

Hospital



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CLINICIANS AND MANAGEMENT

Plus

Effective
Communication

Lab and
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Supplement

Infections

Focus: Finland

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GENERATION- FRIENDLY MANAGEMENT IN HOSPITALS



Nikolaus Koller

While food control authorities throughout Europe are busy chasing down horses disguised as cows, many people all over the continent are struggling for their existence, fighting to keep their jobs. The demographic change in the population in general has been leading to a completely altered situation on the job market, particularly for those working in healthcare.

As a matter of course, an ageing population brings with it an increase in the demand for health-care services of one percent per year, yet with that increase there is a totally new range of clinical pictures emerging in patients. The appearance of degenerative disorders of the musculoskeletal system and vessel diseases is on the rise; increasing numbers of tumours are being diagnosed and there are more and more multi-morbid patients and people suffering from dementia illness. The increased demand for care, and the resulting stress put on hospital staff are the logical consequences of this phenomenon.

This development presents a challenge for healthcare organisations. With the increase in the amount of stress the hospital staff has to endure, there comes a certain amount of loss of both productivity and staff motivation accompanied by rising costs. It might go so far as this development becoming a threat for the existence of the organisation.

A further challenge of demographic change will be found in raising the age of retirement to 70. What will end up being important here will be a transfer of knowledge and targeted leadership in mixed-age teams whilst keeping staff fit, motivated and qualified. The transfer of knowledge among experienced and new staff members needs to work well and not be frustrated by issues of hierarchy. What is particularly important and what hospital managers need to keep in mind is that it is not about just acquiring new staff for the hospital; it is about keeping them and bolstering them up.

In this issue of (E)Hospital we investigate the various approaches to communication for man-

agement personnel. The study presented describes management styles not only from the point of view of healthcare administrators; it also offers the insight of doctors and nurses in managerial positions. Three distinct styles will be shown: the standpoint of the management leaders, of the decision-makers and of those working with these groups, whereby it is quite interesting to note that doctors clearly see themselves in the role of management leaders.

A further important topic included in this issue is Leadership on the Front Line: A Clinical Partnership Model. This describes a leadership model in which the director of nursing and the administrator work closely with each other as partners.

Finland is our country focus. On average Finland spends a mere 7% of its gross national product on public healthcare and is below the EU average. Healthcare is mainly financed through taxation with communities paying about 70% of health expenditures. They receive government funds that vary according to age distribution, population density and the financial power of each community.

Presidential Newsletter

In his 2013 Presidential Newsletter, Mr. Heinz Kölling introduces a fourth main topic for the EAHM agenda: IMPO (Input-Management-Process-Output) which positions management in the context of the hospital. The newsletter also reports about the progress made in our Scientific Subcommittee as well as the Subcommittee European Affairs.

The Presidential Newsletter can be downloaded from our website <http://www.eahm.eu.org/> Documents Presidential Letters

Nikolaus Koller

President of the Editorial Board



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.



Clinicians and Management

Our cover story takes a look at clinicians and management. Rebekah Rogers tackles the age old question of leadership in the hospital, highlighting the different methods employed by hospital administrators, clinicians and nurses. Christopher Kim introduces us to the concept of local unit based leadership for an improved, patient-centred approach.

Lab and Diagnostics

This issue our supplement focuses on lab and diagnostics. As usual, there is one copy for you and one to pass on to the relevant department. Timothy Huerta and colleagues analyse implementation strategies for electronic lab order entry management, recommending taking things one step at a time. In terms of diagnostics, we report on advances in molecular testing and Heather Duncan and Peter van Manen take inspiration from formula one to early warning systems for paediatric patients.

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Focus: FINLAND



Founded in 1928 the Finnish Association of Hospital Economics describes itself as the link between people interested in health, health economy and health education and those who are working in hospitals, health centres or other sectors of healthcare system. From the very beginning the aim was to form networks and connect with colleagues working in similar sector and to arrange specialised education to better meet the health needs of the Finnish population.



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HOSPITAL MANAGEMENT IN TIMES OF CRISIS : CONSTRAINTS, CHALLENGES AND OPPORTUNITIES

24TH EAHM-CONGRESS, LUXEMBOURG, 28-30 NOVEMBER 2013

Challenges and Constraints in Times of Crisis

Today our hospitals face many challenges and constraints. Hospital budgets have been decreasing for many years and there are serious workforce shortages, especially in certain health professions, medical specialisations and geographic areas. Recent breakouts like H1N1/influenza, the highly infectious winter vomiting bug norovirus and hospital-acquired infections have a potentially huge impact for hospitals. On the other hand, there is an increasing clinical demand for high quality care combined with advances in medical technology. An ageing population also brings changing needs. The need for continuity of care is increasing while specialised care gets more centralised. This is just a short selection of the many challenges and constraints hospitals are facing.

Since 2008 and after a period of general growth and stability, all European Union Member States were hit –to different degrees – by a financial crisis, characterised by a strong increase in government deficit and public debt. Due to this precarious economic situation hospitals have then been at the core of many measures aimed at cutting costs and gaining efficiency, either

directly or indirectly.

The aforementioned challenges and constraints still remain, but are now intensified due to the financial crisis. Some consider the crisis as a wake-up call, believing we have been too comfortable for too long.

Opportunities in Times of Crisis

When a ship arrives in a turbulent sea or storm, it needs a strong captain to take up the challenge and look for opportunities to find calm water, knowing both the potential and limitations of the vessel and crew.

During the 24th EAHM-congress speakers from all over Europe will guide you through similar journeys. You will hear about the constraints they experience, the challenges they encounter and the opportunities they found in order to make beneficial organisational and structural changes in shaping their hospitals for the future.

So with the weakened economy and a reduced hospital budget, what can a hospital manager undertake to continue to deliver better care?

Like a captain facing a storm, hospital managers will have to refine their thinking in times of crisis. The congress, bringing recognised experts in the field of man-

agement together, will elaborate on this from different angles, developing strategic guidelines, introducing business process reengineering and introducing innovation through new technologies and processes. In this way, we aim to focus on areas where strong leadership will make the difference. Roundtables will give the opportunity to share best practices and discuss added-value. Posters will contribute by showing the implementation and practical benefits of quality measurement, patient safety, communication, quality and cost-effectiveness. On the exhibition floor, healthcare industry professionals will provide in-depth insight into the latest developments in healthcare.

It is impossible for the speakers and posters to highlight all the current constraints, challenges and opportunities. Therefore we foresee plenty of networking opportunities where participants can exchange their experiences and views. And to get some insight into the hospitals of Luxembourg, the pre-conference programme includes hospital visits.

We invite you to visit the congress website at <http://www.eahm-luxembourg2013.lu> and are looking forward to seeing you in Luxembourg!

NEW MEMBER

We are glad to present you The Dutch association “**Bestuurders Curatieve Zorg Nederland (BCZN)**” (Curative Care Managers of the Netherlands) as a new member of the EAHM. The BCZN represents managers with end responsibility in healthcare institutions. BCZN aims to join forces to support and strengthen the function of directors of healthcare institutions regarding contents and quality.

More information: www.bczn.nl

2ND JOINT EUROPEAN HOSPITAL CONFERENCE

The next Joint European Hospital Conference, jointly organised by HOPE, AEMH and EAHM will take place on Friday November 22nd 2013 in Düsseldorf (Germany) as part of the 36th Deutsche Krankenhausstag at Medica 2013.

The morning session will continue last year’s theme, looking into the European Directive on Patient Rights. In the afternoon, the conference will focus on access to innovation in hospitals.

More information:

www.eahm.eu.org/ ⇒ Resource center ⇒ List of congresses



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GERMANY: HOSPITALS CAUGHT BETWEEN PUBLIC EXPECTATION AND POLITICAL COST-CUTTING

'Hospitals: caught between public expectation and political cost-cutting': this was the central topic of the 20th Leadership Training jointly organised by the German Association of Hospital Managers (VKD), member of the EAHM, and the Association of Diagnostica-Industry (VDGH) in Berlin. Germany may well top the list of European states when it comes to economic growth, but the political pressure to cut costs has not spared German hospitals either. Smaller institutions in particular are feeling the heat and might no longer be able to fulfil their obligations to the public, signifying that the complete territorial coverage might soon falter.

However, all hospitals are affected by cost saving measures and structural deficits such as a lack of trained personnel. With the help of some well-grounded examples, Dr J. Düllings, President of the VKD, was able to show exactly how negative framework conditions undermine patient-centred hospital politics, and with it social politics as a whole.

Other expert speakers then broached the subject of several other priorities against the backdrop of rationalisation measures: e.g. the competence of hospital laboratories, implications and possible approaches regarding the lack of trained personnel, performance and quality demands on hospitals and en-

isations of medical technology and hospital associations, of course including the patient representative of the Federal Government as well as health insurance representatives. We laud this instructive initiative in cooperation with the VKD, which clearly demonstrated how actors in the hospital sector could



Photo: Roundtable discussion at the 20th Management Seminar 'VKD VDGH in Berlin' under the expert moderation of Mr. Dr. RM Schmitz (VKD Board Member) four from the left, next to him Dr. J. Düllings, President of the VKD.]

suring medical advances in basic care.

Like all meetings before, this 20th session proved its worth by relying on the tradition of exchange and discussion amongst representatives of key organ-

and should take on responsibility, especially in times of crisis such as these. Certainly it has set an example to follow, for all of us hospital colleagues in each and every European country.

IMPROVING PATIENT OUTCOMES: A SHARED RESPONSIBILITY

CONGRESS REVIEW: 18TH EAHP CONGRESS, MARCH 2013, PARIS

March 2013 saw another successful congress from the European Association of Hospital Pharmacists (EAHP). This year's focus was Improving Patient Outcomes: A Shared Responsibility. Over 3,000 Hospital Pharmacists braved unseasonably cold temperatures and snow in Paris to attend the congress. And with a packed programme of scientific sessions, satellite symposia and social events, they were not disappointed!

The congress addressed the following issues:

- How can professionals work and collaborate better to ensure the very

best patient outcomes?

- What are the barriers to such cooperation and how do we overcome them?
- What aspects of regular practice might need to be rethought to deliver positive change in inter-disciplinary cooperation?

Dr. Marianne Ivey, Associate Professor in Pharmacy Practice at the University of Cincinnati, Ohio gave the opening keynote speech. She examined the meaning of the hospital pharmacist's responsibility and accountability in patient care and the role of the pharmacist within the inter professional team.

Another highlight from day one was the first ever student session at an EAHP congress. Entitled "Student to Hospital Pharmacist- Breaking down the barriers", Hospital Pharmacists from France, USA, Austria and the UK imparted their wisdom and experience with today's students.

Other sessions included seminars on biosimilars, accreditation and quality management and a workshop on the art of writing an abstract.

For more information on the congress and the EAHP in general please visit:

www.eahp.eu

For photos and videos of recent events please visit myhospital.eu



25. Kongress EVKD
25th EAHM Congress
25^e Congrès AEDH
Berlin 2014

SAVE THE DATE

25. EVKD-Kongress Berlin

10. - 12. September 2014



Herzlich laden wir Sie schon heute zum 25. Kongress der EVKD nach Berlin ein!

Vom 10. bis 12. September 2014 werden wir im Zusammenchluss der Europäischen Krankenhausdirektoren die Zukunft der Gesundheitswirtschaft diskutieren und weiter voran treiben. Markieren Sie sich daher den Termin schon heute vor! Weitere Informationen finden Sie unter www.eahm-berlin2014.eu

Invitation to the 25th EAHM Congress in Berlin!

European hospital managers will be discussing the future of the health sector and development options at the EAHM Congress from 10 to 12 September 2014. Please save the date in your diary today! For further information please visit www.eahm-berlin2014.eu

Nous vous invitons cordialement dès aujourd'hui au 25^{ième} congrès de l'AEDH à Berlin!

Du 10 au 12 septembre 2014, nous discuterons ensemble dans le cadre du regroupement des directeurs d'hôpitaux européens l'avenir de l'économie de la santé et le forons progresser. Nous vous prions donc de noter cette date dès aujourd'hui! Vous trouvez d'autres informations à l'adresse www.eahm-berlin2014.eu



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ACTION PLAN FOR THE EU HEALTH WORKFORCE ADOPTED FOR A JOB RICH RECOVERY IN EUROPE

On April 18 2012, the European Commission adopted a Communication "Towards a job rich recovery", which sets out a range of measures to encourage employment and strengthen economic growth in Europe. It also identifies healthcare as one of three key sectors with a high employment potential and includes an Action Plan for the EU health workforce.

The Communication focuses on the demand-side of job creation, setting out ways for Member States to encourage hiring by reducing taxes on labour or supporting business start-ups more.

tackle its unacceptable level of unemployment. The EU has a large untapped potential to boost job creation. All together, the green economy, the health and new technology sectors will create more than 20 millions of jobs in the years to come. Member States need to seize these opportunities, mobilise existing resources and stimulate their labour market in close cooperation with the social partners. Together we can make it happen."

Healthcare is highly labour intensive and one of the largest sectors in the EU, accounting for about 17 million or 8% of all jobs in the EU.

The Action Plan aims to assist Member States to tackle these challenges and sets out actions to foster European cooperation and share good practice to help improve health workforce planning and forecasting, to anticipate future skills needs, to improve the recruitment and retention of health professionals while mitigating the negative effects of migration on health systems.

The Action Plan for the EU health workforce was announced in the Commission Communication "An Agenda for new skills and jobs" in November 2010. The actions proposed reflect the priorities identified by EU health ministers in December 2010 and build on feedback from the Commission's public consultation on the Green Paper European Workforce for Health in 2008.

Presenting the new package in Strasbourg, László Andor, EU Commissioner for Employment, Social Affairs and Inclusion said: "current levels of unemployment in the EU are dramatic and unacceptable. Job creation must become a real European priority". He added: "If we are to restore growth and cope with major structural changes like the greening of the economy, an ageing population and technological change, the EU needs a dynamic and inclusive European labour market".

For more information, please visit: http://ec.europa.eu/dgs/health_consumer

The Action sets out actions to foster European cooperation and share good practice to help improve health workforce planning and forecasting, to anticipate future skills needs, to improve the recruitment and retention of health professionals while mitigating the negative effects of migration on health systems

It also identifies the areas with the biggest job potential for the future: the green economy, health services and ICT. The policy communication underlines the need for a stronger employment and social dimension to EU governance and lays down ways to involve employers' and workers' representatives more in setting EU priorities.

President Barroso said: "Europe needs a job-creation strategy to

Despite the economic downturn, the sector continues to grow and, with an ageing population and the rising demand for healthcare, will remain a key driver for jobs with an estimated 8 million job openings between 2010-2020.

However, the sector faces major challenges at a time of severe budget constraints, including health workforce shortages and skill mismatches in many countries.

For photos and videos of recent events please visit myhospital.eu



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LEADING AND COMMUNICATING IN THE HEALTHCARE INDUSTRY: UNDERSTANDING THE TOOLS FOR SUCCESS

By Rebekah Page Rogers

The healthcare industry is constantly advancing. In the past decade, the healthcare business has grown into a societal superpower that provides critical medical services for citizens and serves as an economic engine for communities. At the same time, the healthcare industry is complex and multifaceted. Due to the complexity of this system, changes in healthcare have left leaders weary and doubtful of their ability to provide their organizations with a sense of direction.

Consequently, healthcare workers must be strong leaders in order to operate efficiently and effectively. The need for leadership is evident because today's healthcare leaders face more challenges due to the increasing complexities that arise in the healthcare industry. Twenty-five years ago, hospitals operated primarily to provide patient care and hospital man-

Leadership is about discernment; having the ability to discern and navigate the messy and tangled web of doing what you believe is right. Understanding the importance of effective leadership styles and communication practices, regardless of profession, can help further develop the capabilities and skills of leaders.

tion styles, it is first important to carefully differentiate between the terms leading and managing.

Curtis, Vries, and Sheerin (2011) suggested that managers administer, maintain, control, have a short-term view, and initiate. Kotterman (2006) contended that managers tend to "plan and budget," as well as focus on narrow objectives in order to "maintain order, stabilise work, and organise resources." Additionally, managers often seek to "control and problem solve" as they "produce standards, consistency, predictability, and order." Kotter (1995) in Kotterman "sees management as dealing with procedures, practices, and complexity and leadership as dealing with change" (Kotterman, 2006; p.16) On the other hand, Curtis, Vries, and Sheerin (2011) recognised that leaders innovate, develop, inspire, challenge the status quo, and focus on a long-term vision.

This article will shed light on the leadership communication styles of healthcare professionals. By doing so, it will identify different leadership styles and how they are correlated to selected healthcare professions. Specifically, the terms transformational leadership, transactional leadership, and servant leadership will be explained, as well as how they can be applied directly to the healthcare professions of physician, nurse, and hospital administrator.

Physicians were trained to function under their own self control and partnership is a difficult quality to learn after many years of function in one particular way

agers did not have to deal with multiple business lines. The more complex the system, the less efficient its operation, is an adage that remains true for today's healthcare system. Researchers are realising that employee commitment and loyalty is at an all time low. Additionally, today's healthcare executives, physicians, and patients are generally "dissatisfied with the management in the industry" (Dye & Gasrman, 2006; p.7).

Leaders are an essential component of successful healthcare initiatives. Patients turn to physicians, nurses, and hospital administrators for guidance and direction. Souba wrote that "health care today needs...a new kind of leadership...; strong leaders and a new cultural context in which they can lead" (Souba, 2011; p.1).

Learning about effective leadership practices is also important in order for individuals to grow professionally, personally, and developmentally in every aspect of their lives. Leadership is a working component of every job. Individuals who exemplify superb communication and leadership skills will often find success in their organisation at a faster pace than individuals whose communication and leadership skills are not natural. Let's look first at the differences between management and leadership.

Understanding The Differences Between Leadership and Management

When exploring leadership communica-

Types Of Leadership

Transformational Leadership

James McGregor Burns' book 'Leadership' from 1978 is considered to be the

seminal text in the field of leadership studies. Burns defined transformational leadership as the following: “wherein one or more persons engage with others in such a way that leaders and followers raise one another to higher levels of motivation and morality.” Avolio and Yammarino stated that transformational leadership consists of the following key factors: “One, charisma, instills faith, pride, and respect for the leader. The second, individualised consideration, involves treating all staff as respected individuals with unique needs. The third, intellectual stimulation encourages staff to think in new ways.” (Spears, 1998; p.173) According to Burke and Cooper (2006), these types of leaders closely identify with their subordinates and with the purpose of the organisation. Motivation also plays a significant role in transformational leaders, especially since it leads to success in their position and an optimistic outlook on the organisation. Additionally, transformational leaders are not set in their ways. They are open to change and often appreciate a creative approach to problem solving and teamwork.

Transactional Leadership

Transactional leadership occurs when one person takes the initiative in making contact with others for the purpose of an exchange of valued things. The trade could be financial, social, or emotional in nature: an exchanging of a product for money; the trading of ideas among businessmen; or even providing a listening ear to those in need. Burke and Cooper stated that, “transactional leadership has two components: the transactional leader exchanges rewards contingent upon the exhibition of desired behaviours and results, and intervenes when performance falls short” (Burke and Cooper, 2006 p.13). Burke and Cooper also noted that transactional leaders are different from transformational leaders in a fundamental sense – they work within the boundaries and the existing standards of the organisation. Few risks are taken and the focus of the work is on efficiency, control, stability, and predictability.

While transformational and transactional leaders are different, it is impor-

tant to know that they are also complementary in nature to one another and are not complete polar opposites. Both styles may be associated with the achievement of desired performance objectives. It is clear that leaders can function using both styles cooperatively and can many times enhance each other on the job.

Servant Leadership

The term ‘servant leadership’ was coined by Robert Greenleaf in his influential 1970 essay, “The Servant as Leader.” Greenleaf believes these types of leaders focus on the service aspect first with a natural tendency to help others. Once service is achieved, then the individual aims to lead as a result. Greenleaf wrote that the best way to determine if a person is a servant leader is to identify whether or not they grow as a person, become healthier, and more likely to develop an autonomous and selfless desire to serve others. Servant-leadership is a long-term, transformational approach to life and work. Spears (1998) believes that the following characteristics are central to the development of servant-leaders: listening, empathy, healing, awareness, persuasion, conceptualisation, foresight, stewardship, commitment to the growth of people, and building community. Spears believes that these ten characteristics “serve to communicate the power and promise that this concept offers to those who are open to its invitation and challenge (Spears, 1998; p.6).

