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People

- LEADING THE WAY: CUTTING EDGE HUMAN RESOURCES
- WORKFORCE PLANNING, *A. LOVEGROVE*
- GREAT LEADERS EMBRACE CONFLICT, *S. JOHNSTON*
- EARLY HUMAN RESOURCES INVOLVEMENT IN M&A ESSENTIAL FOR SUCCESS, *F. ROEBROEK*
- PATIENTS MENTORING EXECUTIVES, *D. CRYER & C. DAVIS*
- CHALLENGING PARADIGMS, *A. SPIRO*
- LEARNING WITHOUT LIMITS, *M. LESTER*
- TEACHING ULTRASOUND IMAGING ONLINE, *J. VAN ZANDWIJK*
- *USA RADIOLOGY WORKFORCE, E. I. BLUTH*
- PURSUING A CULTURE OF SAFETY, *W. O. COOPER*
- APPRAISALS IN HEALTHCARE, *A. LAYLAND & N. LEENA*

GENDER MATTERS IN CARDIOLOGY, *A. MAAS*

COPING WITH COMPLEXITY, *M. MELLET*

HOW TO MAKE SENSE OF DIGITAL CHAOS, *J. L. GIRSCHICK*

AWARD-WINNING DIABETES CLINIC WITH VBHC APPROACH, *H. VEEZE*

GROUNDBREAKING PAIN

MANAGEMENT INITIATIVES IN EUROPE, *D. QUAGGIA*

THE RECERTIFICATION PROCESS OF A CHEST PAIN UNIT, *T. RASSAF & M. TOTZECK*

ECARDIOLOGY, *H. SANER*

HARMONISATION OF LAB MEDICINE ACROSS EUROPE, *D. HILMI*

CLINICAL LABORATORIES IN BRAZIL, *E. G. RIZZATTI & J. M. TSUTSUI*

MAKERSPACES, *O. BREUER*

THE NEED FOR CLINICAL AUDIT, *J. SCHILLEBEECKX*

NATIONAL TELERADIOLOGY SYSTEM OF TURKEY, *Ş. BIRINCI & M. ÜLGÜ*

TRUMP ON DRUGS: PART 2, *J. SALMON*

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People

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Despite that in general health spending is growing slowly, according to a recent OECD report European countries lag behind. Balancing the service demands against available resources is a key function of management. With increasing demand and reduction in resources it is meanwhile a real challenge for most of our European health colleagues to fill vacancies in order to maintain quality of care and patient safety with all these resource constraints.

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The important point here is that people make up healthcare but often the personnel and patient position is overlooked, increasingly, at the ultimate expense to the sector.

With all these issues in mind we have to ask ourselves, how can the patients' voice be heard? How can healthcare organisations manage employees' well-being and prevent burnout and what approach is needed when restructuring?

With human resources making up more than half of healthcare's costs, how best can we attract, recruit and retain staff and is working to the top of the license one answer to shortages?

In the 'People' Issue of HealthManagement.org we examine these questions while also putting new training methods, innovative mentoring and peer-to-peer appraisal in focus. This is fully in line with the main understanding of staff importance promoted by the European Association of Hospital Managers. You will find invitations to a few interesting workshops in this issue.

Andrew Lovegrove of Skills for Health comments on workforce planning with the need for sustainability and affordable, deliverable quality outcomes in focus.

Mark Lester at FutureLearn offers insights on what Massive Open Online Courses mean for healthcare professionals and organisations while the University of Twente shares its experience of implementing ultrasound education via this online platform.

Frank Roebroek of the HR Trend Institute weighs in with views on how to manage an M&A, an issue that is of increasing concern in healthcare as more organisations merge.

Navami Leena and Adam Layland form the Faculty of Health and Life Sciences at Coventry University examines whether traditional appraisal methods are suitable for healthcare personnel and HealthManagement.org rounds up some of the most innovative HR practices across all sectors that could inspire healthcare.

As well as 'People' matters, there's much more in this issue to inspire and give food for thought. Henk Veeze co-director of the 2017 Value Based Health Care Award-Winning Diabeter Clinic shares insights into how to build an 'Olympic Team' and succeed with the VBHC model and the issue of Lab Medicine harmonisation is covered as the European Union promotes a Common Training Framework.

Finally, Jack Salmon lays it on the line with his comments on price control in pharma under the new U.S. administration.

As always, we hope you enjoy this issue of HealthManagement.org.

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What Do You Think?

