

In seinem Vortrag „Technologische Evolution, Ökonomische Krise und Krankenhausmanagement der Zukunft“ wird Hauptreferent Joël de Rosnay die Herausforderungen umreißen, denen sich Gesellschaft und Industrie gegenübersehen. Nachfolgend verfolgen die anderen Gastredner die Thematik im Verlauf von drei Präsentationsblöcken innerhalb von zwei Tagen:

- Strategie-Richtlinien in der Krise
- Umstrukturierung betrieblicher Abläufe
- Neue Gebäude, neue Verfahren, neue Technologien.

Mehr Informationen über Buchungen und das offizielle Programm finden Sie unter [www.eahm-luxembourg2013.lu](http://www.eahm-luxembourg2013.lu)

### ► **Widerstandsfähigkeit**

Von Andrea Aparo, Ugo Luigi Aparo, Gianfranco Finzi

Wir leben in sehr turbulenten Zeiten, die häufig als schwierig und negativ empfunden werden. Um damit umgehen zu können, können wir uns selbst dazu anleiten, den „Faktor der Widerstandsfähigkeit“ einzusetzen. Ärztliche Leiter müssen dazu fähig sein, ihre Entscheidungsprozesse nicht mehr nur auf die Ursachenanalyse, sondern auf effektive Aktionen und Reaktionen zu basieren, also weniger reaktives als viel mehr proaktives Verhalten zeigen, und den Fokus weniger auf vergangene Erfahrungen denn auf zukünftige Möglichkeiten zu lenken.

Im Angesicht eines unerwünschten Ereignisses prüfen viele von uns rasch Ursachen, Ausmaß und Dauer der Konsequenzen dieses Ereignisses. Wir stellen unverzüglich fest, welche Kräfte wir selbst kontrollieren können, und ob wir das Ereignis hätten voraussagen können. Manager mit Durchhaltevermögen verschwenden keine Zeit auf diese reflexiven Gedanken und setzen stattdessen auf aktives Denken, um diejenigen Aspekte der Krise und deren Konsequenzen zu identifizieren, die kontrolliert werden können. Das unmittelbare Ziel ist das Reagieren auf das Ereignis, sowie die Beschränkung von Krisenausmaß und -dauer.

### ► **Betriebsoptimierung mit integrierten Gesundheitsdaten**

Von Peter Osborne

Eine Betriebsoptimierung ist nicht darauf ausgerichtet, Kliniker zu mehr Arbeit anzuspornen. Vielmehr geht es darum, deren Interaktionen zu verändern – denn entsprechende Daten weisen darauf hin, dass eine umgehend ausgeführte Option in bestimmten Umständen die optimale Lösung sein kann. Das Verständnis für die Servicemarge und die Identifizierung von Dienstleistungselementen, die effizient sind und im Endeffekt weniger kosten als dafür budgetiert, erlaubt den Fokus auf diejenigen Bereiche, die mehr kosten als dafür budgetiert. Dies ist für das Erreichen von Rentabilitätszielen entscheidend. Die Entwicklung der Fähigkeit, Patienten oder Behandlungspfade korrekt die entsprechenden Kosten zuzuteilen ist ebenfalls essentiell für den erfolgreichen Übergang zu einer Leistungshonorierung.

Das Konzept der Kosteneinschätzung einer klinischen Interaktion und deren Effektivität ist ein hochkomplexes (und umstrittenes) Gebiet, doch gibt es echte Möglichkeiten, Effizienzförderung zu betreiben, wenn man sich mit der entsprechenden Logistik auseinandersetzt.

Alle Bilder und Videos finden Sie auf unserer Website [www.myhospital.eu](http://www.myhospital.eu)



▶ **Krankenhausarchitektur: ein multidisziplinäres Geschäft**

Von Julie Meldgaard, Stine Fausing Thomsen, Pernille Weiss Terkildsen

Gesundheitsdienste durchleben gerade eine Phase der raschen Expansion, mit neuen Herausforderungen in Behandlung, Kommunikation und Architektur. Ein Ansatz angesichts dieser Herausforderungen ist das bewusste Arbeiten mit der Struktur der physikalischen Umwelt; Ziele sind Verbesserung der Qualität der Behandlung, positive Veränderungen der Patienten-Erfahrungen und daher eine Verbesserung des Gesamtergebnisses.

Eine der Bereiche mit großem Verbesserungspotential ist der Treffpunkt verschiedener Fachkreise – wo Krankenschwestern, Ärzte und andere Angestellte auf Architekten, Techniker und Designer treffen. Die Gesundheitsfachkräfte können die Baufachkräfte dabei unterstützen, die bestmöglichen Lösungen für die genauen Funktionen, Abläufe und Arbeitsvorgänge des Krankenhauses zu finden. Die Bauleute wiederum sollten die Art und Weise verbessern, wie sie den innovativen Wert ihres Konzepts erklären – so dass es auch das medizinische Fachpersonal versteht.