The Physician as Leader

“Achievement, taking risks, stamina, intense focus, quick decision making, and personal accountability” are common traits among physicians (Bujak, 2008; p.4). Bujak suggested that physicians are motivated by their own personal goals rather than universal organisational missions. Souba wrote that “today’s medicine structure incents physicians and other leaders to focus on knowing, having (titles, power) and doing (out-performing) such that personal gain is often valued above service to others.” Physicians often tend to themselves and typically do not think of themselves as a team player. However, Palmer, Cragg, Wall, and Wilkie (2008) found that

physicians do not regard themselves as being “me” people but rather, physicians’ self-reported themselves as being ‘coordinators’, ‘team workers’ and ‘company workers’. From this claim, it is obvious there is incongruence with how physicians function and how physicians view themselves. Physicians were trained to function under their own self control and partnership is a difficult quality to learn after many years of function in one particular way.

The healthcare organisation and the physician typically have different missions. Bujak noted that the most important action to create an effective healthcare organisation is to link the goals of individual physician practitioners with the actual needs of the healthcare setting. If physicians can see a direct connection with their success and the goals of the organisation, then a positive working relationship can occur. If this action is not the result, then the vision will fail and self-interest will take over.

With this said, healthcare organisations that seek to collaborate with physicians form their relationships based on negotiations. Bujak confirmed that one can enter negotiations by adopting one of the four postures: competition, accommodation, compromise, and collaboration. In many cases, physicians tend to operate under a transactional leadership style, which “correlates with the observation that their team preferences are for accepting and working within the system as it is (mostly transactional), rather than for making changes and shaping the future (more transformational)” (Palmer et al., 2008). Physicians are expected to have all the answers, bear the ultimate legal responsibility, and never make mistakes. Therefore, it is not surprising that physicians have a strong need to be able to predict, and thus control, their environment.

The Nurse as Leader

According to Dirschel, “leadership in nursing is a goal, vision, and expectation for all professional nurses in any form of practice” (Dirschel & Klainberg, 2010; p.4). Ultimately, all forms of nursing leadership must result in excellent patient care and patient outcomes. The nurse leader

possesses specialised leadership responsibilities and expectations that go beyond that of the generalised nursing responsibilities. Dirschel believed that “the nurse leader is the visionary and the catalyst who brings power to nursing practice and creates an environment in which innovation and ideas about nursing practice can flourish”. Further, the nurse leader should be a role model in seeking to create the best environment for nurses to succeed and must also communicate the need for a caring environment where patients are the priority.

and engage in their own self-reflection of how they can grow and better themselves as a leader.

The Hospital Administrator as Leader

One might expect for a hospital administrator to be extremely power driven, status driven, and the like. The leadership development of a hospital administrator must start early in life. Typically, a person must climb up the ladder of success in an effort to become a hospital

ees know and understand the vision and mission of the organization and that they are able to work together on ensuring that vision and mission is communicated and implemented. Hospital administrators must demonstrate effective communication to all people across all professions. These leaders must communicate in a way that inspires and motivates others to succeed in their job so the organisation as a whole benefits. Most importantly, hospital administrators must know themselves. It is by their own self-conceptualisation that they are better able to understand their own individual strengths and weaknesses. If successful at this task, administrators will be able to play to their strengths when working to increase effectiveness organisation-wide.

Conclusion

So what is the best type of leadership style for each of these professions? The answer is not that simple. The beauty is always in the beholder. Each individual carries their own unique “toolbox.” Each individual has their own unique personality, experiences, beliefs, and attitudes. Leadership is not a “one size fits all” equation. The bottom-line is that individuals need to make themselves aware of the different styles of leadership and become more conscious and reflective of their own communicative and leadership practices. For it is with education and reflection that individuals are able to create positive change.

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The key to successful leadership in any hospital department is to ensure that the employees know and understand the vision and mission of the organisation and that they are able to work together on ensuring that vision and mission is communicated and implemented

Dirschel subsequently recognised that “the nursing leader also energises the dynamics of the other personnel groupings and the vision, mission, structure, and resources of the broader institution.” It is by these actions of the nurse leader that the professionals from different healthcare specialties can better work together in concert with the overarching mission and vision of the institution as a whole.

Some scholars suggest that nurses embody a transformational style of leadership and often seek to create “a warm, safe, and supportive organizational culture and work climate.” (Souba, 2011). Others believe that nurses embody a servant-like approach to leadership. It is important to note, though, that it is impossible to generalise any profession as a certain type of leadership style; each individual is unique in their own way. Regardless of which type of style these professionals embody, it is more important for them to educate themselves about the different styles of leadership

administrator. This career path could ultimately be embedded in the servant leadership ideology: the desire to give back or contribute in an effort to help others as a hospital administrator. Longest identified several key roles of the department manager which are:

- “Achieve internal agreement on the department's purposes and priorities;
- Build support for the department's priorities among internal and external stakeholders;
- Strike a workable balance between the economic, professional, and social interests of all those involved in the department; and
- Negotiate effective relationships inside the organisation that houses the department and, perhaps, with other organisations.” (Longest, 1997)

Longest believed that the key to successful leadership in any hospital department is to ensure that the employ-

LEADERSHIP AT THE FRONT LINE

A Clinical Partnership Model

By Christopher Kim

Hospital-based patient care has become more complex over time, with higher acuity of cases, and greater need for care coordination among all healthcare providers. And, for most patients, being hospitalised can be a harrowing new experience that they hope will go well. However, a fundamental and integral part of patient care—that is, to engage and partner with the patient and their family members in all aspects of their care—has sometimes become lost among all the other duties placed on healthcare providers.

Healthcare providers spend a considerable amount of their time complying with documentation requirements, ensuring quality and safety checklist have been completed, and discussing the patient case with other care providers. While these activities are important in making the healthcare organisation “run”, it is just as important (if not more), to ensure that healthcare organisations strive to provide a patient-centred experience through the entire hospitalisation.

The Unit Based Leadership Model

There are different approaches a healthcare organisation may take to meet the goal of providing patient-centred care in the hospital. One strategy that hospital based leaders might consider is to implement a local unit based leadership model to champion the patient-centred approach. In an article describing our organisation’s approach to organising and managing a unit based leadership model, we describe the selection process of the unit based leaders, the goals established for the units, and the support that they can expect to receive to accomplish those goals (Kim et al., 2012). The central point of this model is founded on the idea that broad institutional strategic decisions are developed at the senior leadership level, but the execution of these strategic goals are accomplished at the level of direct patient care.

By establishing a unit based medical director to partner with a nurse leader on the unit, they can monitor the patient care activities where they are doing well, and selectively identify areas where they need to improve. Together, they can work with the unit based primary and support staff (e.g. nursing, pharmacy, therapists, case managers and social workers, nutritionists, clerical and custodial staff) and the physician teams to

improve the culture of the interdisciplinary workplace, focus on quality, safety and efficiency initiatives, and enhance the patient’s hospital care experience. There are established metrics for each of these categories, and it is important that the hospital leadership provides these data to the unit based leaders, along with their targets.

culate incentive payments to hospitals.

For hospital based leaders to be able to improve on these patient-centred experience measures, they need to first have a good understanding of the local care environment, which is where the unit based leadership model can be beneficial. As the front line leaders, and with first-hand experience of providing pa-

Broad institutional strategic decisions are developed at the senior leadership level, but the execution of these strategic goals are accomplished at the level of direct patient care

Rating Patient Experience

For U.S. based hospitals, the patient care experience rating for each hospital is publicly available through the Centers for Medicare and Medicaid Services’ Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey (<http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/HospitalHCAHPS.html>). These surveys administered to adult patients recently discharged from the hospital, report measures on topics such as nurse communication, doctor communication, responsiveness of hospital staff, pain management, communication about medicines, discharge information, cleanliness and quietness of hospital environment, and overall rating of hospital and willingness to recommend hospital. Beyond helping patients compare how hospitals perform relative to these measures, some of these measures are also used to cal-

patient care on those units, the medical director and nurse manager are well positioned to identify specific target areas and work with staff to facilitate patient-centred care. To accomplish this goal, the unit based leaders should be supported in their work in the following areas.

First, while most people can recognise good service and experience when they receive it, it is not always intuitive to understand what it takes to deliver good service. The selected leaders on the unit should be identified based on their commitment to improving the mission of the organisation, and to assist them in this goal, they should be trained in what it takes to deliver patient-centred care. A training programme on customer service enhancement may be helpful, but healthcare service excellence needs to also incorporate the patient and their families into the patient care model. Additional training on patient-centred care, through conferences, seminars, and talking with patient and family advisory councils are just some ways in which the unit

based leaders can keep updated and receive feedback on the latest practising enhancements to patient-centred care.

Second, the clinical leaders at the unit level need to model the behaviour of practicing interdisciplinary rounds at the patient's bedside. This concept may be foreign to some services, but is a model of care that has been utilised and improved over time by other services. For example, in the field of paediatrics, there has been recognition of the need to work closely with family members in all decision making in the hospital as integral partners in the child's care. In our organisation, it was the paediatric unit leaders that have incorporated the idea of conducting inter-disciplinary bedside rounds. The members of the healthcare team usually include the physician team (students, residents, and attendings), nursing staff, the case manager, social worker, and pharmacist, who

as develop the script for the care providers to discuss with their patients.

Last, the unit leaders need data in the form of a dashboard that can let them know how they are doing relative to these patient centred measures over time, as well as how they compare to the other clinical units in the hospital. The measures of HCAHPS data are delayed, and thus many hospitals utilise surrogate survey data from either the same survey vendors that conduct the HCAHPS, or internally developed questions. These data should be summarised for the unit leaders, that can clearly show the areas that they are doing well in (green) to those areas where they are stable (white) to those areas that they need to improve (red) at one glance—see figure 1. Additional information through patient comments collected should also be made available to share

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Reference:

Kim CS, Calarco M, Jacobs T, Loik C, Rohde J, McClish D, Mychaliska KP, Brand G, Froehlich J, McNeice J, Chang R, Grunawalt J, Schmidt PL, Campbell DA Jr. (2012) Leadership at the front line: a clinical partnership model on general care inpatient units, *American Journal of Medical Quality* 27(2): 106-11.

Key Performance Indicator	All Inpatient Units	Unit A	Unit A (moving average from 12 months)	Unit B	Unit B (moving average)	Unit C	Unit C (moving average)
Overall rating of care given	95	97.2	3.5	88	2.8	94	0.2
Likelihood recommending hospital	95.5	98	4.9	92	2.2	96.5	5.2
Promptness of response to call	90.2	93.4	4.2	90	0.1	88.5	0.5
Friendliness/courtesy of nurses	93.5	93.2	2.2	89.5	3.1	92	2.3
Nurses' attitude toward requests	90.3	91	1.1	89.5	2.2	91.3	2.6
Physician addressed concern	86.5	88	0.8	85	-3.2	85.5	-2.9
questions/worries	87.2	89	3.3	85.5	-4.1	88.9	-1
Physician kept you informed	86.5	87.6	1.1	81.3	-5	89.5	-2.2
Friendliness/courtesy of physician	90.2	92.2	3.3	85.3	0.5	93.2	3.3
Instructions for care at home	85.2	88.9	4.5	94.4	4.5	81	-4.9
Speed of discharge process	87.6	90.1	2.3	85.5	0.5	86	0.2
Pain control	88.9	89.8	3.3	82.4	3.3	85.7	-1.5
Staff wash hands before exam	84.7	86.5	5.5	82	-2.2	86	2.5
Response to concerns/complaints	88.9	94.4	3.2	83	-3	89.9	1.1
Staff worked together to care for you	84.6	86.9	2.6	85	4.5	81.2	-5.3
Room cleanliness	78.5	88.5	8.3	72	-3	80	-3
Noise level in and around room							

Figure 1: Example of a unit based dashboard revealing the units' performance on patient-centred metrics relative to the hospital as well as relative to itself over time. Areas highlighted in green represent performance metrics where the unit is doing well, and those areas highlighted in red represent performance metrics where the unit is not doing well. Those areas not highlighted indicate average or stable performance over time.

meet with the patient and family at the bedside to discuss the plans for the day, as well as address any questions that the patient/family or any of the team members may have to clarify these outstanding issues at the bedside. This requires careful coordination, and so clear expectations about the timing of these rounds, as well as informing the appropriate staff that their patient is next in line for these rounds is critical, and the unit leaders help to work on continuously improving this practice. The adult care hospital can also adopt this practice to conduct patient centred discussions at the bedside, and the unit based leaders can help to coordinate this workflow as well

with the unit's staff on both praise and improvement opportunity comments.

Conclusion

In conclusion, the unit based leaders have local awareness, and control over the practice of interdisciplinary patient-centred care, and through the appropriate selection process of these leaders, and providing them with the strategic direction of the organisation and the appropriate training and support through data, they can be the primary effector arm of how patient-centred care can be achieved in the hospital.

Key Facets of Unit Based Leadership Model

- Strong commitment to the mission of the organisation;
- Specific training on patient-centred care and customer service enhancement;
- Implementation of interdisciplinary rounds at the patient's bedside; and
- Use of data to make comparisons, to highlight successes and areas for improvement.

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THE WHO SURGICAL SAFETY CHECKLIST

Effective Communication for Hospital Risk Management

By Axel Fudickar

Hospital risk management includes human factors and technical hazards as well as leadership, procedural, educational, financial and organisational issues. The World Health Organisation's Surgical Safety Checklist is a multifunctional risk management tool related to all these fields. The checklist reduces perioperative morbidity and mortality. However, its effectiveness depends on correct implementation and performance. Not only checking of important items, but also communication, teambuilding, leadership, education and organisation are important.

The Surgical Safety Checklist

The WHO Surgical Safety Checklist is a checklist designed to reduce perioperative mortality and morbidity by avoiding errors and complications of surgery and anaesthesia. It consists of three parts, each containing roughly ten items concerning identity of patient and team members, anaesthetic and surgical procedures, pre-existing diseases, equipment and postoperative recommendations. These items have to be checked and communicated orally to all participating team members at three points in time during the procedure.

The first point is immediately before induction of anaesthesia (Sign In), the second immediately before incision (Time Out) and the third (Sign Out) immediately after suture. At these points in time the activity of all team members has to be interrupted to ensure that everybody is participating in communication.

The WHO checklist can be downloaded from the WHO website together with a guideline for implementation. Both correct and incorrect practical application of the WHO checklist are demonstrated on videos accessible via YouTube.

The effectiveness of the WHO checklist on morbidity and mortality was first shown by Haynes et al. in 2008. These results led to a worldwide recommendation to use the checklist during all surgical procedures issued by the WHO and a number of studies confirming its effect on outcome and safety culture. These studies have been reviewed recently. This article focuses on the general principles of risk management involved in correct application of the WHO checklist and their impact on implementation.

A Multifunctional Risk Management Tool

Human Factors

Risk management must take into account human factors, communication, equipment and processes as well as leadership, procedural, organisational, financial, and educational issues. Implementation and use of the WHO checklist is related to all these fields (Figure. 1). Human factors have been recognised as primary sources of complications and critical incidents in medicine as well as in other critical environments in industry and transportation. Lack of knowledge and skills, errors, mistakes and mishaps are causes of false actions and thoughts resulting in adverse events. These individual errors can be reduced by checking important issues using the WHO checklist.

Communication

In addition to individual human errors, communication problems have been identified as a major cause of complications in medicine. Bad communication habits increase the risk of complications due to loss of important information. Hence, understanding and using the WHO checklist as a communication tool is essential for its effectiveness.

This aspect is not always easy to realise in practice. Speaking up and repeating all important aspects loud and clearly to all team members is unfamiliar to many operating room staff members and sometimes regarded as redundant and too time consuming. Using the checklist is often reduced to ticking all the boxes by one team member without communicating with others. Therefore training and supervising the application of the checklist in clinical practice are important parts of implementation. This is achieved, if

one team member with sufficient authority supervises and corrects errors during the use of the checklist.

Equipment

Equipment problems and technical hazards are rare in comparison to human failure. However, they are regarded as more avoidable than the latter by defined interventions. Confirming functioning of technical devices and completeness of instruments are parts of the three points in time of the WHO checklist. Procedural standardisation is another important issue. Local written and standardised procedures referring to national or international guidelines are recommended to reduce perioperative risk. The WHO checklist is a standardised protocol and operating theatre workflow is facilitated by the clear communication structure provided.

Leadership

Leadership style also has a substantial impact on team performance, error rates and patient outcomes. Top-down attitudes combined with misconduct, intimidating or disruptive behaviour negatively affects the mood and well-being of co-workers. Moreover, it increases error rates and impairs patient outcomes in the operating room. Leadership in medicine is widely regarded as a soft skill that cannot be taught or influenced by systematic approaches. However, there is a lot of available literature on leadership and some basic principles can be learned quickly.

Good leaders have an equally high goal and people orientation, thus keeping a balance between the requirement of achieving a task and good interpersonal relationships. They prefer a flat hierarchy with short lines of communication. Performing the WHO checklist

systematically enforces good leadership habits like contacting and informing all team members about what is planned and what background information is needed as well as providing time for remarks and questions without disturbing the procedure.

Intentionally including all team members in information exchange regarding the upcoming common task during Sign In and Time Out enforces teambuilding, thus improving motivation and performance. Sign Out functions not only as an information exchange about the completed procedure and postoperative orders, but also provides an opportunity for a short team debriefing including critical incident reporting, if needed. In complicated cases this is an opportunity to arrange a postoperative meeting to debrief the case systematically. The

positive effect on outcome has been shown by several studies and the expenditure of time is relatively low (less than two minutes per surgical procedure). Moreover, a recent study has shown that the spending saved by avoiding complications probably exceeds the costs of implementation and performing the WHO checklist in most hospitals.

Education

Improving education of personnel with special emphasis on safety topics and human factors is a further means to reduce the risk of perioperative complications. Education is improved by using the Sign In, Time Out and Sign Out to explain the surgical and anaesthesiological procedure and postoperative recommendations to all team members. In

the contents have to be adopted to include important features that are not part of the original WHO checklist or omit items that are not applicable for the hospital. For example, checking for massive blood loss is not important in ophthalmology and can therefore be omitted in a hospital specialised in eye surgery. Otherwise, it has to be avoided to include too many additional items, since overloading the list renders its application more time consuming and reduces its acceptance.

An adopted checklist may not include the WHO logo but it must contain the reference: 'Based on the WHO Surgical Safety Checklist, URL, <http://www.who.int/patientsafety/safesurgery/en>, © World Health Organization 2008 All rights reserved. The adopted WHO checklist has to be sent to the WHO to authorise its use.

The checklist can be adapted by reducing the questions to key words and omitting the tick boxes to reduce reading time and to focus more on the correct performance than on ticking the boxes. A detailed, but short handout should be written to inform all staff members about the procedure. However, in practice most staff members have to be informed by oral instruction either personally in the operating theatre or by lectures on the WHO checklist of about 45 minutes preferably including videos demonstrating the correct application. It is important to arrange enough time for discussions during the lectures. The WHO checklist should be first implemented in one operating theatre for some weeks to demonstrate its practicability.

Implementation of the WHO checklist should be accompanied by other measures of risk management concepts including other perioperative checklists (e.g. for preparation on the ward or handover in the recovery room), the ABCDE-system for critical incident management and systematic communication, a critical incident reporting system (CIRS) and safety rounds.

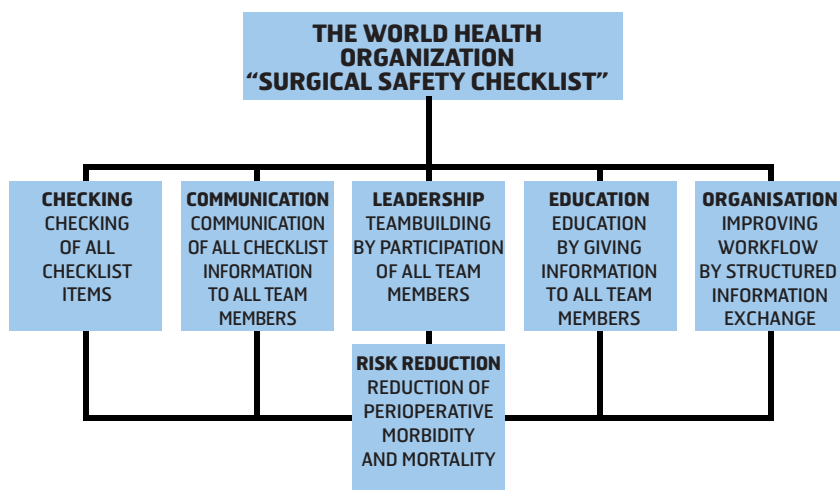


Figure 1: The World Health Organization “Surgical Safety Checklist” reduces perioperative morbidity and mortality by improving checking, communication, leadership, education and organisation.

item “Criticism or suggestions for improvement” can be added to the WHO checklist to provide an opportunity to communicate remarks about problems during the case without interfering at an inappropriate point in time during surgery.