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GUEST AUTHORS

Dr Christophe Aveline
The TUBE Approach toPerioperative Point-of-Care ultra-sound, p. 234

Angela Maas, the Netherlands
Gender Matters in Cardiology, p. 184

Frank Roebroek, the Netherlands
Early Human Resources Involvement In M&A Essential For Success, p. 201

Şuayip Birinci, Mahir Ülgü, Turkey
National Teleradiology System of Turkey: Motivation, Technology, Realisation, and Beyond, p. 248

Rowland Illing
Porsches snd Motorbikes: Revamping Medical Leadership Training at Affidea, p. 216

Edgar Gil Rizzatti, Jeane Mike Tsutsui, Brazil
Clinical Laboratories in Brazil, p. 238

Edward I. Bluth, USA
Radiology Workforce Outlook for 2017, p. 211

Scott Johnston, Scotland
Great Leaders Embrace Conflict, p. 198

Jack Salmon, USA
Trump on Drugs: part 2, p. 252

Olaf Breuer, Portugal
Makerspaces: An Opportunity for the Future, p. 240

Marcel van Kasteel
New Philips Technology to Empower Emergency Departments, p.232

Hugo Saner, Switzerland
eCardiology: Bringing Industry and Clinical Practice Together, p. 230

William O. Cooper, USA
Pursuing a Culture of Safety: The Importance of Self-Regulation, p. 212

Adam Layland, Navami Leena, UK
Appraisals in Healthcare: Are Traditional Performance Appraisals Suitable for Healthcare Workers?, p. 218

Jan Schillebeeckx, Belgium
The Need for Clinical Audit, p. 244

Donna Cryer, Chip Davis, USA
Patients Mentoring Executives: Mutual Benefits, p. 202

Mark Lester, UK
Learning Without Limits: Massive Open Online Courses, p. 208

Alan Spiro, USA
Challenging Paradigms: Practising at the Top of Your Licence, p. 206

Gerry O'Dwyer, Ireland
The People, p.177

Andrew Lovegrove, UK
Workforce Planning – Can we Face the Future Without it?, p. 194

Henk Veeze, the Netherlands
Award-Winning Diabetes Clinic with VBHC Approach, p. 222

Judith Girschick, Austria
What it Takes to be a Leader in the Digital Age, p. 188

Mark Mellet, Ireland
Coping with Complexity, p. 186

Jordy van Zandwijk, the Netherlands
Teaching Ultrasound Imaging Online: The Educator's Viewpoint, p. 210

Mr. Andre Heinz
What Are the Keys to Attracting and Retaining Qualified Staff in Healthcare? p. 197

Daniela Quaggia, Italy
Groundbreaking Pain Management Initiatives in Europe, p. 224

Dalia Hilmi
Harmonisation Of Lab Medicine Across Europe, p. 236

Matthias Totzeck, Tienush Rassaf, Germany
The Recertification Process of a Chest Pain Unit, p. 226

TABLE OF CONTENTS

HealthManagement • Volume 17 • Issue 3 • 2017

GUEST EDITORIAL

SPOTLIGHT

POINT OF VIEW

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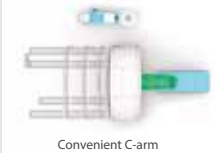

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TABLE OF CONTENTS

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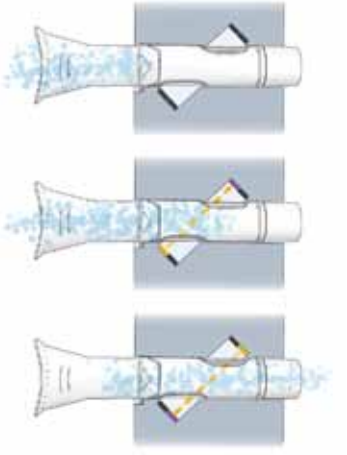

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The Art of Diagnostics

Gender Matters in Cardiology

Meet pioneering gynaecardiologist Angela Maas, who explains why there's still a lot to do when it comes to cardiovascular disease in women.

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Cardiovascular disease in women is an enduring passion for cardiologist Angela Maas, who has been a pioneer in Europe in this field. Prof. Maas started an outpatient cardiology clinic for women in 2003 and founded the Heart for Women Research Fund in 2014. She is co-founder of the gender working group of the Dutch society of cardiology. She has written and researched widely on cardiovascular disease in women, and is co-editor of the *Manual of Gynecardiology: female-specific cardiology*, published by Springer in 2017.

What are the most important female-specific risk factors for cardiovascular disease?

Specific risk factors only present in women relate to hormonal status and pregnancy: pre-eclampsia and hypertensive pregnancy disorders. Pre-eclampsia has been incorporated in the European Society of Cardiology cardiovascular prevention guidelines (Piepoli et al. 2016), but still many cardiologists and primary care physicians never ask about it and they neglect this important risk factor, which leads to hypertension at a young age.