Ein Krankenhaus ist auf vielerlei Ebene ein komplexes und veränderbares System. Anderen Menschen einen solchen Ort zu beschreiben, die sich selbst nicht in diesem System bewegen, verlangt Genauigkeit und Sorgfalt. Vor allem dann, wenn diese Beschreibung die Basis für die Entfaltung der persönlichen Kompetenz des Architekten darstellt. Diese professionelle Kompetenz erlaubt dem Architekten die Entwicklung neuer räumlicher Zusammenhänge und Möglichkeiten, von denen Arbeitgeber, Patienten und die Ökonomie des Krankenhauses profitieren können.

▶ **Weiterkommen durch miteinander Zurechtkommen: schwierige Gespräche meistern**

Von Stephen Baker

Bei vielen Handbüchern zum Thema der effektiven Führung steht die Struktur im Mittelpunkt: wie die Abteilung zu organisieren oder Autorität zu delegieren ist. Andere Leitfäden konzentrieren sich zu Recht auf den Aufbau und die Implementierung der Realisierung Ihrer ganz eigenen Mission. Diese Empfehlungen und Richtlinien sind jedoch häufig zu übergeordnet, auf metaphorischer Ebene zu erhöht. Sie beschäftigen sich nicht oder nur wenig mit dem konstanten, täglichen Wirrwarr vor Ort. Im wahren Leben sieht sich ein ärztlicher Leiter einem nicht enden wollenden Strom von Gesprächen gegenüber, manche trivial, manche bedeutsamer, einige überraschend wichtig, auch wenn sie informeller Natur sind und ad hoc in ihrer Darstellung. Und es sind genau diese Umstände, in denen Sie als Anführer getestet werden. Wie Sie in diesen Gesprächen fortfahren und diesen den richtigen Rahmen geben, ohne von Ihren Zielen abzukommen, spielt eine genauso wichtige Rolle wie das Planen und Durch-

führen große strategischer Initiativen.

Für das „Weiterkommen durch Zurechtkommen“ gibt es drei Schlüsselaspekte. Erstens, behalten Sie die Kontrolle. Ihre Effektivität als Manager ist abhängig von der Beibehaltung der Kontrolle. Der zweite Aspekt ist das Umgehen mit Übertreibungen, eine häufig übersehene wesentliche Fähigkeit des Metaphorik-Managements eines erfolgreichen Leiters. Und schlussendlich: hören Sie Vorschlägen zu, nehmen Sie sich Zeit, diese zu erwägen und geben Sie dann eine taktvolle Antwort.

▶ **Ein System zur Entscheidungsunterstützung erfreut Interessensvertreter und Operationssaal-Manager**

Von Theresia van Essen et al.

Während des ganzen Tages kann es aufgrund ungeplant langer Operationen und notfallchirurgischer Eingriffe zu Störungen des Terminplans des Operationssaals (OR) kommen, womit sich die Zeitpunkte elektiver Operationen verschieben können. Diese Verschiebungen können für Patienten, Krankenstationen und andere Abteilungen ungünstig sein, der OR-Terminplan sollte daher angepasst werden. Wir haben ein Entscheidungsunterstützungssystem (decision support system DSS) entwickelt, das den OR-Manager in dieser Entscheidung unterstützt, indem es die besten angepassten OR-Terminpläne anbietet. Das System berücksichtigt die Präferenzen der beteiligten Interessensgruppen und evaluiert lediglich diejenigen OR-Terminpläne, welche die auferlegten Einschränkungen erfüllen. Die für dieses System eingesetzten Entscheidungsregeln basieren auf einer umfassenden Analyse des Problems, das die Terminänderung verschuldet hat. Laut einer Simulationsstudie senkt das DSS die Anzahl gestrichener Operationen und steigert die Zufriedenheit von sowohl Patienten als auch Abteilungen; allerdings war auch eine dafür notwendige erhöhte wahrgenommene Arbeitsbelastung mehrerer Abteilungen ersichtlich.