Financial Factors

Risk management is connected with financial management, since from the financial point of view cost effectiveness of risk reducing procedures has to be proven to justify the expenses. However, cost-cutting has been regarded as a threat to risk management. It leads to potentially dangerous production pressure with the requirement to treat more patients in less time with fewer personnel. The WHO checklist has repeatedly been criticised for being too time consuming and therefore costly, albeit its

university hospitals there is nearly always at least one medical or nursing student in the operating theatre who does not have all the information that is needed to understand the surgical and anaesthesiological approach.

Implementation

Implementation of the WHO checklist needs to be organised systematically to guarantee successful adoption. It is not sufficient to release a copy of the original WHO checklist and simply order its use without thorough preparation, information, training and supervision of its application. First, it has to be checked, whether the original WHO checklist is applicable to the hospital without changes of language and content. After translation,

The Checklist Concept Outside the Operating Theatre

The WHO checklist concept of interrupting workflow for effective communication can also be integrated into team procedures outside the operating theatre. Trauma resuscitation room management is an example. A Sign In can be performed before arrival of the patient in the resuscitation room consisting of

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CORE COMPETENCIES FOR INFECTION CONTROL AND HOSPITAL HYGIENE PROFESSIONALS IN THE EUROPEAN UNION

Healthcare-associated infections (HAI) are recognised as a major burden for patients, society and healthcare management. In 2008, ECDC estimated that more than four million people acquire a HAI each year in the EU, of which approximately 37,000 die as the direct consequence of the infection. Effective prevention and control of HAI in healthcare organisations relies on specialised infection control and hospital hygiene staff in charge of elaborating, implementing and monitoring local preventive measures such as hand hygiene and patient isolation.

The The European Centre for Disease Prevention and Control (ECDC) has published a technical report on infection control and hospital hygiene. The intent of ECDC is to propose a comprehensive list of core competencies that should be adopted by infection control and hospital hygiene professionals across Europe.

The use of these core competencies would support:

- Standardisation of the competencies for infection control and hospital hygiene professionals in Europe;
- Design and implementation of training courses according to different national contexts while facilitating the mutual recognition of competencies across EU Member States;

- Self-assessment of performance for infection control and hospital hygiene professionals and planning of their professional development;
- Identification of the needs of healthcare organisations with regard to professional staff; and
- Evaluation of the performance of infection control and hospital hygiene professionals.

The core competencies listed in the document are defined for infection control and hospital hygiene professionals, with the profile of a medical doctor, nurse or caregiver. The term 'core' indicates that the competencies should be a minimum pre-requisite, common to all professionals in this field.

In the list, core competencies are classified in areas and domains (see Table 1 For details) and are separated into two levels: the introductory level and the expert level. The levels are defined as follows:

- "Introductory level (junior specialist): newly appointed infection control and hospital hygiene staff member with little or no previous experience.
- Expert level (senior specialist): infection control and hospital hygiene professionals who are confident and experienced; who use reasoning, critical thinking, reflection and analysis to inform his/her assessment and decision-making; and are able to develop and implement new solutions to problems."

The ECDC believes that the list of core competencies used as a reference could increase the comparability of job descriptions and facilitate the mobility of professionals throughout Europe. The core competencies could be used as a basis for certain human resource tools, such as annual performance reviews or personal development plans, by selecting four to six competencies as goals for infection control and hospital hygiene professionals.

Potential users of the list are public health institutes, universities, hospitals and other healthcare organisations, training programmes, professionals and trainees.

To read the report in full, please visit: www.ecdc.europa.eu

Source: European Centre for Disease Prevention and Control, "Core competencies for infection control and hospital hygiene professionals in the European Union" Stockholm: ECDC; 2013.

Area	Domain
Area 1. Programme Management	Elaborating and advocating an infection control programme; Management of an infection control programme, work plan and projects
Area 2. Quality Improvement	Contributing to risk management; Performing audits of professional practices and evaluating performance; Infection control training of employees; Contributing to research
Area 3. Surveillance and Investigation of Healthcare Associated Infections (HAIs)	Designing a surveillance system; Managing (implementation, follow up, evaluation) a surveillance system; Identifying, investigating and managing outbreaks
Area 4. Infection Control Activities	Elaborating infection control interventions; Implementing infection control healthcare procedures; Contributing to reducing antimicrobial resistance; Advising appropriate laboratory testing and use of laboratory data; Decontamination and sterilisation of medical devices; Controlling environmental sources of infections

Table 1: Areas and domains of competency in infection control and hospital hygiene

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THE ECONOMIC BENEFITS OF ANTIBIOTIC MANAGEMENT IN HOSPITAL: AN ECONOMIC ANALYSIS

By Alastair Gray

Infections in hospital are challenging to manage and are costly for healthcare systems. Following control of acute infection, discharge into the community may be feasible, with or without continuing antibiotic therapy, oral antibiotic therapy, or intravenous infusion therapy. However, although many health systems are committed to moving care out of hospital and closer to home, there remain substantial numbers of patients in hospital who could be discharged, given the right circumstances and management.

A series of service evaluations was therefore conducted to assess how an antibiotic management and Early Discharge (ED) programme might affect NHS resources and patient pathways in such patients. These service evaluations were exploratory studies conducted in a sample of Trusts/Health Boards across the UK, and were designed with the intention of providing information on antibiotics used, the scope for changing antibiotic therapy, including IV antibiotic therapy, and an assessment of whether discharge from hospital was feasible. Full clinical and economic details of this study have previously been published. Using data collected from these evaluations, an economic analysis was conducted, which estimated the potential cost consequences of changing antibiotic therapy, earlier discharge dates, and more community support. These estimates in turn permitted an assessment of how much might potentially be saved if antibiotic management and early discharge to the community had been implemented in this population.

Materials and Methods

30 wards in six hospitals in the UK participated in the study: the Royal Hampshire County Hospital, Winchester, the Northern General Hospital, Sheffield, Glasgow Royal Infirmary, Imperial College NHS Trust, Guys & St Thomas's NHS Foundation Trust, and Leeds NHS Trust. Demographic data on patients

and information on antibiotics being prescribed were collected on a specified evaluation day, using information in patient notes and drug charts. A service evaluation facilitator extracted information, and a qualified healthcare professional independent from the

Specialty	Frequency	Percent
Cardiac Surgery	5	1.7
Endocrine/cardiology	6	2.1
Medical Geriatric	5	1.7
Medicine	134	46.1
Orthopaedics	14	4.8
Respiratory	29	10.0
Surgery	91	31.3
Vascular Surgery	7	2.4
Total	291	100

Home circumstances	Frequency	Percent
Lives alone	79	27.1
Lives in residential care	22	7.6
Lives with family	176	60.5
Prison	1	0.3
Not recorded/missing	13	4.5
Total	291	100

Age at assessment	Frequency	Percent
<40	14	4.8
40-49	23	7.9
50-59	28	9.6
60-69	75	25.8
70-79	62	21.3
80+	85	29.2
Missing	4	1.4
Total	291	100

Table 1: Summary descriptive data on patients in the study

clinical care team assessed whether the patient was suitable for discharge. The service evaluation facilitator also collected information on the actual date of discharge, and reasons for admission. Other information extracted from records included patient age, specialty, domestic circumstances, antibiotic allergies, antibiotic therapies, potential to change antibiotic treatment, and potential to leave hospital with or without community support.

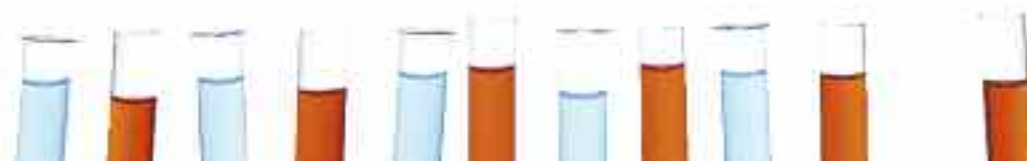
Following costing conventions, appropriate unit costs were then attached to the resources used, in order to calculate a total cost per patient. These came from national published sources and are fully documented in previous publications. Antibiotics used were costed on the basis of net ingredient costs reported in the 2010 British National Formulary, and the costs associated with IV administration of antibiotics in hospital were taken from a Dutch study. The mean resource volumes and costs were then calculated for everyone in the study population, based on what would have happened had the antibiotic therapy been switched, had patients been discharged if appropriate, and if community support services had been provided.

Results

The six hospital sites yielded 429 patients on antibiotics, but one site

» CONTINUES ON PAGE 31

This issue our supplement focuses on lab and diagnostics. As usual, there is one copy for you and one to pass on to the relevant department. Timothy Huerta and colleagues analyse implementation strategies for electronic lab order entry management, recommending taking things one step at a time. In terms of diagnostics, we report on advances in molecular testing and Heather Duncan and Peter van Manen take inspiration from formula one to early warning systems for paediatric patients.



IT'S BETTER ONE STEP AT A TIME

Incremental Implementation Strategies for Electronic Lab Order Entry Management Leads to Better Productivity Outcomes

By Timothy R. Huerta, Mark A. Thompson, Eric W. Ford, William F. Ford

To realise productivity and efficiency gains from computers in healthcare settings, managers have to re-engineer the hospital to match workflows with the capabilities of those systems. This study explored productivity differences among US hospitals who employed differential approaches to electronic laboratory order entry and management (eLAB) systems.

Electronic laboratory order entry and management (eLAB) systems provide important opportunities for technology to play a transformative role in the provision of care. eLABs are benefitted by four characteristics that support this transformation:

1. eLABs have a well-defined ontological system (i.e., HL7) that lends itself to computerization and standardization.
2. The large volume of such tests coupled with their high costs makes these procedures a good target for systemic savings through better information management and waste reduction.
3. eLAB technologies are sufficiently mature and cost effective.
4. eLAB systems have been positioned as the foundation upon which EHRs are implemented, often serving as a leading-edge indicator of technological adoption among non-computerized facilities.

In spite of these benefits, it is interesting that as of 2009, eLAB systems have not been widely implemented throughout US hospitals.

At a broader level, the absence of electronic medical records in hospitals through-

out the US has prompted incentive programmes to support rapid adoption of EMR systems that include eLABS. However, it is unclear how implementing eLAB systems in short time frames impacts hospitals' productivity levels, and the studies to date have found mixed results at best.

Our research, then, sought to clarify the implications of externally accelerated eLAB adoption on organisational productivity. As part of that process, we developed a taxonomy of adoption based on the change in percentage of orders processed using eLAB systems across two points in time - 2007 to 2008. Using the Malmquist Total Factor Productivity (TFP) Index and its underlying factors (viz., Technical Efficiency Change (TE) and Technological Change (TC)), facility relative productivity levels were measured and compared.

Background on eLAB Systems

eLAB systems are a component of a broader class of tools called Computerized Provider Order Entry (CPOE) systems that were first introduced in 1969 and have been evolving

slowly ever since. There are three major classes of CPOE systems. The most frequently discussed is electronic prescribing (ePrescribing or eRx), which has a longer and more prolific presence in US healthcare because of the focus on patient safety, and the significant role medication errors play in compromising care quality. The standardisation of clinical order set entry and use is another class of CPOE, but has been the slowest to take hold due to the difficulty of moving physicians away from their traditional practice and towards standardised regimens of care.

The subject of this research focuses on the use of eLAB systems for ordering of diagnostic tests that are conducted in a controlled manner such as imaging and haematology. eLAB systems provide a framework to capture and communicate laboratory data in order to reduce the likelihood of redundant tests while supporting timely decision-making. These systems are also a necessary component in achieving US policy aims of automating public health registry reporting and providing patients with test results that can be stored in an electronic personal health record.

Taxonomy of eLAB System Adoption Rates

In 2007, the American Hospital Association asked its members to categorise the percentage of physicians in the facility that “routinely order laboratory or other tests

		2008				
		No eLABS Use	0-24%	25-49%	50-74%	75% or more
2008	No eLABS Use	NA	SI	BB	BB	BB
	0-24%	NGO	NC1	IP	MP	MP
	25-49%	NGO	NG1	NC1	IP	MP
	50-74%	NGO	NG1	NG1	NC2	IP
	75% or more	NGO	NG1	NG1	NG1	NC2

Table 1: Percent of laboratory or other tests ordered electronically.

electronically.” The answer set was anchored at ‘0%’, and had options of ‘1-24%’, ‘25-49%’, ‘50-74%’, and ‘75-100%’. In 2008, hospitals were asked the same question. Based on changes in the percentage of lab orders entered from one year to the next, a taxonomy of adoption trajectory was created (Table 1). The taxonomy is constructed around 9 groups in three categories:

Advancement

1. “Simple Introduction” (SI: n=94): reported no eLAB system usage in 2007 and less than 25 percent usage in 2008
2. “Incremental Progress” (IP: n=74): reporting a 25 percent or less increase in usage from one year to the next.
3. “Major Progress” (MP: n=31): reporting a significant increase in eLAB system use with a two- (26 percent or more) or three-step (51 percent or more) increase in eLAB usage
4. “Big Bang” (BB: n=60): reporting a transition from no usage to usage greater than 50 percent in the single year

Stagnation

5. “Never Adopter” (NA: n=895): reported no system in place in either 2007 or 2008
6. “No Change, minimal users” (NC1: n=312): reported less than 50 percent usage in 2007 and ‘No Change’ in adoption level in the usage of the system in the next year.
7. “No Change, meaningful users” (NC2: n=190): reported more than 50 percent usage in 2007 and ‘No Change’ in adoption level in the usage of the system in the next year.

Regression

8. “Negative Growth to Zero” (NG0: n=60): reported abandoning all prior eLAB use
9. “Reduced Use” (NG1: n=37): reported a decrease in eLAB system utilisation, but not a complete abandonment of the technology.

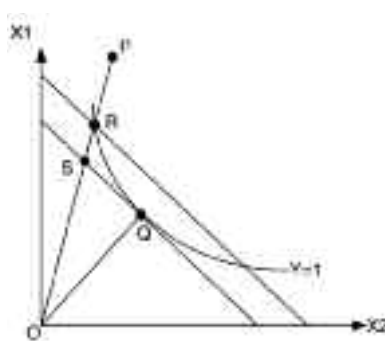


Figure 1: A graphic representation of efficiency

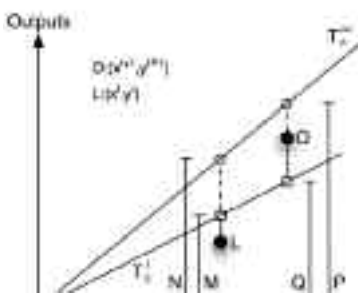


Figure 2: Components of the Malmquist

Measuring Hospital Efficiency, Technological Change and Productivity

To measure hospital efficiency, we employed Data Envelopment Analysis (DEA), which differs from standard regression methods by establishing a frontier associated with best-demonstrated practices and then building a metric based on that benchmark. An overarching measure of relative transformational ef-

iciency is then created by using the average of this index across all decision-making units. Total Factor Productivity Analysis using DEA allows for comparisons of facilities with peers in a longitudinal framework based on the impact of management (TE) and the tools and technology brought to bear (TC). Figure 1, adapted here from the work of McGlynn and colleagues, provides a more in-depth illustration of the linkage between efficiency and the frontier. The figure illustrates the case of a single output (Y) that is produced using two inputs (X1, X2), and that the production function, $Y=f(X1, X2)$ is linearly homogenous. As such, Figure 1 represents the trade-offs made between consumption of X1 and X2 in the production of a single unit of Y. Q represents a decision-making unit that is efficient, that is, it lies on the frontier of efficient outputs given the multitude of input combinations possible. P represents a decision-making unit that requires higher levels of inputs to produce a single unit of Y. The magnitude of the efficiency can be expressed as the ratio between optimal and actual resource use (OR/OP).

The Malmquist Total Factor Productivity (TFP) Index extends this logic across time. In figure 2, we illustrate the productivity of a decision-making unit at time t (L on the figure) and t+1 (O on the figure). On visual inspection, it would seem that the decision-making unit has become more efficient at time t+1, in part because over twice the output is being produced with only a marginal increase in the input. However, it is important to contextualise the advancement of others in that same time. If other organisations are tripling their productivity while the one illustrated only doubles in the same time period, then it is not truly efficient. In this way, the Malmquist focuses on best demonstrated practice as the benchmark for each time period against which performance is measured and returns a numerical index centered on 1, where positive and negative values correspond to whether the decision-making unit advanced or retreated against the shift in the technology benchmark created by other comparative decision making units, respectively.

The Malmquist index can also be broken down into components that offer measures of Technical Efficiency (TE) and Technical Change (TC). Technical Efficiency is an indicator of the ‘management effect’ on organisational performance. It measures when more of each input is used than should be required to produce a given level of output in specific organizational activities. It is typically attributed to insufficient competitive pressures that allow

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management to engage in suboptimal productivity. Under competitive pressure, managers are incentivised to improve their underlying organisational processes in order to keep pace with other firms in the market through innovation. On the other hand, the Technical Change index measures shifts that arise from organisational innovation. It is interpreted as the change of the “best practice” frontier over time typically due to improvements in the “technology” of organisational processes.

Malmquist Model Specification and Dataset Description

Our analysis used three inputs and five outputs from the American Hospital Association’s (AHA) annual survey. Specifically, we selected total licensed beds (BDTOT) as a proxy for the size of the facility. The nursing staff was broken out as their own input by using both total FTE minus the nursing staff (FTE) and the total number of FTE in the licensed nursing staff (FTERN+FTLPN).

We focused on facility usage for our output measures. We included the number of surgical outpatient procedures (SUROPTOT) in order to identify facilities with heavy outpatient surgical loads. Adjusted admissions were multiplied by Case Mix Index (CMI) to calculate a CMI-adjusted admission count for the facility (ADJADM * CMI). Since staffing level data does not distinguish between in- and out-patient staffing, AHA reports adjusted patient days of care to take into account the outpatient care provided by the hospital. CMI was taken from the public data file from CMS for each year and reconciled against Medicare Number (MCRNUM). In order to capture the average daily census, the length of stay (ADJPD – ADJADM) was used to balance the case-adjusted admissions. Our final output measures include the volume of emergency room visits (VEM) and outpatient encounters (VTOT) since they consume hospital resources.

This study pulled data from the American Hospital Association’s (AHA’s) Annual Survey for fiscal years 2005 through 2008 (sample size availability: 2005: n = 6349; 2006: n = 6346; 2007: n = 6312; 2008: n = 6407). The datasets were merged, cleaned, and cross-validated in Microsoft Excel. The authors limited the sample to facilities with complete data over the entire time span resulting in 2,849 hospitals with complete responses for the four years. DEAP was used to calculate the TFP, TE and TC measures.

Results

A one-way Analysis of Variance (ANOVA) was used to evaluate the Malmquist TFP index across different adoption patterns (from responses to the AHA eLAB items). We found that linking TE ($p = 0.071$) and TC ($p = 0.352$) with eLAB system use level was not significant. However, there were statistically significant differences in the TFP indices for hospitals actively expanding the use of eLAB systems during the study period ($p = 0.021$) indicating some positive support related to greater levels of eLAB system use.

Discussion

Over the four-year study period, hospitals were able to increase the output-to-input ratio, but were not able to advance their efforts to improve the underlying care processes (i.e., TC). Due to the trade-off between the TE and TC factors, only minor gains in overall TFP took place over this time period.

Overall, this analysis may indicate that hospital employees are working harder (i.e., increasing efficiency gains), but not necessarily smarter (i.e., effectively deploying new technologies) for minor gains in overall productivity. One alternative is that hospitals may be expanding the number of licensed beds to gain economies of scale that would increase efficiency, but not influence TC. Due to the short time frame of the study, the former explanation is more plausible as a major change to physical structures are unlikely to have occurred in a widespread, systematic fashion.

Specific to implementation strategies, the high performing strategy is to implement the eLAB system on limited basis and then move to widespread use within a year as indicated by the group labeled ‘Major Progress’ (TC = 1.044; TFP = 1.037). The ‘Simple Introduction’ approach did not have much of an impact on changes in efficiency and technology. Given the ‘Simple-Introduction’ tactic is the first step in the ‘Major Progress’ strategy, this evidence provides additional support that a limited introduction followed by a rapid expansion may be a better approach than say the ‘Big Bang’ approach (TFP = 0.983). Finally, the slowly staged roll-out strategy (i.e., Incremental Progress) is also sub-optimal to other approaches (TFP = 0.996). This approach is comparable to the ‘stuck-in-the-middle’ problem firms face when they pursue multiple strategies in marketing products to consumers.