You have written that the heart may be considered 'the victim of success' of modern breast cancer therapy (Maas et al. 2016). Please explain.

Due to good oncology therapy, the breast cancer mortality rate has declined enormously over the past 20-25 years. Around 4% of women who get breast cancer will die of it. However, due to modern chemotherapy such as trastuzumab the damage done to the myocardium and the vessels is increasing. There are many women who after ten years of breast cancer therapy get severe heart failure and may even die of it. We successfully treat the breast cancer, but we get more cardiovascular disease —heart failure and hypertension.

Doctors focus on breast cancer recurrence risk and forget about the rise in cardiovascular risk that occurs with ageing and the potential damage from cancer therapies. After breast cancer therapy many women complain of tiredness and fatigue, which may be caused by hypertension for instance, but doctors think it is due to previous breast cancer.

For women diagnosed with breast cancer, how can oncologists and cardiologists work together to protect the heart?

At the moment it is quite difficult. I have talked about this with national and international colleagues, and one important factor is the difference in culture of the different specialisms. We are not used to working together in this way. Oncologists are very focused on curing cancer and avoiding recurrence, and cardiologists are looking at other issues. Oncologists are also a bit afraid that cardiologists may disturb their treatments. We have to identify earlier which women are at higher risk of getting damage from breast cancer therapy. These are elderly women who perhaps have a history of cardiovascular disease and the women who get very severe oncology treatment. We should fine-tune our efforts for individual patients, and see to what extent it is necessary to work together more for each individual patient, and provide more specific and tailored therapy for the individual woman.

What are the best imaging tools to evaluate the heart in breast cancer patients?

In cardiology we have developed more advanced imaging techniques over the past few years. In echo we now have strain techniques, which are more time-consuming but better able to identify early damage of the heart. Magnetic resonance imaging (MRI) also takes more time, but if you can differentiate and send high-risk women for an MRI, you may see the first signs of cardiovascular damage and start treatment earlier than we do nowadays. With better echo and MRI techniques we can see early signs of damage. We need to use these techniques for the women who are at highest risk.

Are women perhaps more aware of risk factors for breast cancer than they are about cardiovascular disease risk factors?

They are. Most women will say breast cancer is their greatest risk, but it's cardiovascular disease. It is so important, and it's sometimes difficult to get women motivated to take pills for high blood pressure for example, because they say to themselves that it's stress, they were too busy, it will pass. It is difficult to convince women that they need to be treated.

You recommend a multidisciplinary and life-course approach to cardiovascular disease risk assessment in women (Maas and Leiner 2016). What is the ideal?

In healthcare, we are used to looking in a sort of vertical way; every specialist looks inside their discipline. But the life course of a person may have consequences for the future. For instance, if women have suffered from migraines at a young age they will be at high risk of having hypertensive pregnancy disorder, then subsequently at higher risk to have microvascular coronary disease or premature hypertension when they are in their fifties. Health events that happen in the past need to be taken into account when we consider an individual patient and we forget that. To optimise patient care we should look more at the whole picture of the individual.

> "TO OPTIMISE PATIENT CARE WE SHOULD LOOK MORE AT THE WHOLE PICTURE OF THE INDIVIDUAL"

Is there enough research into gender differences in cardiovascular medicine?

I think gender differences are important. It is something we need to look at more, because we have to differentiate in our guidelines. For example, for atrial fibrillation, we have different advice for men and women, and women have anticoagulant therapy at an earlier stage. There are still many guidelines that do not apply the gender differences we have already identified. For instance, there are very different types of acute coronary syndromes in women compared to men, but women are still considered by diagnostic and treatment standards for males. For example, one type of acute coronary syndrome we see very often in young women is coronary artery dissection, especially when women are in their 40s and 50s; we see it more and more related to stress. Men and women act differently on stress factors, so there are so many aspects of risk and manifestations of underlying disease that we need to fine tune in our guidelines and clinical practice.

There is so much knowledge already but we just don't use it. To address this knowledge gap, just published is *Manual of Gynecardiology*, which I co-edited with U.S. cardiologist, C. Noel Bairey Merz (Maas and Bairey Merz 2017). It includes contributions from the editors and from outstanding colleagues from Europe. It is a handbook with patient cases aimed at tackling the issues of gender difference in clinical practice. For example, if you have a woman with symptoms of angina for instance, they have the diagnostic workups along the male standard, which doesn't fit. It didn't fit 35 years ago when I started, but we still behave like that. This is a waste of money, and I see so many women for second opinions, who have been treated badly because there is lack of knowledge in current cardiology.