▶ **Kann Ihre Gesundheit gefährden: warum fällt Gesundheitsdiensten das Risikomanagement so schwer?**

Von Stephen Leyshon, Eva Turk, Tita Alissa Listyowardjo, Anna Hayman Robertson

Gesundheitsdienste gefährden die Gesundheit der Patienten, also genau den Menschen, denen sie eigentlich helfen wollen. Von den 421 Millionen Krankenhäusern weltweit sind nach Schätzungen 42,7 Millionen mit unerwünschten Ereignissen jeden Ausmaßes assoziiert – damit steht die nicht gefahrlose medizinische Betreuung „an 14. Stelle der Ursachen von Morbidität und Mortalität, vergleichbar mit der Belastung auf-

grund von Tuberkulose oder Malaria“. Proaktive Risikoeinstufung (proactive risk assessment PRA) hat das Potential, ein wichtiges Werkzeug beim Ansprechen des dringenden Bedarfs für die Verbesserung der Patientensicherheit zu sein.

Ein datenbasierter Präventionsansatz hat bereits in anderen Sektoren mit Fokus auf die Sicherheit gute Arbeit gezeigt: Leistungsbringer im Gesundheitswesen haben dadurch die Möglichkeit, menschliche, technische sowie organisatorische Faktoren anzusprechen, sowie Gefahren zu identifizieren, zu entfernen oder zu minimalisieren, bevor sie Schäden auslösen. Es entspricht den Bedürfnissen der Gesundheitsdienste, denen eine Verbesserung der Sicherheit derzeit noch schwerfällt.

Trotz der Verfügbarkeit dieses Ansatzes zeigen eine Literatursuche und erste Fallstudien, dass sich Krankenhäuser beim Einsatz der PRA schwertun. Der Gesundheitsdienstsektor hat noch nicht den Reifegrad anderer Sektoren erreicht, die die Bewertung und das Management des Risikos auf systemischem Niveau als wesentlichen Bestandteil der Arbeit jedes einzelnen Angestellten sehen. In vielen Fällen muss sich ein Gesundheitsdienst erst mit PRA befassen, und zwar als mehr als nur eine technische Routineübung. Um eine Veränderung herbeizuführen, müssen Gesundheitsorganisationen ihre Kultur, Einstellung, Kompetenz und Ressourcen überprüfen, um allen Angestellten aller Ebenen die Identifizierung, Einstufung und Management des Risikos aus einer Systemperspektive zu erlauben. Dies ist ein wesentlicher Schritt, um Patientensicherheit für alle zu liefern.

### Management und Informationstechnologie im Operationssaal: Effektivität und Sicherheit verbessern

Von Vanni Agnoletti et al.

Der Operationssaal (operating room, OR) gilt als eine der kritischsten Krankenseinheiten, sowohl bezüglich Patientensicherheit als auch in finanzieller Hinsicht. Der vorliegende Artikel stellt ein theoretisches Modell namens ORMS vor (Operating Room Management System), eingebettet in wirtschaftliche Rahmenbedingungen, die mittels Indikatoren aus der medizinischen Literatur nützliche und einfach einzusetzende Informationen für das OR-Management bereitstellen. Das ORMS Modell basiert auf einem Tracking-System relevanter Ereignisse innerhalb des chirurgischen Behandlungspfades und bietet drei für verschiedene Akteure maßgeschneiderte Informationsprofile: Manager, Anästhesisten sowie Chirurgen. Nach zweijährigem Einsatz am Forlì Krankenhaus in Italien zeigt die OR-Leistung Verbesserungen von Effektivität und Patientensicherheit – womit bewiesen ist, dass Leistungsverbesserungen durch Implementierung innovativer Management-Modelle möglich sind, auch in Zeiten eingeschränkter Ressourcen.

### Vernetzte Gesundheit stärkt Patienten und Anbieter

Von David Pettigrew

Die Bevölkerungsalterung sowie die steigende Prävalenz chronischer Erkrankungen belasten die Gesundheits-Infrastruktur stärker als je zuvor. In Zeiten wesentlicher Haushaltseinschränkungen müssen Gesundheitsanbieter neue Wege finden, um Kosten zu senken und die Effizienz und Qualität der Versorgung zu verbessern. Die Technologie ist eine Grundvoraussetzung für die Realisierung dieser Ziele, vor allem in Form vernetzter Gesundheit. Grob definiert als Einsatz von Technologie zur Anbietung von Gesundheitsdiensten aus der Ferne und zur Lieferung schnellerer Antworten erlaubt die vernetzte Gesundheit die Realisierung auf immer neuen Wegen: Anwenderschnittstellen, Speicherung, Smartphones, energiesparende Vernetzungen, Datenverarbeitung und Analytik. Diese werden wiederum kombiniert mit Fortschritten auf dem medizinischen Gebiet wie neue Sensing- und Bildgebungstechnologien, Mikrofluidik, taktiles Feedback und Robotik, um für die wichtigsten Probleme im Gesundheitsbereich praktische Lösungen zu finden.