While we should note that hospitals that had

not responded to inquiries on the eLABS status were significantly higher on the TE measure, responders had a systematically higher score on the TC measure. However, there was no difference in TFP between responders and non-responders. If one assumes that non-responders are less likely to have implemented an eLAB system application, then adopting the new technology appears to have an adverse impact on efficiency in the near term. This interpretation is consistent with the assumption that non-respondents are more likely to be non-adopters of eLAB system technology and therefore face no short-term performance losses.

Since implementing an eLAB system requires a rethinking of job processes and employees’ roles and responsibilities (i.e., scope of practice) as well as organisational hierarchy, the move to a fully integrated and functional EHR could impact TC favorably. However, some organisations keep their same processes and structures because the necessary changes are time consuming and could adversely impact hospitals’ efficiency levels in the near-term. The results suggest that when eLAB system implementations occur too quickly (e.g., the Big Bang), efficiency and productivity are adversely impacted. Instead, facilities may want to consider a Major Progress strategy as a means of qualifying for federal rewards and avoiding future penalties vis-à-vis other options..

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ADVANCES IN MOLECULAR TESTING OFFER NEW HOPE FOR LUNG CANCER PATIENTS

Leading Healthcare Organisations Issue Guideline Recommendations for Molecular Testing and Targeted Therapies

The emergence of molecular diagnostic testing in lung cancer offers new hope for patients battling the number one cancer killer in the United States and abroad. Now, for the first time after a decade of biomarker testing in lung cancer, a uniform approach for testing for the EGFR mutation and ALK rearrangement along with the availability of targeted therapies offer lung cancer patients the chance for improved quality of life and more time with their loved ones.

The College of American Pathologists (CAP), the International Association for the Study of Lung Cancer (IASLC), and the Association for Molecular Pathology (AMP) have developed an evidence-based guideline, "Molecular Testing Guideline for the Selection of Lung Cancer Patients for EGFR and ALK Tyrosine Kinase Inhibitors," which establishes recommendations for EGFR and ALK testing, helping to guide targeted therapies. The guideline was released on April 3, 2013, in *Archives of Pathology & Laboratory Medicine (APLM)*, *Journal of Thoracic Oncology*, and *The Journal of Molecular Diagnostics*.

"The key recommendation of the guideline, and perhaps most important to lung cancer patients, is that all patients with advanced lung adenocarcinoma should be tested for EGFR and ALK abnormalities, that would qualify them for tyrosine kinase inhibitor therapy, regardless of their clinical variables, such as smoking history, gender, or ethnicity," said Marc Ladanyi, MD, attending pathologist in the Molecular Diagnostics Service at Memorial Sloan-Kettering Cancer Center in New York, and IASLC member.

Similar to the testing done in breast cancer, matching a cancer patient's molecular profile with the appropriate tar-

geted therapy provides individualised treatment options. The guideline answers important clinical questions, including:

- When should testing be performed?
- How should testing be performed?
- Should other genes be routinely tested in lung cancer?
- How should molecular testing of lung cancer be implemented?

"In the U.S. up to 20 percent of patients with lung adenocarcinoma, the most common type of lung cancer, will test positive for one of the two biomarkers," said Philip T. Cagle, MD, FCAP, medical director of Pulmonary Pathology in the Department of Pathology and Genomic Medicine at The Methodist Hospital in Houston, Texas, APLM editor, and CAP member. "It is critical to identify these patients because they stand to benefit more from new targeted drugs than from conventional chemotherapy, and with fewer side effects."

For lung cancer survivor Richard Heimler, molecular diagnostic testing has meant five additional years with his family, including his daughter and son. After his initial diagnosis in 2004, Heimler had surgery to remove cancer tumours in his lungs and brain. When multiple tumours returned in 2008, Heimler participated in a clinical trial to determine if he was a candidate for targeted therapies.

"After testing positive for the abnormal ALK gene, I began taking a targeted drug in the form of a pill," said Heimler. "It was wonderful to not experience the debilitating side effects that I had with chemotherapy. This new world of science has given me hope that I will have more time to create memories with my children and watch them grow up."

In an era of precision medicine, the guideline provides recommendations for pathologists, oncologists, and other cancer health professionals on the current state-of-the-art recommendations for

the molecular testing of lung cancer.

"The three organisations came together to address the variance in practice around the world about how this testing should be performed," said Neal I. Lindeman, MD, director of Molecular Diagnostics at Brigham and Women's Hospital and associate professor of Pathology at Harvard Medical School in Boston, and AMP member. "Pathologists who specialise in molecular diagnostics and lung cancer collaborated to create the guideline to minimise variation and provide greater precision in the care of patients."

The CAP Pathology & Laboratory Quality Centre, (the Centre,) a forum for developing evidence-based guidelines and consensus recommendations, provided the process for creating the guideline. Expert panels made up of renowned worldwide leaders in the field collaborated to develop the recommendations.

"The guideline is an important step in making sure that patients benefit from the new molecular understanding of lung cancer," said Dr. Ladanyi. "As new studies lead to further evidence-based recommendations, we hope to develop additional guidelines for other biomarkers related to this disease."

In conjunction with the publishing of the guideline, CAP, IASLC, and AMP have developed clinical tools and resources for pathologists and oncologists that summarise the findings and recommendations. In addition, the organisations have developed a patient guide for further understanding, including questions for patients to ask their physicians. A series of videos featuring three of the guideline authors and a lung cancer survivor can be found on the CAP, IASLC, and AMP YouTube Channels.

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- ongoing training and staff support.

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For haematology customers, a critical step in the sample review process is being able to identify abnormal cells as quickly as possible. To ensure accuracy and the earliest possible diagnosis, the priority for an automated solution is to deliver high levels of sensitivity and specificity when flagging abnormal or atypical cells. To meet this need, Beckman Coulter has launched the new UniCel DxH 600 Coulter Cellular Analysis System. Also featured at this year's EuroMedLab, the DxH 600 is a compact, benchtop for mid- to high-volume laboratories that features advanced software and innovations in haematology testing which helps to improve quality of results, maximise efficiency and delivers unmatched scalability. By reducing manual review rates and processes, the DxH 600 frees laboratory staff to focus on quickly and accurately reporting patient results. Innovative small footprint stand-alone solutions such as the DxH 600 can help your laboratory increase overall productivity, without compromising quality or traceability.

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RACING TO IMPROVE EARLY WARNING

By Heather Duncan and Peter van Manen

The unique challenges in developing early warning for children have led to a patient-specific early warning approach. The methodology, which is based on the altered patterns of physiological derangement, associated with compensation and decompensation in clinical deterioration rather than population normal distributions, is suitable for patients of all ages. A software platform that is used for Formula One telemetry, which is able to analyse continuous data in real-time and produce predictive models for the future, has been adapted for use in critically ill patients. This enables real-time principal component analysis (PCA) and predictive modelling, which are promising solutions for developmental physiological changes and patient specific variations, whilst avoiding false alarms

Introduction

Formula One motor racing is all about winning. Healthcare is all about reducing distress and saving lives. Both are most successful when underpinned by detailed knowledge of the context and behaviour involved as well as the drive for safety and quality. In addition, they both require prediction of likely outcomes, pre-planning to mitigate anticipated complications and rapid, real-time decision-making to achieve the best results.

There are, of course, many differences between managing a racing car and managing a sick patient. The most obvious is that while racing cars are relatively predictable, patients have homeostasis with known, but often unpredictable, closed loop feedback systems that aim to compensate for physiological derangement until a point where decompensation is inevitable. The physiological patterns of deterioration prior to respiratory or cardiac arrest are well described in adults and children and underpin the global development of early warning systems (Devita et al. 2006; National Institute for Health and Clinical Excellence 2011; NHS 2011). These systems involve an aggregation of physiological derangement to identify the trend of deterioration and have been shown to reduce avoidable death and life-threatening events. The UK National Early Warning Score (NEWS) is an aggregate scoring system to identify adult patients during the compensation phase before they decompensate to cardiac arrest (Royal College of Physicians 2012). Identification of deterioration triggers a response to generate increased monitoring, management of

the cause of decline and a call for more expert help.

Children provide unique challenges in early warning that have led to developing patient specific monitoring. The wide range of "normal" physiology which develops as children grow, and the complex "at risk" patients that have their own specific range of normality, for example pulse oximetry of 75% in cyanotic heart disease, has provided the drive to develop early warning that learns the normal and abnormal physiological patterns for that patient. Once successfully developed, this age-agnostic approach will almost certainly be equally applicable to adult and geriatric patients. We describe an approach where the patterns generated by individual susceptibility, acute physiological response, compensation and decompensation thresholds create early warning.

Early Warning Systems in Adults and Children

Early warning scores are substantially better than relying on chance identification of deterioration, achieving a 25% reduction in life-threatening illness and death (Priestley et al. 2004; Tibballs et al. 2009). However, there are two good reasons why we need to explore beyond the current aggregate systems.

Firstly, current early warning systems rely on categorising a patient as normal or increasingly abnormal in comparison to a population normal distribution. Patients have individual normal physiology and resilience and responses to illness are based on their background health or illness, medication and age (Bion 2000; Smith et al.

2008). We need to know what is normal for that specific patient. A well 10-year-old, an immunocompromised 20-year-old with leukaemia and an elderly 80-year-old patient with heart failure will each respond completely differently to abdominal sepsis. Current early warning systems are not tailored to this background-dependent resilience or susceptibility but focus only on the acute, generic physiological changes. In addition, some patients deteriorate and decompensate within the normal range for their age and for them. This is because the effects of deterioration aren't limited to changes in high and low thresholds, but are related to the pattern of variation within physiological parameters. The patient shows a clear change in pattern of variability prior to cardiac arrest, but would not have triggered high or low alarm threshold until the acute life-threatening event. Some of this altered pattern is measured in heart rate variability: a marker that has benefit in identifying sepsis in adults, neonates and foetal distress (Ahmad et al. 2009; Moorman et al. 2011; Van Laar et al. 2008).

Secondly, current early warning systems rely on relatively infrequent (every one to 12 hours) and varied vital sign measurements, from a choice of up to 36 parameters. Furthermore, the warning can in some cases be associated with missing measurements (Royal College of Physicians 2012; Duncan 2007; Royal College of Nursing 2011). There is no information on the optimal frequency of observations for a specific patient or population and this decision is often left to relatively inexperienced, busy bedside nurses and healthcare assistants. The assumption is that the

bedside staff will recognise a deteriorating change in trends and alter the observation frequency, but this opportunity is often missed. There is also variation in which vital signs should be measured.

In 2008, a paediatric early warning system (PEWS) was introduced in all wards at Birmingham Children's Hospital (Duncan et al. 2006; Parshuram et al. 2011). This is a paper-based aggregate score embedded as colour-coded, age-dependent thresholds on the four standardised observation charts. It is associated with simulation-based training on taking routine observations and appropriate decision-making relating to deterioration. The type and frequency of observations are guided by a comprehensive evidence- and expert-based observation, monitoring and escalation policy. All life-threatening events are tracked, in keeping with international recommendations (Devita et al. 2006), and they are classified into timely and untimely for intensive care referral and admission, and whether or not they are predictable and/or potentially preventable for acute life threatening events. It is this detailed forensic review of all episodes of critical deterioration that has provided the insight into how best to approach early warning.

Since the introduction of early warning systems, in-hospital cardiac arrests have reduced and more patients are receiving optimal pre-intensive care. These are direct indicators of more timely treatment of acute illness. But it could be better: measurements and observations could be more frequent, processing the data could be automated, data entry mistakes could be avoided and warnings or alarms could be tailored more specifically to individual patients.

Birmingham Children's Hospital cares for children from birth to 16 years old, with weights ranging from 450g to 120kg. Our patients are frequently complex with cyanotic heart disease, chronic lung disease, neuro developmental disorders, multi-organ involvement and they epitomise individuality. Four age-appropriate observation charts are needed to accommodate ab/normal physiological parameters for the age-groups: birth to one year, one to five years, five to 12 years and older than 12 years. Infants, in particular, and older children can deteriorate very quickly; in between infrequent observations. These

situations can erroneously be interpreted as unpredictable; however, parents are often adamant that a change had occurred in the child's condition prior to an acute lifethreatening event that routine or even enhanced monitoring did not detect. These challenges have led to our exploration of Real-time continuous, Adaptive patientspecific, Predictive Indicators of Deterioration (RAPID).

How Does Formula One Help Solve These Problems?

Based on the problems identified so far, we determined that what is required is a system with the following requirements:

- Real-time analysis - to identify changes in patterns of physiological compensation and decompensation, and predict or form a model for the future;
- Adaptive - to have real-time analytical ability to learn normal for that specific patient;
- Continuous - until an optimal observation frequency can be determined; and
- Scalable and not reliant on expensive individual monitors - to measure as many at risk patients as possible.

A solution is not yet available for medical monitoring, but is routinely used in motor racing telemetry. You need a fast car, great driver and good strategy to win races in the complex and highly competitive world of Formula One. It is human endeavour at its most extreme, characterised by relentless development with new innovations appearing throughout the year in everchanging forms. Each must be anticipated, its influence evaluated, and then put into action quickly.

The cars are changing continually to make them faster, stronger and safer, and they go into intense competition every two weeks between March and November. Hence, it is unsurprising that the world of Formula One is underpinned by data. Quickly making sense of what you see and hear is often the difference between winning and losing. In this respect, healthcare is little different. Recognising problems quickly is the first step towards effective treatment, but each patient is different and early signs can be subtle and complex.

Nonetheless, they are usually there to be found in the data. Recognising deterioration early provides a real opportunity for reducing distress and saving lives.

McLaren Electronics Systems provides telemetry for all Formula One teams so they can measure, visualise and respond to changes during development of the cars as well as during the time-critical race situation. The Formula One realtime data system comprises SQL-Race, an application processing interface (API) that manages a large population of individual sources of time-series and associated data; vTAG server, a data logging and processing platform upon which real-time models run; and ATLAS, the data analysis and viewing software used by teams and engine makers throughout Formula One.

Each car is fitted with over a hundred sensors. Live health and performance data is sent back via telemetry to the garage and over the Internet to the team's factory, often on the other side of the world. Over 750 million numbers from each car are processed in real-time during a two-hour race. Over the race weekend the data is used to make the cars better and faster. The data tells the engineers how much life remains in the engine, how quickly the tyres are degrading and how much fuel is being used (as well as how much is left in the tank). The data tells them whether setup changes are effective or not, and the system has the ability to run thousands of models simultaneously to predict the consequences of different treatment strategies.

In healthcare, it is not feasible to have the equivalent of a Formula One team's engineers focusing on just two patients, but it is possible to use the data platform to analyse patient-specific data in real-time, and to predict the future. If such analysis of changing physiology and variation could be visible to bedside or remote clinicians, then a much higher incidence of subtle signs of compensation and decompensation could trigger more sophisticated alerts, and we could see the predicted consequences of treatment and observation strategies.

Saving Young Lives

In 2011, Birmingham Children's Hospital and McLaren Electronic Systems installed a real-time data system to gather and



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LUXEMBOURG 2013 

HOSPITAL MANAGEMENT IN TIMES OF CRISIS CONSTRAINTS, CHALLENGES AND OPPORTUNITIES

28 - 30 NOVEMBER 2013
LUXEMBOURG



OVERVIEW

Luxembourg2013 is the forum in which more than 600 CEOs, Hospital managers from all over Europe will share their experiences and best practices in healthcare management. Take advantage of this opportunity to position yourself among the key decision makers from European hospitals.

This year, the congress will focus on how to deal with economic constraints and transform them into opportunities. Many people strongly believe that funding is the crucial factor to the effectiveness. When the economy is weakened and the hospital budget reduced, what can a hospital manager undertake to continue to deliver better care? This is what the congress will try to address.

CONFERENCE

Sessions will focus on practical means to preserve or enhance quality of care even in the face of static budgets.

Roundtables will give the opportunity to share best practice and discuss their added-value.

Posters sessions will be dedicated to **Improvement of patient outcomes with static budget**. The best posters will be rewarded and published on the congress website.

HOSPITAL VISITS

Healthcare developments in Luxembourg will also be addressed. You will have the opportunity to visit hospital and discuss with professional the innovations set.

EXHIBITORS

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

UNIQUE NETWORKING OPPORTUNITY IN THE HEALTH SECTOR

The congress will offer networking opportunities with key decision makers from the major hospitals in Europe, the healthcare industry representatives in an informal, effective business setting.

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SITE UNDER CONSTRUCTION

PRELIMINARY PROGRAMME

WEDNESDAY, 27 NOVEMBER 2013

PRE-CONGRESS PROGRAMME

- Hospitals visits
- Presidential dinner for sponsors

THURSDAY, 28 NOVEMBER 2013

OPENING CEREMONY

The official speakers and the keynote speaker
"Patient Value in Hospital Management"
(10.00 - 12.30)

GOLDEN HELIX AWARD

(13.30 - 14.00)

STRATEGIC GUIDELINES IN CRISIS

(MERGERS, JOINT VENTURES, OUTSOURCING,
HUMAN RESOURCE MANAGEMENT, FINANCIAL
RESOURCES)

- Two 30-minute lectures (14.00 - 15.00)
- Poster Session - presentation (15.00 - 15.30)
- Break (15.30 - 16.00)
- Two 30-minute lectures (16.00 - 17.00)
- 45-minute roundtable (17.00 - 17.45)

RECEPTION HOSTED BY THE CITY OF LUXEMBOURG

(Evening)

FRIDAY, 29 NOVEMBER 2013

BUSINESS PROCESS RE-ENGINEERING

(LEAN MANAGEMENT, PURCHASING, USE OF IT)

- Two 30-minute lectures (09.00 - 10.00)
- Break (10.00 - 10.30)
- Two 30-minute lectures (10.30 - 11.30)
- 45-minute roundtable (11.30 - 12.15)

NEW BUILDINGS, NEW LOGISTICS, NEW TECHNOLOGIES

- Two 30-minute lectures (14.00 - 15.00)
- Poster Session: awards ceremony (15.00 - 15.15)
- Break (15.15 - 15.45)
- Two 30-minute lectures (15.45 - 16.45)
- 45-minute roundtable (16.45 - 17.30)

GALA DINNER AT CASINO 2000, Mondorf-les-Bains (L)

(Evening)



INFORMATION

VENUE

The Congress will be held in Luxembourg business centre, at the prestigious Conference Centre (Luxembourg/Kirchberg). The building is located 5 min from downtown Luxembourg and is well connected by public transport.

OFFICIAL LANGUAGES

The official congress languages will be English/German/French. All presentations will be in one of these three languages.

SIMULTANEOUS INTERPRETING

All presentations will be simultaneously interpreted into English/German/French.

REGISTRATION

Online registration for attendees and accompanying persons will begin on 1 March 2013 via the congress website:

www.eahm-luxembourg2013.lu

ACCOMMODATION

Participants can book their hotel rooms online from 1 March 2013, plan your trip with a few clics:

www.eahm-luxembourg2013.lu



process live physiological data from all beds in paediatric intensive care and from the trolley in one of the specialist child transport ambulances. Through the “Young Lives” project, supported by the Health Foundation SHINE programme and applied mathematics academics from Aston University, we developed a system that would stream data from all of the bedside monitors and quickly tease out patterns in the data, with a purpose of alerting doctors and nurses to changing conditions.

The reason for starting in paediatric intensive care was twofold: it is where the sickest children are treated with 1:1 nursing and it is where the physiological data was already routinely collected (but previously overwritten after 96 hours). In the first twelve months of running the system, we collected physiological data from more than 1000 different patients. By streaming the data into the Formula One data system, we have been able to provide a richer display and manipulation of data and store it longer for the purposes of clinical review and research.

The bedside instruments provide data from a range of sensors, but initial focus was placed on pulse oximetry (SpO₂) because it is readily measured and is rich in information about respiration and cardiac activity. The real-time data platform can gather and process data from a large population of individual patients. The data processing can be applied to any of the physiological sensors and uses principal component analysis (PCA) to extract the characteristic patterns from the data as it changes with time. This technique is used for analysis and prediction in financial, environmental, military and aeroplane engineering applications. A patient who is stable exhibits patterns that change little over time. Plotting two principal components against each other creates a model “distance”. Deterioration is reflected in an increase in the model “distance”, a parameter which characterises how well the principal components correlate with the evolving data.

The PCA approach not only teases out characteristic patterns, but also provides the means to predict how the data should look in the future. It does this by extrapolating and then reconstructing the physiological data for a later time. Currently, we predict about two minutes ahead. The importance of the prediction is that it en-

ables quite tight margins to be applied in testing for divergence from normality. This can lead to much earlier reliable detection of change for individual patients.

We are testing the PCA model distance alongside an automated version of a modified paediatric early warning score (mPEWS). Early indications show that changing conditions are apparent in the PCA distance and scatter plots well before the mPEWS or raw data are seen to change. Further clinical interpretation is needed before changes may be characterised in terms of deterioration.

What Does the Future Hold?

Formula One has been using telemetry data to develop and race cars for over 25 years. The engineers and drivers believe and act upon the information they see, using it to understand and continually improve their cars and race-craft. Analytical techniques and fidelity checking between parameters has managed false alarms out of the system. Much of the work done in setting up the race car and developing a winning strategy takes place away from the track using live data sent across the world via standard fibre and wireless networks. It is no longer always necessary for the engineer and car to be in the same location in order to make a difference. However, exploiting this approach in healthcare involves more than simply transferring technology. The healthcare environment is less structured, people can be more complicated and less predictable, clinical interventions can be frequent and varied and the culture in secondary (and primary) health is not always one that is immediately receptive to change. The next stages of development at Birmingham Children’s Hospital will be to:

- (1) Establish more rigorous clinical interpretation of the changing patterns;
- (2) Ensure that false detection of deterioration cannot happen;
- (3) Move the system beyond the walls of intensive care and into the high dependency and general wards through-out the hospital; and
- (4) Create new patient pathways and resourcing models that make use of the better clinical cues.

A lot has been achieved, but there is much more to do (Nangalia et al. 2010; Bion

2008). Embedding knowledge into the system of what constitutes normality, how characteristic changes in patterns relate to treatment and outcomes, and how alarm thresholds could and should be set, will all come with detailed clinical scrutiny of the data. Properly engineered, our approach will present physiological data clearly, immediately and in context, so that every patient, regardless of age, might be seen by the right people, in the right place and at the right time. Ideally, the changing conditions of the population of individual patients would help inform the most appropriate allocation of nurses throughout the hospital and direct doctors and other clinicians to the sickest patients. There is no reason, however, why an approach like RAPID should be confined to the hospital. Once developed, the applications that detect deterioration could operate remotely or be embedded in local devices, such as smart phones or tablets. Patients with acute and chronic conditions could be monitored at home with the reassurance that expert help could be informed quickly should a condition suddenly worsen.

Acknowledgements

The real-time Principal Component Analysis application that is used to extract and display changing patterns was developed by Dr. Rajeswari Matam of Birmingham Children’s Hospital. She also liaised directly with the software and support engineers from McLaren Electronic Systems throughout the development and commissioning of the system. The development of the analysis approach, and ensuring that it was both practical and relevant to this new application, was supported strongly by Prof. David Lowe of Aston University.

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(Sheffield) could not provide information on discharge dates of patients. As a result, the economic analysis was conducted using 291 patients on an-

The costs and savings from these proposed therapy changes are reported in Table 2. The reduction of 494 in-patient days arising from earlier discharge would have saved £186, 731. Savings from switching from oral to no antibi-

largest impact on potential bed-day savings were excluded from the analysis: this resulted in savings falling to £363 per patient, but this remained highly significant (95% c.i. £261, £465). Similarly, increasing or decreasing by 25% the assumed cost of providing an OPAT service (£151.8 per person per day) had little effect on the overall results, changing the net saving per person to £667 or £657.

If the number of patients deemed suitable for early discharge was only 50% of the baseline assumption described above, the net saving per patient would fall to £260. Finally, if 10% of the patients deemed suitable for early discharge had to be readmitted, net savings per patient in the study would fall from £662 to £529.

Discussion

In this study the objective was to quantify the potential benefits in economic terms of an antibiotic review and early discharge assessment. Using data collected in a wide range of different hospitals and specialties and for a range of patients, the study found that 28% of patients assessed could be suitable for early discharge, and that another 23% of patients could have had their current antibiotic treatment either stopped or reduced. Conducting such an assessment, and providing some additional out of hospital support services, would of course involve some added costs, but these would be just a small fraction of the potential savings. Reductions in lengths of stay arising from earlier discharge were the main source of potential savings.

In practice, in-patient days saved might not result in cash savings, but from an economic perspective they can be viewed as opportunity costs: earlier discharge of some patients may allow waiting times for other patients to be reduced, for example.

While the potential savings from such a scheme would mainly benefit hospitals, the additional costs involved would fall mainly on community service budgets. Service commissioners would need to recognise these issues to ensure fair outcomes and correctly aligned incentives. Similarly, early discharge schemes

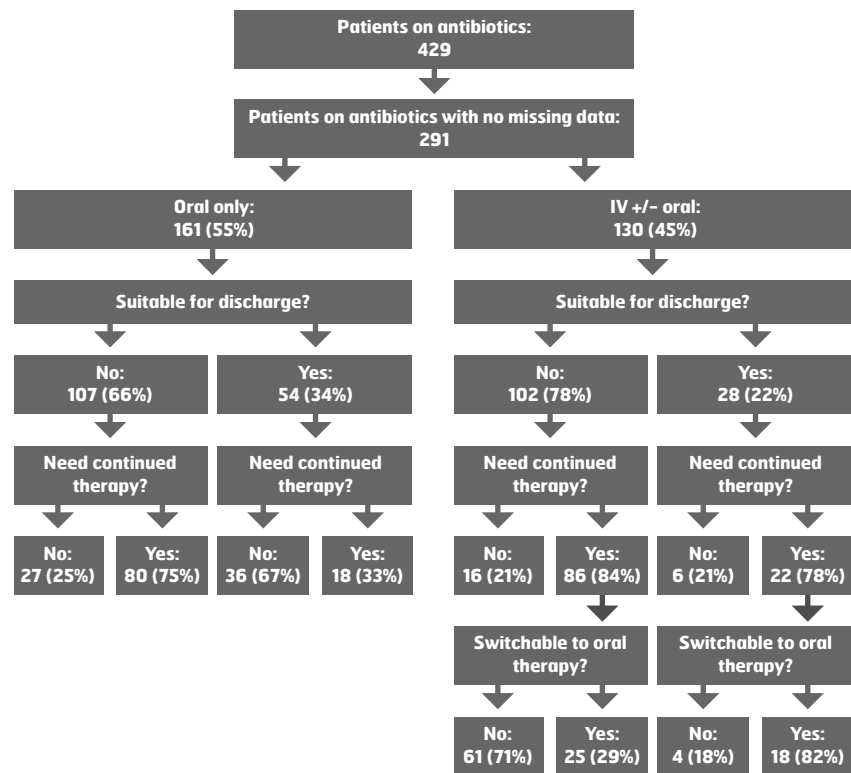


Figure 1: Flow diagram of patients through service evaluation

tibiotics in five hospitals. Summary data are given in Table 1. The main specialties were general medicine (n=134, 46%) or general surgery (n=91, 31%). Patients were mainly living with their family (61%) or alone (27%). Average age when assessed was 69 years, and 29% of the sample were aged 80 or older.

A summary of the results of the assessment is given in Figure 1. 82 patients (28%) were assessed as suitable for discharge, of whom 54 (66%) were on oral antibiotics and 28 (34%) on IV antibiotics; in 4 instances earlier discharge would only have been feasible if Outpatient Parenteral Antibiotic Therapy (OPAT) services were available. In total, 150 (51%) of the 291 patients assessed were considered suitable for stopping or switching their current antibiotic therapy.

otic would have been small, but, £10, 536 would have been saved by switching from IV to no antibiotic, and £9, 233 from switching from IV to oral therapy. There would also have been some additional costs: the clinical assessment would have cost £2, 468, community support would have cost £6, 227, and OPAT services would have cost £5, 616. In total, the net effect of these changes would have been a potential saving of £192, 635, equivalent to £662 (95% c.i. £393, £930) per patient in the study.

Sensitivity Analyses

Some patients had long lengths of stay which may have had a large influence on the total number of bed-days and potential days saved. To assess their effect, the eight patients having the

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could reduce costs falling on the formal health services, but increase the burden on family and friends. This study was unable to collect information on such issues, which would be a valuable focus for further research.

If such interventions were being fully evaluated, they would also have to take

Finally, the pressure to innovate would be enhanced by evidence from randomised trials or case-control studies: the results reported here are illustrative and need to be confirmed in a rigorous experimental study design, but they do suggest that such a study might well be worthwhile.

Item	Total cost change	Cost/saving per patient Mean (95% confidence intervals)	
Saved length of stay costs	-£186,731	-£642	(-£365, -£918)
Switch from oral to no antibiotic	-£446	-£1.53	(£0.3, -£3.4)
Switch from IV to no antibiotic	-£10,536	-£36	(-£9.3, -£63)
Switch from IV to oral antibiotic	-£9,233	-£32	(-£17, -£46)
Additional community support	+£6,227	+£21	(+£8, +£35)
OPAT costs	+£5,616	+£19	(-£4, +£42)
Assessment costs	+£2,468	+£8	(-)
Total	-£192,635	-£662	(-£393, -£930)

Table 2: Change in costs per patient from adoption of recommendations (n=291)

into account their impact on health outcomes such as quality of life. Recent years have seen other initiatives to improve antibiotic stewardship, such as self-assessment toolkits. But many audits and official reports still proclaim the need for improved antibiotic management. Focusing on the potential cost savings reported in here as arising from formal antibiotic review might increase the incentive to introduce such policies.

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Further Reading

Cooke J, Alexander K, Charani E, Hand K, Hills T, Howard P, et al. Antimicrobial stewardship: an evidence-based, antimicrobial self-assessment toolkit (ASAT) for acute hospitals. *J Antimicrob Chemother.* 2010 Dec;65(12):2669-73.

Dryden M, Saeed K, Townsend R, Bourne S, Parker N, Coia J, et al. Antibiotic stewardship and early discharge: impact of a structured approach to antimicrobial management. Submitted to *Journal of Antimicrobial Chemotherapy*. 2012.

Gray A, Dryden M, Charos A. Antibiotic management and early discharge from hospital: an economic analysis. *Journal of Antimicrobial Chemotherapy.* 2012;67(9):2297-302.

Plowman R, Graves N, Griffin MA, Roberts JA, Swan AV, Cookson B, et al. The rate and cost of hospital-acquired infections occurring in patients admitted to selected specialties of a district general hospital in England and the national burden imposed. *J Hosp Infect.* 2001 Mar;47(3):198-209.

van Zanten AR, Engelfriet PM, van Dillen K, van Veen M, Nuijten MJ, Polderman KH. Importance of nondrug costs of intravenous antibiotic therapy. *Crit Care.* 2003 Dec;7(6):R184-90.

BOOK REVIEW



Management of Antimicrobials in Infectious Diseases: Impact of Antibiotic Resistance

Arch G. Mainous III, Claire Pomeroy
Springer 2010 (e-book)

Optimal antimicrobial use is essential in this era of escalating antibiotic resistance. Clinicians, particularly those on the frontlines of care, need an understanding of the management of common infectious diseases and the appropriate use of antimicrobials in the context of resistant pathogens.

In *Management of Antimicrobials in Infectious Diseases*, Arch Mainous, PhD and Claire Pomeroy, MD and a group of antimicrobial experts and experienced clinicians provide an eminently practical summary of the most effective evidence-based antimicrobial treatments encountered in both the hospital and outpatient settings. At the forefront of this book is the clinical im-

port of appropriate diagnosis and treatment, as well as an emphasis on the newer aspects of infectious disease management necessitated by the increasing problem of resistant pathogens. Further, the book provides useful information on major pathogens to help practicing clinicians not only diagnose but treat effectively infections and their concomitant complications.

Multidisciplinary and highly practical, *Management of Antimicrobials in Infectious Diseases* offers busy clinicians, nurse practitioners, as well as residents and medical students a comprehensive and informed guide for management and treatment in the contemporary environment fraught with resistant pathogens.

EVIDENCE-BASED NURSING

10 Ways to Practise Evidence-Based Staffing and Scheduling

By Susan Reese

As we move from a standards approach to patient care to one based on quality and outcomes, so the need to identify and reassess processes and practices in patient care, is critical. Healthcare organisations need to look at re-evaluating and redesigning staffing and scheduling of the workforce, with a focus on what the evidence now tells us provides the safest practices to support positive outcomes for both our patients and nursing staff.

Acute Care Staffing and Rostering Practices

The working environment in acute care is a fast-moving, dynamic and physically, mentally, and psychologically demanding place. Making sure that the appropriate levels of nursing care are available requires organisation of work schedules with many variables: shift start times, shift lengths, rostered hours per week or pay period, spacing of shifts, duration of shift breaks, expected and unexpected absenteeism, skill mix, and experience levels of staff members. Plus there may be other local working arrangements to add to the list.

It is important to recognise that how we staff and roster nurses can create an environment that is potentially harmful to both the nurse and the patient. For example, long shifts or shifts that are closely spaced shorten the working week, but present risks of fatigue for nurses. In addition, sometimes relentless calls to fill 'gaps' created by unexpected events – absenteeism or increased workload – can contribute to an unhealthy environment for the nurse.

Further complicating the staffing and scheduling process is the need to optimise the skills mix. The nursing workforce consists of more than nurses. Depending on the specific unit and nursing practice model being used additional staff may include student nurses, nursing assistants, technicians, coordinators, porters and other ancillary staff.

The Evidence is in

What do increased levels of fatigue mean in the delivery of nursing care? Fatigue in the workforce has been linked to 'performance decrements'. Performance decrements may include diminished capacity to manage a specific level of workload, which certainly has an adverse impact on the organisation and overall productivity. More significant is that performance decrements lead to errors in the de-

livery of nursing care. It is here that the impact of performance has its most damaging potential, affecting the safety and positive outcomes for both nurses and patients.

The length of shifts, working overtime hours, and overall hours worked per week have been shown to have a significant relationship to errors. Working more than 40 hours per week 'significantly increased the risk of making an error' (Rogers et al., 2004).

portion of qualified to un-qualified nurses was significantly associated with fewer patient falls and medication administration errors in medical-surgical and critical care departments. Changes to skill mix led to a finding that 'each 10% decrease in qualified nurse skill mix was associated with a 36% increase in the likelihood of patient falls with injury in critical care departments and with a 30% increase on medical-surgical units.' (Patrician et al., 2011).

Experience makes a difference in providing a safe and positive outcome-driven approach to staffing and scheduling

The types of errors associated with fatigue due to heavy work schedules aren't just an incorrect diet sheet, failure to ambulate or slight delays in care. Two studies in the US reported epidemics of *Staphylococcus aureus* that pointed to nurse fatigue as the reason for making frequent mistakes and procedural errors (Russet et al., 2003; Arnow et al., 1982).

Working excessive overtime creates risks, therefore the reason that overtime hours are required becomes important. The fatigue associated with long shifts was found to be responsible for an absenteeism rate approaching 12% in a random sample of Canadian nurses (Zboril-Benson, 2002). This cycle is self-perpetuating. Long shifts cause fatigue, which causes absenteeism, which results in the need to fill expected absence with overtime hours, which increases shift length.

The composition of the nursing team based on skill mix and level of experience also has an impact on safety and positive outcomes. One study reported that having a 'greater pro-

Confirmation that the skills mix does matter.

Lastly, the experience level of the nursing team needs to be considered. Experience makes a difference in providing a safe and positive outcome-driven approach to staffing and scheduling. Two studies showed that units with more experienced nurses had lower medication error rates in both studies and lower patient fall rates in one study (Blegen et al., 2001).

10 Ways to Put it Into Practice

- Decrease the use of long shifts. The evidence is clear that long shifts present a significant risk to patients and staff. Wherever possible, engage staff in discussions about alternatives in scheduling that support a safe and positive outcome-driven environment.
- Investigate ways to ensure nurses leave on time at the end of a shift. First assess what the causes of staying late are and then formulate an action plan to

address those issues.

- Decrease the use of overtime or bank hours. Whenever possible, hours that increase the overall work week, such as overtime or bank hours, should be avoided. This can be accomplished by more accurately scheduling hours based on predictive workload volumes, decreasing the need to adjust staff hours at short notice.
- Spread the wealth by distributing overtime. When overtime is the only answer, make sure no one person is getting it all.
- Know the staff members you're scheduling. Make sure nurses who are at increased risk of harm, such as those with chronic medical conditions, older workers, pregnant nurses, and those with long commutes, aren't scheduled in a way that will tax their abilities.
- Define a skill mix for each shift and stick to it. There is no one right mix of skills that we all should follow. Realistically analyse your environment and resources to define what is possible and acceptable for your situation.
- Vary the experience levels scheduled on each shift. The benefit here is increasing the likelihood that fewer errors will occur. The value-add is the mentoring that will benefit the less experienced members of the team.
- Ensure adequate rest periods between shifts when approving schedule changes. There is more to think about than just covering the shift when approving schedule changes. Consider the impact on the individual's overall schedule and potential for fatigue.

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information exchange about the expected patient and introduction of all team members with name and role. A Time Out 15 minutes after arrival of the patient is an opportunity to exchange gathered information between all team members and determine the next diagnostic and therapeutic procedures. Time Out is repeated after computed tomography, magnetic resonance tomography and/or X-ray imaging for the communication of diagnostic findings. A Sign Out is performed at handover of the patient to the operating theatre or the intensive care unit. At this point each team member delivers a oral and written summary of his or her findings and further recommendations. The concept of systematic

- Develop practice guidelines. Based on the research, practice guidelines appear to support safety in practice when used by fatigued nurses.
- Monitor key performance indicator trends in staffing and scheduling. Routine assessment of workforce metrics should include trends in overtime at department, ward and individual level, frequency of absenteeism, adequacy of rest periods within and between shifts, and deviations between scheduled and actual worked hours.

What's at Stake?

One of our greatest challenges in nursing today, in the US as well as the UK, is to steadily move away from time-honoured and anecdote-based practices to a practice of nursing-care delivery that is evidence-based. There is always more to learn, but there is also a lot of fairly new research and studies that have yet to be acted upon. As new thinking is put into practice, it remains essential that the impact on both the patient and the nurse be continually evaluated and opportunities to identify potential new improvements in staffing, and scheduling practices aren't overlooked due to complacency. The safety and positive outcomes for our patients and nurses are at stake.

Author:

Susan M. Reese
Chief Nurse Executive
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briefing is not limited to the operating theatres but can also be applied in other high risk areas of medicine as long as all important issues of risk management are considered.

Conclusions

The WHO checklist is related to human factors and technical hazards as well as leadership, financial, educational, procedural and organisational issues of risk management. Checking, communication and teambuilding are the most important components of risk management using the WHO checklist. Implementation includes detailed team information, training and supervision by checklist coordinators during

References

- Arnold P, Allyn PA, Nichols EM, Hill DL, Pezzlo M, Bartlett RH. Control of methicillin-resistant *Staphylococcus aureus* in a burn unit: role of nurse staffing. *J Trauma*. 1982;22(11):954-959.
- Barker LM, Nussbaum MA. Fatigue, performance and the work environment: a survey of registered nurses. *J Adv Nurs*. 2011;67(6):1370-1382.
- Blegen MA, Vaughn TE, Goode CJ. Nurse experience and education: effect on quality of care. *J Nurs Adm*. 2001;31(1):33-39.
- Geiger-Brown J, Trinkoff AM. Is it time to pull the plug on 12-hour shifts? Part 1. The evidence. *J Nurs Adm*. 2010;40(3):100-102.
- Geiger-Brown J, Trinkoff AM. Is it time to pull the plug on 12-hour shifts? Part 3. Harm reduction strategies if keeping 12-hour shifts. *J Nurs Adm*. 2010;40(9):357-359.
- Patrician PA, Loan L, McCarthy M, et al. The association of shift-level nurse staffing with adverse patient events. *J Nurs Adm*. 2011;41(2):64-70.
- Rogers AE, Hwang WT, Scott LD, Aiken LH, Dinges DF. The working hours of hospital staff nurses and patient safety. *Health Aff (Millwood)*. 2004;23(4):202-212.
- Russell B, Ehrenkranz NJ, Hyams PJ, Gribble CA. An outbreak of *Staphylococcus aureus* surgical wound infection associated with excess overtime employment of operating room personnel. *Am J Infect Control*. 1983;11(2):63-67.
- Zboril-Benson LR. Why nurses are calling in sick: the impact of healthcare restructuring. *Can J Nurs Res*. 2002;33(4):89-107.

daily practice to avoid neglect of communication and teambuilding. The concept of systematic briefing is probably also efficient in other fields of medicine as long as all important issues of risk management are considered.