Wichtig: die vernetzten Gesundheitslösungen können zu jedem Zeitpunkt des Behandlungspfades eingesetzt werden, vom Erstkontakt des Patienten mit einer Gesundheitsfachkraft, -dienstleister oder -organisation über den Gesamtzeitraum der Behandlung bis hin zur Nachbetreuung. Diese Lösungen können zu Hause in Anspruch genommen werden, zwischen Heim und Praxis, innerhalb einer Praxis oder sogar zwischen Arztpraxen. Zu den möglichen Bereichen zählen Vitalzeichen, Schlaf sowie Überwachung der medikamentösen Compliance.

### Personifizierte Medizinische Technologie

Von Mathias Goyen

Die personifizierte Medizin ist im Gesundheitssektor sehr in Mode und zu einem dominierenden Leitthema der medizinischen Forschung geworden. Der Fokus lag hier auf der Entwicklung von Arzneimitteln, die eine maßgeschneiderte Therapie erlauben; doch das Prinzip der Personifizierung ist auch für medizinische Geräte interessant. Erstens sind medizinische Geräte für die Implementierung der personifizierten Medizin erforderlich, als direkte Kombination aus Diagnostik und Therapie (Theranostik). Zweitens ist das allgemeine Ziel der Verabreichung medizinischer Behandlung effektiver und weniger mit Nebenwirkungen behaftet, wenn die Patienten-spezifische Adaptierung auch auf das Design medizinischer Komponenten, Ausrüstung und Systeme angewandt werden kann.

Die folgenden technologischen Bereiche zeigen ein großes Innovationspotential mit einem anhaltend hohen Bedarf für Forschung und Entwicklung (R&D) und entsprechende signifikante R&D Risiken:

- Diagnostische Bildprozeduren
- Interventionelle Techniken
- In-vitro Techniken
- Medizinische Informationssysteme und Telemedizin
- Prothesen und Implantate sowie
- Therapiesysteme.

### ► Fokus: Luxemburg

Von Marc Hastert, Laure Pellerin

Die Luxemburgische Krankenhausföderation (FHL) bringt Krankenhäuser in Luxemburg unter einen Schirm, verteidigt ihre beruflichen Interessen und fördert den Fortschritt auf dem Krankensektor, einschließlich des Wohlbefindens



des Patienten. In den letzten Jahren zeigte sich die FHL besonders aktiv und hat ihre Arbeit für Krankenhäuser umstrukturiert in eine Plattform für interdisziplinären Austausch und enge Zusammenarbeit zwischen medizinischen, krankpflegerischen und administrativen Aktivitäten für die Unterstützung der operativen und strategischen Planung. Die FHL ist auf dem Krankensektor in der Position des einigenden Katalysators. Viele strategische Pläne für den luxemburgischen Gesundheitssektor stehen derzeit zur Diskussion. Zu den symbolhaftesten zählen die Erstellung von Kompetenzzentren, die koordinierte Entwicklung einer Kodifizierung von Rechtstexten basierend auf Krankenhausdiagnosen (ICD10) und medizinischen Prozeduren (CCAM), die Erstellung eines Einzellabors für Analysen im Krankensektor und die Implementierung eines Plans für Logistik-Dienstleistungen.

### ► Fokus: Litauen

Derzeit befindet sich das neue Litauische Gesundheitsprogramm 2020 in der Entwicklungsphase. Ziel des Programms ist eine Verbesserung der Gesundheit der Bevölkerung, mittels eines sichereren sozialen Umfelds, eines gesünderen Lebensstils sowie effektiver Gesundheitsversorgung. Der gewählte Ansatz lautet „Gesundheit in allen Bereichen“ und basiert auf dem Aufbau und der Stärkung von Partnerschaften mit anderen Sektoren, die mehr Verantwortung für den Gesundheitszustand der Bevölkerung erhalten sollen.



Hintergrund dieser grundlegenden Änderungen im Gesundheitssystem sind zwei wesentliche Faktoren: das Auftreten eines dritten Ausgabenträgers in Form des Nationalen Krankenkassensfonds (NHIF) und die Durchsetzung von Rechtsvorschriften mit Neudefinierung von Eigentumsrechten und dem Status von Gesundheitseinrichtungen. Das Land hat ein gemischtes System mit Förderung durch die nationalen Krankenkassen, basierend auf einer Pflichtmitgliedschaft der Krankenkassensysteme und dem Staatshaushalt. Die überwiegende Mehrheit der Litauischen Gesundheitseinrichtungen sind gemeinnützige Unternehmungen. Eigentumsrechte und Aufgaben der Verwaltung liegen im Zuständigkeitsbereich der Zentralregierung (Gesundheitsministerium) oder der örtlichen Gemeinden.







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