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INFORMATION SECURITY CONSULTANTS IN HOSPITALS

Is Outsourcing the Answer?

By Koen Claessens

Since the establishment of the Crossroads bank of Social Security in Belgium in 1990, it is a legal requirement for all organisation receiving access to the bank to appoint an information security consultant. By this assignment, they would also comply with the European data privacy legislation. In practice, a lot of hospitals are not able to find such a consultant and assign them with a meaningful job description for several reasons.

In the beginning, only few security consultants were appointed because no consequences were linked to non-compliance. On July 5, 2011 however, the sectorial Committee on Social Security & Health in Belgium decided that hospitals without a consultant would no longer be granted access to personal data of the Crossroads bank and national register. An important underlying reason for this decision was the increasing computerisation in hospitals, especially when it comes to patient medical records and the electronic exchange of data, which increases the risks concerning data privacy even more.

In the future it is expected that the requirement of a security consultant will be enforced in other types of organisations that manage personal data. In the social security sector this would for example apply to pension funds, insurance companies and social secretariats.

Lack of Budget and Appropriate Candidates

Many hospitals have problems filling out the requirement of an information security consultant. First of all no budget has been foreseen by the government to support this new requirement. As a consequence, often a cheap solution is sought. Also, hospitals often have difficulties finding an appropriate candidate within the organisation or by recruitment, who has the required knowledge and motivation. This is especially difficult given the fact that the security consultant must be independent and therefore may not be part of the internal IT department, where the required knowledge is strongly IT oriented.

In the meantime hospitals have developed a variety of models to fill out the function of security consultant. For example, six psychiatric hospitals are collaborating by sharing the same security consultant. This is possible because the six hospitals use similar software so

combining efforts and working with one security consultant is more efficient. Two other hospitals are using a “cross-fertilisation strategy”, the IT manager of hospital A is security consultant in hospital B and vice versa. This might also enable synergies between both hospitals in the future.

The tasks of the security consultant can be divided into two different groups. On the one hand there are ‘startup tasks’, which consist of establishing an information security policy, performing security risk analysis and designing the security plan based on this. On the other hand, there are also ‘recurring tasks’, which are to be

Given the fact that the function of security consultant is neither an executive nor a management function but rather an advisory function, the position is well suited for outsourcing

Startup Tasks Versus Recurring Tasks

The functional description of an information security consultant reads as follows: ‘He/she advises the Executive Director concerning all aspects of information security. This implies a documenting, analysing, advising and monitoring role. He/she designs security plans for a certain period, which incorporates the resources required to execute the plan. It is therefore not an executive or management function, the responsibility concerning actual decisions about information security entirely lies with the management.’

In other cases where an internal security officer is assigned, hospitals often have difficulties to assign a meaningful and substantive interpretation to the tasks of the security consultant. And even when the government organises seminars concerning this issue, they are often not sufficiently pragmatic to define a concrete approach and project plan for the security consultant.

executed on a regular basis. These include for example the monitoring of and responding to security incidents, the reporting on the progress of the security plan and keeping all security documents up-to-date.

Outsourcing Ensures Independence

Given the fact that the function of security consultant is neither an executive nor a management function, but rather an advisory function, the position is well suited for outsourcing. Furthermore, the outsourcing of the function ensures the independence of the security consultant. As external advisors, they dispose of the necessary competences in the field of IT, information security, documentation and analysis.

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THE FINNISH HEALTHCARE SYSTEM

The Finnish public administration system consists of three levels: state, province and municipality. The provinces are regional representatives of the central state administration. Finland is divided into five administrative provinces and the Åland Islands, the latter having autonomous status.

Finland is divided into 415 self-governing municipalities (in 2008) with a median number of inhabitants of 5000. Municipalities are autonomous and they are responsible for providing basic services for their residents, including primary education and social and health services. The highest decision-making body in the municipality is the municipal council, which is elected by general election every four years. Municipalities levy a municipal income tax, the rate being decided independently by each municipality. Municipalities also receive some other tax revenues (real estate tax and part of the corporate tax), subsidies paid by the state and other revenues (such as user-fees).

Finnish Health Policy

The key objectives of health policy in Finland are to:

- Reduce premature deaths;
- Extend people's active and healthy life,
- Ensure the best possible quality of life for all; and
- Reduce differences in health.

Currently the most significant public health problems include circulatory diseases, malignant tumours, musculoskeletal diseases and mental health problems. Emerging problems are obesity, chronic lung diseases and diabetes (particularly type 2 diabetes).

Dual Public Financing

There are three different healthcare systems in Finland that receive public funding: municipal, private and occupational healthcare. There are significant differences between the systems, for example in the scope of the services provided, user-fees and waiting times. There are also different public financing mechanisms for healthcare services in Finland: municipal financing based on taxes and National Health Insurance (NHI) financing based on compulsory insurance fees.

Municipalities fund municipal healthcare services (except outpatient drugs and transport costs) and NHI funds for example private healthcare, occupational healthcare, outpatient drugs, trans-

port costs, sickness allowances and maternity leave allowances. This dual public financing creates challenges for the overall efficiency of service production, particularly in pharmaceutical care where dual financing incurs cost-shifting problems.

Municipalities

The largest share of publicly financed healthcare is provided by the municipal healthcare system (71% of outpatient physician visits, 59%

tween municipalities.

According to legislation, every municipality must have a health centre which provides primary health services. Additionally, legislation divides the country into 20 hospital districts (excluding Åland islands), which are responsible for the provision of municipal secondary care services. Each municipality must be a member of one hospital district. Hospital districts are financed and managed by the member municipalities. Often municipalities experience a lack of influence on the volume and costs of the hospital districts, de-

Table 1: Key Figures for Finland

Source: WHO

		Country	Regional Average	Global Average	
Selected Indicators (2010)					
General	Total population (thousands)	5365	
	Population living in urban areas (%)	85	70	50	
	Gross national income per capita (PPP int. \$)	37070	24308	10869	
Mortality and burden of disease	Life expectancy at birth* (years)	Male	77	71	66
		Female	83	79	71
		Both sexes	80	75	68
	Under-five mortality rate (per 1000 live births)	Both sexes	3	14	57
		Both sexes	91	146	176
	Adult mortality rate* (probability of dying between 15 and 60 years per 1000 population)				
	Maternal mortality ratio (per 100,000 live births)	5	20	210	
	Prevalence of HIV* (per 1000 adults age 15 to 49)	1	4	8	
Prevalence of tuberculosis (per 100,000 population)	9	63	178		

*Data refers to 2009

of outpatient dentists visits and 95% of inpatient care periods). According to legislation, more than 400 municipalities are responsible for providing all necessary health services for their residents. Municipalities have a significant degree of freedom to plan and steer the services as they see best, and state level steering could be described as weak.

There have been many local development projects and experiments concerning municipal services aimed at increasing cooperation between municipalities, between primary and secondary care services and between municipalities and the private sector. However, they are not well coordinated from the national level, which has caused regional variance in structures.

It could be said that public responsibility for healthcare is more decentralised in Finland than any other European country and some believe the problems outweigh the advantages. However, there are signs that the decentralisation trend has slightly reversed and national level steering will increase. For example, the governmental programme for the restructuring of municipalities and services has a goal to decrease the number of municipalities and increase cooperation be-

spite the fact that they directly own them, and find that primary healthcare is in too weak a position relative to secondary healthcare.

Legislation sets maximum user-fees and an annual ceiling for healthcare charges for municipal services. These user-fees cover on average 7% of municipal healthcare expenditure. Outpatient drugs are not covered by the municipal healthcare system, but by NHI instead. On average, 67% of outpatient drug costs are reimbursed to the patient. There is a (separate) ceiling for out-of-pocket payments for outpatient drugs. Both the municipal healthcare and outpatient drugs ceilings are high compared with other Nordic countries. In extreme situations social assistance is available (when an individual's or a family's income is not enough to cover the user-fees of municipal healthcare services or outpatient drugs).

National Health Insurance Scheme

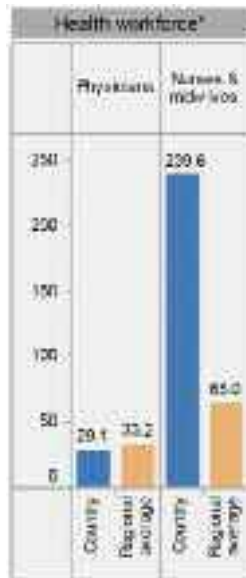
The statutory NHI scheme finances 17% of the total costs of healthcare. The scheme is run by the Social Insurance Institution (SII), with about 260 local offices all over the country. SII falls under the authority of the Parliament and covers

all Finnish residents. NHI is funded by the insured (38%), employers (33%) and the state (28%). The insured pay income-based insurance fees which are collected alongside taxation.

The use of private healthcare is partly reimbursed by NHI. The private sector provides about 16% of outpatient visits to physicians, 41% of outpatient visits to dentists and 5% of inpatient care periods. NHI covers about one third of the actual costs of the private health services. Additional voluntary health insurance is not widespread in the Finnish healthcare system and is mainly used to supplement the reimbursement rate of NHI.

Table 2:
The Health Workforce in Finland

Source: WHO



Health Workforce

The majority of physicians work for municipalities and hospital districts. Physicians in health centres and hospital districts are usually salaried employees of the municipalities. However, during the last 10 years a new trend has emerged to lease the physician workforce to health centres from private firms. Eleven per cent of physicians have a private practice as a full-time job and 30% work full-time in the public sector but hold a private practice outside their regular working hours.

Since the late 1990s there has been a significant shortage of physicians in Finland, which has had a significant impact on the developments of the healthcare system. In order to rectify this situation the yearly intake of medical students has been increased considerably.

Important Reforms

The most important state level reforms from the

beginning of the 1990s have been:

- Deregulation of state steering of municipal health services and related changes in state administration (1993);
- National Project to Ensure the Future of Health Care (2002–2007);
- Extension of public dental health care to all age groups (2002);
- Introduction of the waiting time guarantee (2005);
- Project to restructure municipalities and services (ongoing since 2005); and
- Development of the national electronic patient record system (ongoing since 2006).

In addition, there have been several reforms concerning pharmaceuticals, with one important goal being to further promote cost containment. In terms of the distribution of benefits, there are two major challenges in the Finnish healthcare system: geographical inequities and inequities between socioeconomic groups. There are significant differences between municipalities in service provision (for example in physician visits, dental care, mental healthcare, elective surgery) and waiting times. There are also significant differences between municipalities in resources invested in municipal healthcare leading to differences in the quality and scope of municipal services. However, these inequalities can also partly be explained by other differences between municipalities such as age structure, morbidity rates and use of private and occupational healthcare services.

There are also significant socioeconomic in-

equalities in the use of healthcare services. Among OECD countries pro-rich inequity in physician visits was found to be one of the highest in Finland (along with the United States and Portugal) in 2000. Significant pro-rich differences are also evident in screening, dental care, coronary revascularizations and in some elective specialised care operations (hysterectomy, prostatectomy and lumbar disc operations). Although overall mortality has fallen, the socioeconomic inequality in mortality seems to be increasing.

Conclusion

The Finnish healthcare system offers relatively good quality health services for reasonable cost with quite high public satisfaction. The most visible problems are long waiting times and personnel shortage in some municipalities. An ageing population, new medical technology, drug innovations and increasing population expectations will create challenges for the Finnish healthcare system in the near future. There are also some structures in the Finnish healthcare system which are perceived as problematic: the level of decentralisation, poor steering capacity in the system, relatively weak position of primary care, a lack of cooperation between primary and secondary care and dual financing.

Text adapted from:

Vuorenkoski L, Mladovsky P and Mossialos E. Finland: Health system review. Health Systems in Transition. 2008; 10(4): 1–168.

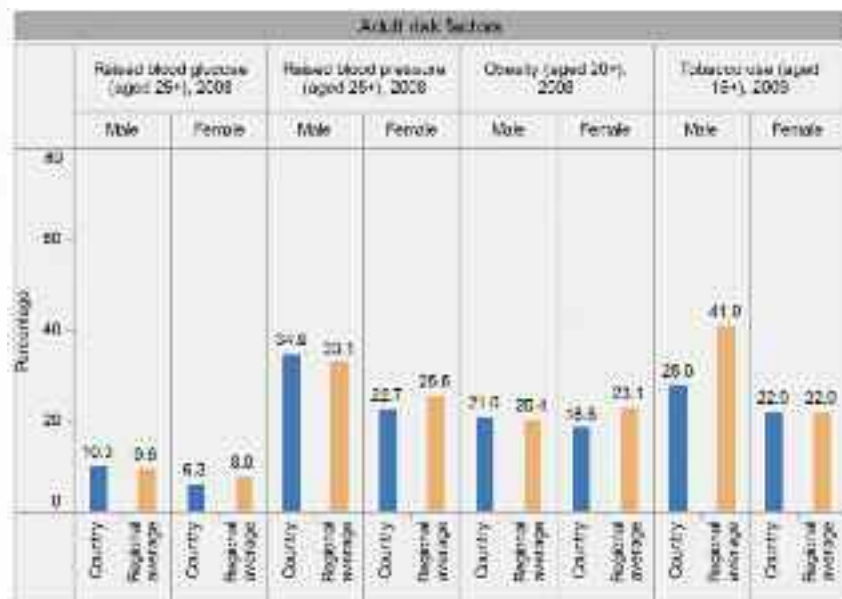


Table 3: Adult Risk Factors

Source: WHO

THE FINNISH ASSOCIATION OF HEALTH AND ECONOMICS

Interview with Tuomo Meriläinen

When, why and how was the Finnish Association of Health and Economics founded?

The Finnish Association of Hospital Economics (which became The Finnish Association of Health and Economics in 2010) was founded on the 9th of September 1928 in Helsinki, Finland. Jointly set up by the directors of administration and directors of finance in Finnish hospitals, the purpose was to develop the activity and enhance the interests of these hospital officials groups. From the beginning the aim was to form networks and connect with colleagues working in the same sector and to arrange specialised education. In 1933 the first publications by the association were launched. There was a halt in the activity of the Association during WW2, but 1947 - 1955 was a time of rapid enlargement in terms of activity. At this time the membership base also grew with the association opening up to include other hospital officials working in different fields.

From the start, the Association was in close contact with the similar associations in the other Nordic countries. This connection was very close until the beginning of the 1990s and also with Denmark after 2000. Cooperation with the German Association of Hospital Managers began in the late 70s.

Before the period of severe economic recession in Finland at the beginning of the 1990s, the number of members in our association was at its largest with about 1,500 professionals from different fields of the health sector. Now the Finnish association has around 1,100 members.

How long has the association been a member of the EAHM?

The Finnish Association joined EAHM in the 1970s, shortly after the EAHM was founded. Before that, the Finnish association was a member of the IHF, but the membership was withdrawn after joining EAHM. The Association arranged EAHM Congress in Tampere, Finland, in 1996.

What is the role of your association and what are its main activities?

We are the link between people interested in health, health economy and health education and those who are working in hospitals, health centres or other sectors of healthcare system. We publish our own magazine "Health and Economy" six issues per year. We are proud of our magazine, of its content and outlook.

Once per year the association arranges a two-day Health and Economy Seminar in one of the major cities in Finland. The programme consists of a great variety of interesting and up-to-date topics on the health and social sector. The event also includes separate smaller sessions for health professionals working in different sectors, for example in maintenance, nutrition, logistics or the IT sector.

There is also an annual one day health policy seminar in Helsinki. The seminar programme always includes prestigious speakers and a panel with representatives from Ministry of Social Affairs and Health or other top professionals from both the private and public sector.

Are there any particular important achievements or developments within the last few years that you would like to share with your European colleagues?

In recent years our members have been very active in the planned large reform of the Finnish social and healthcare system. Many of our members are in very prominent positions within the Finnish healthcare system. There has been for example a lot of discussion about the sufficient population basis, which would form a new social and health service area, the role of hospital districts and the relationship between primary and secondary healthcare and also social services. A current contentious issue has been the question of how to arrange the health service system for the elderly. The relative amount of Finnish senior citizens within our whole population is growing fastest in the whole Europe.

Do you offer training programmes for hospital managers? Is there an accreditation system for hospital managers in Finland?

The Finnish Association of Hospital Managers has been an associate member of The Finnish Association of Health and Economics from the beginning of this year. The hospital managers arrange, of course, different courses and sessions on their own, but in the future it is possible that we will connect some training for hospital managers inside our Health and Economy seminars, which I previously mentioned. There is no systematic or certified accreditation system for hospital managers in Finland. The hospital managers in our hospitals have different backgrounds and education, but all of them are highly qualified and trained managers.

The EAHM is currently concerned about the implementation of the European Directive on Cross Border Care. Is your association, and Finland in general focusing on this too? Is patient mobility an important issue?

There has already been some cross border patient mobility before this Directive. In Finland, we have also discussed internal mobility, because so far the possibility for the patient to select his/her location for hospital services has been very limited outside the patient's own hospital district (there are 20 of them in Finland at this moment in time). At this time, it is quite complicated to estimate, what the actual effect of this EU Directive on cross border incoming or outgoing patients in Finland. The restrictive factor in some sense is our language, which may inhibit this traffic. On the other hand, our own level in medicine is very high and well known throughout the world already in certain fields, with one example being orthopaedics and traumatology among athletes. Also, the Finnish population, particularly the younger generation, is nowadays used to travelling and staying abroad and has excellent language skills, so the threshold for using medical services in other EU countries is constantly increasing.

Finally, what does the future hold for the association?

The future of the Finnish Association of Health and Economics is very clear. Health and social services and the economic factors linked to them are one of the main and constant topics of discussion in our society. Our association can bring knowledge and expertise in these issues, and we can play a very important role in the future of health and economics, if we chose to take it. We also believe it very important to be in contact with our sister organisations in the EU because, basically, we all have similar kinds of problems in our healthcare systems and there is still a lot to be learnt from each other.

Interviewee:

Tuomo Meriläinen

The Finnish Association of Health and Economics
Vice Chairman



Nikolaus Koller

ORGANISER UNE GESTION « GENERATION-FRIENDLY » DANS LES HÔPITAUX

Alors que les autorités de contrôle alimentaire sont occupées dans toute l'Europe à poursuivre des chevaux déguisés en vaches, de nombreuses personnes sur notre continent luttent pour leur existence et se battent pour garder leur emploi. Le changement démographique dans la population en général a conduit à une modification complète de la situation du marché du travail, et cela concerne également le personnel de santé. Bien entendu, un vieillissement de la population s'accompagne d'une augmentation de la demande de services de soins de santé d'1 % par an. Mais à cette augmentation s'ajoute une toute nouvelle série de tableaux cliniques chez les patients : l'apparition de maladies dégénératives de l'appareil locomoteur et de maladies vasculaires est à la hausse, un plus grand nombre de tumeurs sont diagnostiquées et il y a de plus en plus de patients multi-morbides et de personnes souffrant de démence. Conséquences logiques de ce phénomène : une demande accrue de soins et le stress qui en résulte pour le personnel hospitalier.

Ce développement représente un défi pour les établissements de santé. Avec l'augmentation de la quantité de stress que le personnel de l'hôpital doit supporter, on arrive à une perte de la productivité et de la motivation du personnel qui s'accompagnent d'une hausse des coûts. Cette évolution pourrait même devenir une menace pour l'existence des établissements.

Ce changement démographique laisse deviner un autre défi qui est la conséquence du report de l'âge de la retraite à 70 ans. Il va devenir très important de coordonner le transfert de connaissances et de leadership ciblé dans les équipes d'âge mixte, tout en gardant un personnel efficace, motivé et qualifié. Le transfert de connaissances entre les membres expérimentés et les nouveaux membres du personnel a besoin, pour bien fonctionner, de ne pas être gêné par des questions de hiérarchie. Les gestionnaires des hôpitaux doivent garder à l'esprit une chose qui est particulièrement importante : il ne s'agit pas uniquement de recruter de nouveaux membres du personnel pour l'hôpital, il s'agit de les garder et de consolider leur emploi.

Dans ce numéro de (E)Hospital, nous étudions les

différentes approches de communication pour les gestionnaires. L'étude présentée ici décrit non seulement les styles de gestion du point de vue des administrateurs de la santé, mais aussi de celui de médecins et d'infirmier(e)s qui occupent des postes de direction. Trois styles distincts seront présentés du point de vue des gestionnaires, des décideurs et enfin de ceux qui travaillent avec ces deux groupes. Il est par ailleurs assez intéressant de noter que les médecins se voient très clairement investir des rôles de gestionnaires.

Un autre sujet important dans ce numéro est le leadership qui s'exerce directement auprès du patient : un modèle de partenariat clinique. Celui-ci décrit un modèle de leadership dans lequel le responsable des soins infirmiers et l'administrateur travaillent en étroite collaboration et en partenariat.

La Finlande est le pays présenté dans notre country focus ce mois-ci. En moyenne, la Finlande ne consacre que 7 % de son produit national brut à la santé publique – ce chiffre est inférieur à la moyenne des pays de l'Union européenne. Les soins de santé sont majoritairement financés par l'impôt – les communautés contribuent à hauteur de 70 % aux dépenses de santé. Ils reçoivent des fonds du gouvernement qui varient en fonction de l'âge et de la densité de la population, ainsi que de la puissance financière de chaque collectivité.

La newsletter du président

Dans sa lettre d'information, M. Heinz Kölking introduit un quatrième sujet à l'ordre du jour de l'AEDH : l'IMPO (Input-Management-Process-Output) positionne la gestion dans le cadre de l'hôpital. La lettre signale également les progrès réalisés par notre sous-comité scientifique ainsi que par notre sous-comité aux affaires européennes.

La lettre d'information peut être téléchargée à partir de www.eahm.eu.org

Nikolaus Koller,

Président du comité de rédaction



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.

LA GESTION D'UN HÔPITAL EN TEMPS DE CRISE : CONTRAINTES, DÉFIS ET OPPORTUNITÉS

LE 24ÈME CONGRÈS DE L'AEDH SE TIENDRA À LUXEMBOURG DU 28 AU 30 NOVEMBRE 2013

Les défis et les contraintes en temps de crise

Nos hôpitaux sont actuellement confrontés à de nombreux défis et contraintes. Depuis de nombreuses années, les budgets des hôpitaux sont en baisse et il y a de sérieuses pénuries de main-d'œuvre, en particulier dans certaines professions de santé ou spécialisations médicales et dans quelques zones géographiques. Les récentes épidémies, comme celle de grippe H1N1, le très contagieux norovirus responsable de gastro-entérites non bactériennes, et les infections nosocomiales ont des conséquences potentiellement énormes pour nos hôpitaux. D'autre part, on assiste à une demande croissante de soins cliniques de haute qualité en rapport avec les progrès de la technologie médicale. Une population vieillissante se traduit également par une évolution des besoins. Il y a augmentation de la nécessité d'une continuité des soins tandis que les soins spécialisés deviennent plus centralisés. Voici donc une petite sélection des nombreux défis et contraintes auxquels sont confrontés nos hôpitaux.

Depuis 2008 et après une période de croissance générale et de stabilité, tous les États membres de l'Union ont été touchés, à des degrés divers, par une crise financière qui se caractérise par une forte augmentation du déficit et de la dette publique. La précarité de la situation économique a mis les hôpitaux au centre de nombreuses mesures qui

visaient directement ou indirectement à réduire les coûts et à gagner en efficacité.

Les défis et les contraintes précédemment citées demeurent et sont maintenant intensifiés en raison de la crise financière. Certains considèrent la crise comme une sonnette d'alarme : ils pensent que nous avons profité d'une grande aisance pendant trop longtemps.

Les opportunités en temps de crise

Lorsqu'un navire arrive dans une mer agitée ou se trouve pris dans une tempête, il a besoin d'un solide capitaine pour relever le défi et chercher des occasions de retrouver l'eau calme, quelqu'un qui connaisse la fois le potentiel et les limites du navire et de l'équipage.

Au cours du 24ème Congrès de l'AEDH, des orateurs venus de toute l'Europe développeront pour vous des thématiques identiques. Ils vous parleront des contraintes qu'ils subissent, des défis qu'ils rencontrent et des opportunités qu'ils ont trouvées pour effectuer des changements organisationnels et structurels qui devraient se révéler bénéfiques pour leurs hôpitaux dans l'avenir.

Donc, avec une économie affaiblie et un budget hospitalier réduit, à quoi peut s'engager un directeur d'hôpital s'il veut continuer à fournir les meilleurs soins ?

Comme un capitaine face à la tempête, les gestionnaires hospitaliers devront affiner leur réflexion en temps de crise. C'est le but que s'est donné le congrès. Il réunit des

experts reconnus dans le domaine de la gestion qui se pencheront sur ces différents aspects grâce à l'élaboration de lignes directrices stratégiques, l'introduction de la réingénierie des processus d'affaire et l'introduction de l'innovation grâce à de nouvelles technologies et de nouveaux procédés. De cette façon, nous mettons l'accent sur les domaines où un fort leadership fera la différence.

Des tables rondes seront l'occasion de partager les meilleures pratiques et de discuter de la valeur ajoutée. Des présentations de posters y contribueront en montrant la mise en œuvre et les avantages pratiques de la mesure de la qualité, de la sécurité des patients, de la communication, de la qualité et de la rentabilité. À l'étage de l'exposition, les professionnels de l'industrie vous offriront un aperçu des derniers développements intéressants les soins de santé.

Les orateurs et les posters sont dans l'impossibilité de mettre en évidence toutes les contraintes, les défis et les opportunités qui se présentent actuellement. Nous avons donc prévu de nombreuses opportunités d'échanges en réseau où les participants peuvent échanger leurs expériences et leur point de vue. Et pour découvrir les hôpitaux de Luxembourg, le programme de pré-conférence comprend des visites dans un hôpital.

Nous vous invitons à visiter le site Web du congrès sur <http://www.eahm-luxembourg2013.lu> et nous sommes impatients de vous rencontrer à Luxembourg.

2ÈME « JOINT EUROPEAN HOSPITAL CONFERENCE »

La prochaine « Joint European Hospital Conference » organisée conjointement par HOPE, l'AEHM et l'AEDH aura lieu le vendredi 22 novembre 2013 à Düsseldorf, en Allemagne, dans le cadre du Deutsche Krankenhausstag au sein

du 36ème salon Medica 2013.

La séance du matin poursuivra le thème engagé l'année dernière et examinera la directive européenne sur les droits des patients. Dans l'après-midi, la conférence mettra

l'accent sur l'accès à l'innovation dans les hôpitaux.

Plus d'informations sur <http://www.eahm.eu.org/> ⇒ Resource center ⇒ List of congresses



Leadership et communication dans l'industrie des soins de santé : comprendre les outils qui mènent au succès

Par Rebekah Page Rogers

Le secteur de la santé est en constante progression. Au cours des dix dernières années, il est devenu une superpuissance sociétale qui assure aux citoyens les services médicaux essentiels et sert de moteur économique aux collectivités. Mais, en même temps, le secteur de la santé est complexe et multiforme. En raison même de sa complexité, les changements survenant dans les soins de santé ont laissé les dirigeants et les gestionnaires perplexes, se demandant s'ils étaient capables de donner à leurs établissements une orientation. Dans cet article sont décrits les trois types de leadership – les leaderships transformationnel, transactionnel et altruiste – ainsi qu'une analyse des différents styles que les médecins, les infirmier(e)s et les administrateurs d'hôpitaux sont censés adopter. Finalement, l'ultime recommandation donnée au lecteur est de comprendre que le leadership n'est pas une équation universelle et identique pour chacun de nous. Le pouvoir est toujours dans les yeux de celui qui regarde et ce n'est que par la formation et la réflexion que l'on peut en apprendre davantage sur soi-même et sur son style unique et très personnel de communication et de leadership.



Le leadership qui s'exerce directement auprès du patient : un modèle de partenariat clinique

Par Christopher Kim

Dans le milieu hospitalier, les soins dont bénéficient les patients sont devenus de plus en plus complexes et on se trouve confrontés à des cas plus graves, et à une nécessité toujours plus grande de coordination des soins entre les différents professionnels de santé. Ces professionnels voient beaucoup de leur temps consommé pour se conformer aux exigences administratives, pour l'assurance de la qualité et de la sécurité, et pour parler des dossiers de leurs patients avec d'autres professionnels. Ces activités sont bien entendu importantes pour une bonne organisation des soins de santé, mais il est tout aussi important, sinon plus, de s'assurer que les établissements de santé s'efforcent de fournir une expérience centrée sur le patient tout au long de l'hospitalisation.

Le modèle de leadership basé sur l'unité de soins défend l'approche centrée sur le patient. Le point central de ce modèle part du principe que les grandes décisions stratégiques de l'établissement sont élaborées au niveau de la direction, mais que ces objectifs stratégiques ne sont atteints et réalisés que directement auprès du patient, dans les soins qu'on lui donne. En créant un poste de directeur médical pour chaque unité de soins qui s'associe avec l'infirmière responsable de cette unité, ils peuvent évaluer les différents soins effectués auprès des patients : reconnaître ceux qui sont bien réalisés et identifier de manière sélective les zones où il existe un besoin d'amélioration. Ensemble, ils peuvent travailler avec le personnel affecté à l'unité de base et le personnel de soutien – qui sont par exemple les soins infirmiers, la pharmacie, les thérapeutes, les gestionnaires et les travailleurs sociaux, les nutritionnistes, le clergé et le personnel de surveillance – et les équipes de médecins pour améliorer la culture interdisciplinaire du lieu de travail – elle devra être axée sur les initiatives qualité, sécurité et efficacité – et améliorer le vécu qu'aura chaque patient dans cet hôpital. Des

paramètres mesurables ont été établis pour chacune de ces catégories, et il est important que la direction de l'hôpital fournisse ces données ainsi que ses objectifs aux responsables de chaque unité.



Les avantages économiques de la gestion des antibiotiques à l'hôpital : une analyse économique

Par Alastair Gray

Un outil d'évaluation permettant de se faire une idée de l'utilisation des antibiotiques et de la gestion des infections a été utilisé pour estimer si les patients ayant développé des infections dans les services médicaux et chirurgicaux d'urgence pourraient recevoir une nouvelle antibiothérapie et quitter l'hôpital. L'évaluation a porté sur 291 patients répartis dans 30 services d'urgence appartenant à cinq trusts hospitaliers de Grande-Bretagne et comprenait des informations sur les variables démographiques, le diagnostic, la situation sociale, la durée d'hospitalisation et des antibiotiques prescrits. L'antibiothérapie et l'éventualité du départ de l'hôpital ont été considérées par un médecin et par un pharmacien. Les soins effectués pour chaque patient et les économies potentielles découlant de ces changements de gestion ont été mesurés et chiffrés. Au total, la mise en œuvre des recommandations aurait pu diminuer le coût de 662 £ (avec un intervalle de confiance de 95% compris entre 393 £ et 930 £) pour chacun des patients évalués. Si l'on exclue les patients ayant bénéficié des plus longues durées de séjour, les chiffres restent quand-même significatifs.

L'évaluation de l'utilisation des antibiotiques dans un hôpital peut réduire les coûts imputables aux antibiotiques et la durée du séjour. Les économies potentielles sont considérables, même si l'on prend en compte les frais sont engagés pour des services extérieurs à l'hôpital. Des études randomisées pourraient contribuer à renforcer les preuves concernant cette intervention.



La « Surgical Safety Checklist » de l'Organisation mondiale de la santé : un outil de gestion multifonctionnel des risques hospitaliers

Par Axel Fudickar

La gestion des risques hospitaliers prend en compte les facteurs humains et les risques techniques, mais également les questions de leadership, de procédure, de formation, qu'elles soient financières ou organisationnelles. La « Surgical Safety Checklist » de l'Organisation mondiale de la santé est un outil de gestion des risques multifonctionnel lié aux domaines précités qui permet de réduire la morbidité et la mortalité périopératoires. Cependant, son efficacité ne s'entend que si elle est correctement mise en œuvre et implémentée. Si la vérification des éléments est importante, cette liste a également donné une large place à la communication, à l'esprit d'équipe, au leadership, à la formation et à l'organisation dans le cadre de la gestion des risques.

Pour éviter que ces aspects ne soient négligés lors de sa mise en œuvre, on ne doit pas oublier l'adaptation des listes de contrôle, la délivrance d'une information détaillée à l'équipe, la formation et la supervision par les coordinateurs de la liste de contrôle en salle d'opération. Si la mise en œuvre est adéquate, le concept de « team briefing » (réunion d'équipe) décrit dans la liste de l'OMS est probablement aussi transposable dans

d'autres services : la communication de l'équipe en salle de réanimation des polytraumatisés est un exemple d'adaptation possible de ce concept à d'autres environnements.

► **Le mieux est d'avancer une étape après l'autre : établir des stratégies de mise en œuvre progressives de la gestion informatisée des entrées des commandes d'un laboratoire pour une meilleure productivité**

Par Timothy R. Huerta, Mark A. Thompson, Eric W. Ford, William F. Ford

Pour réaliser quels sont les gains de productivité et d'efficacité que font gagner les systèmes informatiques aux établissements de santé, les gestionnaires doivent repenser l'hôpital pour accorder les flux de travail aux capacités de ces systèmes. Cette étude a exploré les différences de productivité entre des hôpitaux américains qui emploient des approches différentes de systèmes informatisés des entrées des commandes et de gestion pour les laboratoires (eLAB). Nous présentons une taxonomie basée sur des données longitudinales avec trois grandes catégories : la progression, la stagnation et la régression.

En utilisant les analyses des données longitudinales basées sur la construction des indices de productivité globale de Malmquist, les hôpitaux ont été comparés dans chaque catégorie. Parmi les hôpitaux qui étaient en progression, les établissements qui avaient adopté ces nouveaux systèmes trop rapidement ont été confrontés à des difficultés touchant l'efficacité et la productivité : le fait de faire face dans un même temps à des changements culturels et à l'adoption de nouveaux outils technologiques a entraîné une baisse de la performance dans l'année de mise en œuvre et l'année qui a suivi. La comparaison de ces différentes approches nous apprend que les hôpitaux peuvent faire le choix d'une stratégie progressive pour la mise en œuvre du système eLAB, ce qui permettrait d'atténuer les pertes de productivité qui pourraient y être associées.

► **Evidence-Based Nursing**

Par Susan Reese

Alors que nous sommes en train de passer d'une approche standardisée des soins infirmiers à un système basé sur la qualité et les résultats, la nécessité d'identifier et de réévaluer les processus et les pratiques qui entourent les soins devient essentielle. Les établissements de santé doivent très sérieusement se pencher sur la réévaluation et la redistribution du personnel au sein des services ainsi que la planification de leur travail, en mettant l'accent sur ce qui nous est révélé aujourd'hui afin de choisir les pratiques les plus sûres pour soutenir les meilleurs résultats dans l'intérêt de nos patients et de notre personnel soignant.

Les recommandations factuelles peuvent avoir des effets positifs sur le personnel et sur la satisfaction des patients et générer

une augmentation de la qualité et de la sécurité. Les voici :

- réduire l'utilisation des longs horaires de travail ;
- étudier les moyens de s'assurer que les infirmier(e)s partent à la fin de leur service ;
- réduire l'utilisation des heures supplémentaires ;
- mais faire en sorte que chacun ait un accès égal aux heures supplémentaires ;
- connaître les membres du personnel dont vous planifiez le travail ;
- définir dans chaque équipe une réelle palette de compétences et s'y tenir ;
- mélanger les niveaux d'expérience dans chaque équipe de travail ;
- s'assurer que sont planifiées des périodes de repos suffisantes entre les périodes travaillées lors de l'approbation des changements d'horaire ;
- élaborer des lignes directrices pour la pratique ;
- surveiller les tendances des principaux indicateurs de performance se rapportant à la dotation et aux horaires du personnel.

► **Consultant en sécurité informatique dans les hôpitaux : au sein de l'établissement ou en externe ?**

Par Koen Claessens

Depuis 1990, en Belgique, la Banque carrefour de la sécurité sociale (BCSS) a fait une obligation légale, pour tous les organismes qui ont accès à cette banque, de nommer un consultant spécialisé en sécurité informatique. Par cette nécessité, ils rentrent en conformité avec la législation européenne sur la protection des données. Cependant, dans la pratique et pour de nombreuses raisons, beaucoup d'hôpitaux ne sont pas en mesure de trouver un tel consultant et de l'affecter à une charge de travail particulière. Le 5 Juillet 2011, en Belgique, le Comité sectoriel de la Sécurité sociale et de la Santé a décidé que les hôpitaux n'ayant pas de consultant ne seraient plus autorisés à accéder aux données personnelles de la Banque carrefour et du registre national. Une importante cause sous-jacente à cette décision était l'informatisation croissante des hôpitaux et en particulier des dossiers médicaux des patients, et l'échange électronique de données qui augmentent d'autant plus les risques attachés à la confidentialité des données.

Cette nouvelle réglementation pose des problèmes à de nombreux hôpitaux. Tout d'abord, aucun budget n'est prévu par le gouvernement pour soutenir cette nouvelle exigence. Ensuite, les hôpitaux ont souvent des difficultés à trouver, que ce soit au sein de leur établissement ou par recrutement, un candidat approprié qui possède les connaissances et la motivation nécessaires. Et cela se complique si l'on tient compte du fait que cette personne ne peut pas faire partie du service informatique interne de l'hôpital, et ce afin de garantir son indépendance. Une des solutions consiste à externaliser : six hôpitaux psychiatriques belges utilisant un logiciel similaire collaborent actuellement avec le même consultant en sécurité informatique. Deux autres hôpitaux utilisent un processus d'enrichissement réciproque : le responsable informatique de l'hôpital A est le consultant en sécurité de l'hôpital B, et vice versa.



Nikolaus Koller

DER DEMOGRAPHISCHE WANDEL IM GESUNDHEITSWESEN: GENERATIONSGERECHTES FÜHREN IM KRANKENHAUS

Der demographische Wandel im Gesundheitswesen: Generationsgerechtes Führen im Krankenhaus

Während Lebensmittelkontrolleure in ganz Europa nach als Kuh getarnten Pferden fahnden, kämpfen in weiten Teilen Europas Menschen um ihre Existenz, ihren Arbeitsplatz. Auch im Gesundheitswesen führt vor allem die demographische Entwicklung der Bevölkerung zu einer veränderten Situation auf dem Arbeitsmarkt. Zwar bringt die alternde Bevölkerung eine gesteigerte Nachfrage nach Gesundheitsleistungen von etwa einem Prozent jährlich, sie zeigt aber auch ein neues Spektrum an Krankheitsbildern der Patienten auf. Die Häufigkeiten an degenerativen Erkrankungen des Bewegungsapparates und an den Gefäßen nimmt zu, eine Vielzahl an Tumoren sowie multimorbide und demente Patienten werden immer öfter diagnostiziert. Die Folge daraus ist ein gesteigerter Pflegebedarf und somit auch eine gesteigerte Belastung des Krankenhauspersonals.

Diese Entwicklung stellt eine Herausforderung für die Unternehmen im Gesundheitswesen dar. Mit einer gesteigerten Belastung des Krankenhauspersonals gehen auch immer eine abnehmende Produktivität und eine geringere Motivation der Mitarbeiter sowie zunehmende Kosten einher. Es kann so weit gehen, dass diese Entwicklung existenziell bedrohlich für das Unternehmen wird.

Eine weitere Herausforderung des demographischen Wandels wird bei einer Heraufsetzung des Renteneintrittsalters, auf beispielsweise 70 Jahre, sein. Wichtig hier sind der Wissenstransfer und die Führung altersgemischter Teams sowie die Mitarbeiter fit, motiviert und qualifiziert zu halten. Auch soll der Wissenstransfer zwischen erfahrenen und neuen Mitarbeitern funktionieren und nicht durch Hierarchiefragen gehindert werden. Wichtig und was für Krankenhausmanager stets im Fokus stehen sollte ist, dass es nicht nur darum geht, neue Mitarbeiter für Spitäler zu gewinnen, sondern diese auch zu halten und zu stärken.

In dieser Ausgabe Zwei beschäftigen wir uns unter anderem mit dem Thema der verschiedenen Kommunikationsausrichtungen von Führungskräften. Die hier vorgestellte Studie beschreibt Führungsstile nicht nur aus der Sicht von Gesundheitsverwaltern sondern auch jene von Ärzten und Krankenschwestern in Führungspositionen. Drei klare Stile werden aufgezeigt: der Standpunkte der Führung, die Entscheidungsmacher und die Zusammenarbeiten, wobei es interessant ist zu sehen, dass sich Ärzte klar in der Rolle der Führungsposition sehen.

Ein weiteres wichtiges Thema stellt das Clinical Partnership Model on General Care Inpatient Units dar. Es wird hier ein Führungsmodell beschrieben, in welchem Pflegedirektion und Ärztliche Direktion eng als Partner zusammenarbeiten.

Finnland steht im Mittelpunkt des Länderfokus dieser Ausgabe. Finnland gibt im Schnitt nur 7% des Bruttoinlandproduktes für das öffentliche Gesundheitswesen aus und liegt damit unter dem EU-Durchschnitt. Das Gesundheitswesen wird überwiegend aus Steuergeldern finanziert, wovon die Gemeinden etwa 70% der Gesundheitsausgaben bestreiten. Sie erhalten dafür staatliche Zuschüsse welche nach Altersstruktur, Bevölkerungsdichte und Finanzkraft der jeweiligen Gemeinde variieren.

Newsletter des Präsidenten

In seinem, 2013 Presidential Newsletter' stellte Hr. Heinz Kölking ein viertes Hauptthema der EVKD Agenda vor: IMPO (Input-Management-Process-Output), womit Management in den Kontext des Krankenhauses gestellt wird. Der Newsletter berichtet zudem über die Fortschritte unserer Unterausschüsse „Wissenschaft“ sowie „Europäische Angelegenheiten“.

Der Newsletter des Präsidenten steht unter der Website [http://www.EVKD.eu.org/ Documents Presidential Letters](http://www.EVKD.eu.org/Documents/Presidential%20Letters) zum Download bereit.

Nikolaus Koller



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.

KRANKENHAUSMANAGEMENT IN KRISENZEITEN: EINSCHRÄNKUNGEN, HERAUSFORDERUNGEN UND CHANCEN

24. EVKD KONGRESS, 28.–30. NOVEMBER 2013 LUXEMBURG

Herausforderungen und Einschränkungen in Krisenzeiten

Unsere Krankenhäuser stehen heutzutage vielen Herausforderungen und Einschränkungen gegenüber. Seit vielen Jahren schrumpfen die Krankenhausbudgets und der Arbeitskräftemangel ist mittlerweile als gravierend einzustufen, vor allem in bestimmten Gesundheitsberufen, medizinischen Fachbereichen und geographischen Gebieten. Die jüngsten Ausbrüche etwa von H1N1/Influenza, dem hochansteckenden Norovirus („Winterbrechdurchfall“) oder nosokomialen Infektionen haben potentiell enorme Auswirkungen auf Krankenhäuser. Auf der anderen Seite herrscht von klinischer Seite eine zunehmende Nachfrage für hochqualitative Pflege, kombiniert mit Fortschritten der medizinischen Technologie. Die alternde Bevölkerung bringt wiederum andere Bedürfnisse mit sich. Der Bedarf für kontinuierlich vorhandene Betreuung steigt an, während die fachlich spezialisierte Betreuung zunehmend zentralisiert wird. Dies ist nur eine kleine Auswahl der vielen Herausforderungen und Einschränkungen, denen sich Krankenhäuser gegenübersehen.

Seit 2008 – nach einer Periode allgemeinen Wachstums und Stabilität – wurden alle Mitgliedstaaten der Europäischen Union mehr oder weniger stark von der wirtschaftlichen Krise getroffen, gekennzeichnet durch ein starkes Ansteigen des staatlichen Defizits und der öffentlichen Verschuldung. Aufgrund dieser prekären wirtschaftlichen Situation standen Krankenhäuser im Zentrum vieler Maßnahmen, die direkt oder indirekt auf Einsparun-

gen und erhöhte Effizienz gerichtet waren.

Die oben erwähnten Herausforderungen und Einschränkungen bestehen nach wie vor und sind jetzt aufgrund der aktuellen finanziellen Krise zusätzlich verschärft. Manchen erscheint diese Krise jedoch geradezu als Weckruf nach einer allzu langen Phase allzu großer Bequemlichkeit.

Chancen in Krisenzeiten

Gerät ein Schiff in stürmisches Gewässer oder gar in Seenot, braucht es einen charakterstarken Kapitän, der die Herausforderung annimmt und – in Kenntnis sowohl der Stärken als auch der Schwächen von Gefährt und Mannschaft – sich nach Möglichkeiten umsieht, in ruhige Gewässer zu segeln.

Am 24. EVKD Kongress werden Vortragende aus ganz Europa Sie auf ähnlichen Reisen begleiten. Als Teilnehmer werden Sie von den Einschränkungen hören, die die Redner erfahren haben, von den Herausforderungen, denen sie sich gegenübersehen, und den Chancen, die sie nichtsdestoweniger angehtroffen haben, um wertvolle organisatorische und strukturelle Veränderungen durchzuführen, die ihre Krankenhäuser sicher in die Zukunft geleiten.

Daher: Angesichts einer schwächelnden Wirtschaft und eines gekürzten Krankenhausbudgets, welche Schritte kann ein Krankenhausmanager unternehmen, um weiterhin immer bessere Betreuung zu bieten?

Ebenso wie der Kapitän im Sturm werden Krankenhausmanager nicht umhin kommen, ihre Denkweisen in Krisenzeiten weiterzuent-

wickeln. Der Kongress mit seinen anerkannten Experten aus dem Managementbereich wird dieses Thema aus verschiedenen Sichtweisen weiter ausführen und in weiterer Folge strategische Richtlinien entwickeln, sowie optimierte Geschäftsabläufe der Innovation auf Basis neuer Technologien und Vorgangsweisen vorstellen. Unser Ziel ist der Fokus auf Bereiche, in denen eine starke Führung wirklich etwas bewegen kann und bewegen wird. Runde Tische geben Teilnehmern die Möglichkeit, sich über ‚best practices‘ und Wertschöpfung auszutauschen. Poster veranschaulichen die Einführung und die praktischen Vorteile von Qualitätserfassung, Patientensicherheit, Kommunikation, Qualität und Kosteneffektivität. Auf der Ausstellungsfläche werden Experten der Gesundheitsbranche vertiefte Einblicke in die neuesten Entwicklungen auf diesem Gebiet bieten.

Es ist den Vortragenden und Autoren der Poster natürlich nicht möglich, auf sämtliche aktuelle Einschränkungen, Herausforderungen und Chancen einzugehen. Daher haben wir auch jede Menge Möglichkeiten des Netzwerkens vorgesehen, bei denen die Teilnehmer ihre Erfahrungen und Sichtweisen austauschen können. Und um sich einen Überblick über die Situation der Krankenhäuser in Luxemburg selbst zu verschaffen, umfasst das Vorprogramm der Konferenz auch Besuche dieser Einrichtungen.

Wir laden Sie herzlich ein, die Kongress-Site auf <http://www.EVKD-luxembourg2013.lu> zu besuchen und freuen uns darauf, Sie in Luxemburg begrüßen zu dürfen.

JOINT EUROPEAN HOSPITAL CONFERENCE

Die nächste Joint European Hospital Conference – gemeinsam organisiert von HOPE, AEMH und EVKD – findet am Freitag, den 22. November 2013 in Düsseldorf statt, im Rahmen des 36. Deutschen Krankenhaustages bei der

Medica 2013. Die Vormittagssitzung wird das zentrale Thema des vergangenen Jahres wieder aufgreifen und sich mit der Europäischen Richtlinie für Patientenrechte beschäftigen. Am Nachmittag liegt der Fokus der Konferenz auf

dem Zugang zu Innovation in Krankenhäusern.

Mehr Information unter:
<http://www.EVKD.eu.org/> ⇒ Resource center ⇒ List of congresses



med.Logistica – nationaler Branchentreff für Krankenhauslogistik

Im Fokus: Prozessoptimierung im Krankenhaus

In Leipzig können sich Vertreter des Krankenhausmanagements umfassend und konzentriert über Produkte, Dienstleistungen und Lösungen für logistische Prozesse der Beschaffung, des innerbetrieblichen Personen-, Material- und Informationsflusses sowie der Entsorgung informieren.



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Kongress für Krankenhauslogistik mit Fachausstellung

15. und 16. Mai 2013
Congress Center Leipzig

Weitere Informationen erhalten Sie unter:
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► **Führungsstärke und Kommunikation in der Gesundheitsbranche: Werkzeuge des Erfolgs**

Von Rebekah Page Rogers

Die Gesundheitsbranche weitet sich kontinuierlich aus. In den letzten zehn Jahren ist das Geschäft mit der Gesundheit zu einer gesellschaftlichen Supermacht geworden, das entscheidende medizinische Dienstleistungen für Bürger verfügbar macht und als wirtschaftlicher Motor für örtliche Gemeinschaften dient. Gleichzeitig ist die Gesundheitsbranche komplex und facettenreich. Aufgrund der Komplexität des Systems haben Veränderungen im Gesundheitswesen dazu geführt, dass Führungskräfte diesbezüglich einen gewissen Erschöpfungsgrad aufweisen und oft daran zweifeln, wie sie angesichts dieser Veränderungen ihren Einrichtungen einen klaren Richtungssinn vermitteln können. Der vorliegende Artikel beschreibt drei Führungsstile: transformational, transaktional und dienende Führung. Zudem werden die verschiedenen Führungsstile analysiert, die Ärzte, Krankenpflegepersonal bzw. Krankenhausverwalter bekanntermaßen an den Tag legen. Die endgültige Empfehlung für den Leser lautet: akzeptieren, dass es für eine Führerschaft kein universal gültiges Einheitsrezept gibt. Die Macht liegt immer im Auge des Betrachters; nur durch Weiterbildung und Besinnung kann man mehr über sich selbst und seinen ganz eigenen Führungs- und Kommunikationsstil lernen.

► **Führung an vorderster Front: eine klinisches Partnerschaftsmodell**

Von Christopher Kim

Die krankenhausbasierte Patientenbetreuung ist im Verlauf der Zeit immer komplexer geworden, aufgrund einer höheren Akuität der Fälle und des steigenden Bedarfs für die Betreuungskoordination zwischen allen Akteuren der Gesundheitsversorgung. Anbieter im Gesundheitswesen verwenden somit einen wesentlichen Teil ihrer Zeit darauf, Dokumentationspflichten zu erfüllen, sicherzustellen, dass Qualitäts- und Sicherheits-Checklisten richtig ausgefüllt sind und trotzdem genügend Zeit für die Diskussion des einzelnen Patientenfalls mit anderen Leistungserbringern im Gesundheitswesen bleibt. Während diese Aktivitäten natürlich gewährleisten, dass die Gesundheitseinrichtung richtig „läuft“, ist es genauso wichtig – wenn nicht sogar noch wichtiger –, dass Gesundheitseinrichtungen danach streben, während des gesamten stationären Aufenthalts eine patientenzentrierte Erfahrung zu bieten. Das ‚Local Unit‘ Führungsmodell – basierend auf der jeweiligen Abteilung – befürwortet den patientenzentrierten Ansatz. Grundsätzlich beruht dieses Modell darauf, dass institutionell breitgefächerte strategische Beschlüsse zwar auf Ebene der Führungskräfte entwickelt werden, die Ausführung dieser strategischen Ziele jedoch auf Ebene der direkten Patientenbetreuung stattfindet. Ein medizinischer Direktor arbeitet im Team mit einer leitenden Pflegeangestellten derselben Abteilung, womit diese beiden Experten nicht nur die Patientenbetreuung überwachen, sondern auch feststellen können, wo es noch Raum für Verbesserung gibt. Zusammen mit dem Abteilungspersonal (Pflegepersonal,

Pharmazeuten, Therapeuten, Fallmanager, Sozialarbeiter, Diätassistenten, Bürokräfte, Wachpersonal) und den ärztlichen Teams können sie die interdisziplinäre Arbeitsplatzkultur verbessern, sich auf Initiativen der Qualität, Sicherheit und Effizienz konzentrieren und die Krankenhausenerfahrung des Patienten insgesamt verbessern. Für alle genannten Kategorien gibt es geeignete Messgrößen, und es ist wichtig, dass die Krankenhausführung diese Daten den Abteilungsleitern zugänglich macht, zusammen mit ihren Zielen.

► **Wirtschaftlicher Nutzen des Antibiotika-Managements im Krankenhaus: eine ökonomische Analyse**

Von Alastair Gray

Die Studie bestimmte mittels eines Evaluierungstools für die Überprüfung des Antibiotika-Gebrauchs und des Infektions-Managements die Möglichkeit, das Antibiotika-Regime von Patienten mit Infektionen auf akuten und chirurgischen Abteilungen zu ändern und sie aus dem Krankenhaus zu entlassen. Insgesamt wurden 291 Patienten auf 30 Akutstationen in fünf britischen Krankenhäusern analysiert; zu den erhobenen Informationen zählten demographische Variablen, Diagnose, soziale Stellung, Krankenhausaufenthalt und verschriebene Antibiotika. Jeweils ein Arzt und ein Apotheker analysierten die Antibiotika-Therapie sowie die Möglichkeit einer Entlassung. Die von jedem Patienten verbrauchten Gesundheitsressourcen sowie die potentiellen Einsparungen aufgrund der Management-Veränderungen wurden gemessen und quantifiziert. Insgesamt hätte die Durchführung der Empfehlungen 662£ pro analysiertem Patient eingespart (95% CI: 393-930£). Auch nach Ausschluss von Patienten mit langem stationären Aufenthalt blieben die möglichen Einsparungen signifikant. Die Evaluation des Antibiotika-Gebrauchs im Krankenhaus kann sowohl Antibiotika-Kosten als auch die Aufenthaltsdauer reduzieren. Die möglichen Einsparungen sind erheblich, auch bei Erfordernis zusätzlicher ambulanter Dienste. Randomisierte Studien wären nun zur Stärkung der Evidenz dieser Intervention erforderlich.

► **Die WHO ‚Surgical Safety Checklist‘: ein multifunktionales Risikomanagement-Tool im Krankenhaus**

Von Axel Fudickar

Zum Risikomanagement im Krankenhaus zählen unter anderem menschliche Faktoren und technische Gefahren ebenso wie Führungsstärke und Belange im Bereich Vorgänge, Aus- und Weiterbildung, Finanzen und Organisatorisches. Die ‚Surgical Safety Checklist‘ der Weltgesundheitsorganisation (WHO) ist ein multifunktionales Risikomanagement-Tool, das alle genannten Faktoren umfasst. Die WHO ‚Surgical Safety Checklist‘ vermindert nachweislich perioperative Morbidität und Mortalität, jedoch hängt ihre Effektivität von der korrekten Implementierung und Ausführung ab. Wichtige Komponenten des Risikomanagements in dieser WHO-Liste sind nicht nur das Überprüfen wichtiger Gegenstände, sondern auch Kommunikation, Teambuilding, Führungsstärke, Aus- und Weiterbildung sowie Organisation. Um ein Vernachlässigen

dieser Aspekte während der Durchführung zu vermeiden, muss die Implementierung der WHO ‚Surgical Safety Checklist‘ auch eine Anpassung der Checkliste, die detaillierte Teaminformation sowie die Ausbildung und Supervision durch Checkliste-Koordinatoren im Operationssaal einschließen. Bei entsprechender Umsetzung lässt sich das Team-Briefing Konzept der WHO Checkliste wahrscheinlich auch auf andere medizinische Bereiche übertragen. Ein mögliches Beispiel für die Übertragung des Checkliste-Konzepts auf andere Gebiete wäre etwa die Team-Kommunikation im Trauma- und Reanimierungsbereich.



Ein Schritt nach dem anderen: stufenweise Implementierung von Strategien für die elektronische Auftragsfassung im Labor steigert Produktivität

Von Timothy R. Huerta, Mark A. Thompson, Eric W. Ford, William F. Ford

Um die Vorteile in Produktivität und Effizienz des EDV-gestützten Gesundheitsbereichs zu realisieren, müssen Manager die Arbeitsflüsse dem Leistungsvermögen dieser Systeme anpassen. Die vorliegende Studie untersuchte Unterschiede in der Produktivität an US-Amerikanischen Krankenhäusern, die verschiedene Ansätze der elektronischen Auftragsfassung ihrer Laboratorien einsetzten (E-LAB Systeme). Wir klassifizierten die Zeitschienen dieser Systeme auf Basis von longitudinalen Daten mit drei übergreifenden Kategorien: Fortschritt, Stagnation und Regression. Die Krankenhäuser wurden in jeder Kategorie verglichen, unter Einsatz der longitudinalen ‚Data Envelopment Analysis‘ auf Basis der ‚Malmquist Total Factor Productivity‘ Messungen. Von allen Krankenhäusern, die einen Fortschritt verbuchen konnten, zeigten diejenigen Einrichtungen mit einer zu raschen Einführung der Systeme Beeinträchtigungen von Effizienz und Produktivität. Diese Krankenhäuser sahen sich gleichzeitig veränderten Rahmenbedingungen und der Einführung technologischer Tools gegenüber, die zu einem Leistungsverlust in Jahr der Implementierung und sowie im Jahr danach führten. Beim Vergleich der verschiedenen Ansätze taten Krankenhäuser gut daran, die stufenweise Einführung der eLAB Systeme zu erwägen, um diese Produktivitätsverluste abzumildern.



Die Evidenz-basierte Pflege

Von Susan M. Reese

Wir bewegen uns derzeit von einer standardisierten Patientenpflege hin zu einem Ansatz auf Basis von Qualität und Outcomes; dementsprechend ist es entscheidend, Vorgänge und Praktiken in der Patientenbetreuung zu identifizieren und neu zu bewerten. Gesundheitsorganisationen müssen die Stellenbesetzung und die Arbeitsstunden des Personals re-evaluieren, wobei die ‚safest practices‘ nach neuester Evidenz im Fokus stehen sollten, um für sowohl Patienten als auch Pflegepersonal die besten Ergebnisse zu erlangen. Die folgenden Evidenz-basierten Empfehlungen können sich po-

sitiv auf die Zufriedenheit von Patienten und Pflegepersonal auswirken und zudem Qualität und Sicherheit erhöhen.

- Kürzere Schichten
- Möglichkeit des Pflegepersonals, pünktlich zu Ende der Schicht den Arbeitsplatz verlassen zu können
- Weniger Überstunden
- Überstunden gerecht verteilen
- Persönliche Kenntnis der Arbeitskräfte, deren Terminplanung man durchführt
- Definition eines ‚skill mix‘ (Mischen unterschiedlicher Fähigkeiten) und diesen einhalten
- Unterschiedliche Erfahrungsniveaus bei jeder Schicht
- Bei Genehmigung von Schichtveränderungen auf ausreichende Ruheperioden zwischen den Schichten achten
- Entwicklung praktischer Richtlinien
- Überwachung der wichtigsten Leistungskennzahlen für Stellenbesetzung und Terminplanung



Berater für Informationssicherheit in Krankenhäusern: do-it-yourself oder auslagern?

Von Koen Claessens

Seit 1990 ist es bei der ‚Crossroads Bank of Social Security‘ in Belgien für alle Organisationen mit Zugang zur Bank rechtlich verpflichtend, einen Berater für Informationssicherheit zu ernennen. Aufgrund dieser Ernennung würden sie gemäß der Europäischen Datenschutz Richtlinien handeln. In der Praxis sehen sich jedoch viele Krankenhäuser außerstande, einen solchen Berater aufzutreiben beziehungsweise ihm eine aussagekräftige Jobbeschreibung zukommen zu lassen – aus gleich mehreren Gründen. Am 5. Juli 2011 entschied der gemeinsame sektorale Ausschuss für Soziale Sicherheit und Gesundheit in Belgien, Krankenhäusern ohne einen Berater nicht länger Zugang zu persönlichen Daten der Crossroads Bank und dem nationalen Register zu gewähren. Ein wichtiger Grund für diese Entscheidung war der zunehmende Einsatz von EDV in Krankenhäusern, vor allem bei Patientenakten und Datenaustausch, womit das Risiko eines unzureichenden Datenschutzes noch stärker erhöht wird.

Diese neue Richtlinie bereitet vielen Krankenhäusern Probleme. Erstens ist von Regierungsseite kein Budget für diese neue Anforderung vorgesehen. Zweitens haben Krankenhäuser häufig Schwierigkeiten, einen geeigneten Kandidaten zu finden – entweder innerhalb der Einrichtung oder über Rekrutierung –, der das dafür erforderliche Wissen und die nötige Motivation mitbringt; und zusätzlich verschärft wird die Situation dadurch, dass diese Person – um die Unabhängigkeit zu garantieren – womöglich nicht Teil der internen IT-Abteilung sein sollte. Eine mögliche Lösung ist das Auslagern. Sechs psychiatrische Krankenhäuser in Belgien arbeiten derzeit mit demselben Sicherheitsberater zusammen, da sie eine ähnliche Software einsetzen. Zwei andere Krankenhäuser setzen wiederum auf eine Strategie der ‚gegenseitigen Bereicherung‘: Der IT-Manager des Krankenhauses A ist der Sicherheitsberater in Krankenhaus B und umgekehrt.



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