Not all women are the same, not all men are the same, so we should stop comparing apples and pears, but have a look at who is the high-risk patient—the man, the woman or the age group. This century is more for personalised medicine, but we don't use it very well.

You started an outpatient cardiology practice for women in 2003. Why did you start this? What were the challenges?

I was motivated to do it when I attended the first world conference on heart disease in women in Victoria, Canada in 2000. It was fascinating to meet so many people from Canada and the United States, who were already involved in female heart centres, and I wanted to start this in the Netherlands. At the time I worked in a large cardiology practice, where I was the only woman with 15 male colleagues. I decided to start an outpatient clinic for women to get a better look at high- and low-risk women and to learn more. The cardiologists and primary care physicians said it was a crazy idea and would stop in a year's time and be a disaster. I received hate letters and phone calls. There were a lot of forces against doing this, but I have quite a strong character and after a few years it went very well. As a result I was appointed Professor of Women's Cardiac Health in 2012. It was very unpleasant in the beginning—this is the fate of people who are a pioneer in any specialism. But in the end you are rewarded and in April I was awarded Officer in the Order of Orange Nassau in the Dutch royal honours. ■

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Coping with Complexity

The Irish military on embracing leadership that promotes diversity, inclusion and reflection.

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We live in a time of extraordinary change and complexity. This impacts on individuals, as well as the communities, organisations and institutions to which they belong. In examining the interlinkages between values, complexity, innovation and diversity, this reflection looks at the implications for leaders. These perspectives, while somewhat shaped by my military and academic experiences, have a broader relevance.

In democracies, militaries are key components of the security architecture. They are part of the bedrock which underpins sovereignty, contributing to a framework for civil society. Civil society institutions, built on shared values, are a human right, where people are free, the institutions of state function and where the vulnerable are protected. All over the world we see challenges to the shared values of civil society. Many have the characteristics of 'wicked problems', with extraordinary complexity, they may have multiple causes, crosscutting political, economic, societal/cultural and other perspectives (Rittel, Webber, 1973). They include, interstate and intrastate, hybrid and proxy wars, state competition, cyber warfare, terrorism and criminality. Other vectors like population increase and climate change feed this complexity. This challenges governance at international and national levels, as well as the nested arrangements for corporations, organisations and institutions, right down to individual interactions.

Positives which potentially mitigate the effects of complexity include the growth in technology, automation, robotics and perhaps the most exciting of all, the explosion in data. Data when codified becomes information with the potential to drive the creation of knowledge, which ultimately leads to greater understanding. The potential is such that Kurzweil, predicts a "singularity" around 2040 when artificial intelligence will exceed human intelligence (Kurzweil 2005).

Two things are clear. Firstly, if available data is properly leveraged, risk is mitigated and the prospect of an advantage is enhanced relative to competitors or enemies. Secondly, this growing pool of data, feeding knowledge, is driving new technologies and new ways of doing things worldwide. Consequently, while answers to complex problems exist, they may often lie outside organisational or indeed state boundaries. Creating the appropriate governance arrangements, conditions and structures to deal with this complexity requires wisdom.

Knowledge is a prerequisite for understanding and it is the application of understanding within the framework of shared values that leads to wisdom. In this world of complexity the absence of values and therefore wisdom undermines the institutions of civil society, often resulting in populism, unilateralism, short-termism and selfishness. Shared values are the glue that bind states, organisations, institutions, and individuals together. In a world of increasing complexity this is why striving for multilateralism with shared goals is so important.

At an organisational level achieving congruence in the interplay between knowledge, understanding, values and wisdom requires innovation. Innovation is not just about creativity; it is a systematic change in individual mindset and culture that permeates entire organisations with internal and external dimensions. The world of complexity requires shifting from operating solely inside closed organisational boundaries, to open innovative structures, where creativity and knowledge-sharing is encouraged and nurtured. Open innovation is innovating with others through networks that facilitate the exchange of data, information, knowledge and understanding, where sensing and exploring new technologies and ways of doing things is facilitated and actively encouraged.

The more diversity stimulated in networks, the more potentially disruptive the innovation will be. Moving towards an innovation ecosystem, incorporating for example, state bodies, enterprise, academia and civil society actors, can lead to disruptive innovation. Networks leading to codified partnerships allow researchers to get a real world problem, the state body to get a new capability or technology and enterprise to generate jobs, while civil society benefits from an improved public good.

The collaborative arrangements between the Irish Defence Forces and Higher Education Institutes and other partners have delivered significant impacts. These innovation networks and partnerships are helping transform our force, enhancing personnel and capability development, driving enterprise, job creation, infrastructural development and new technologies. These collaborations are shifting partnership perspectives from being just cost centres towards investment centres with the potential for elements to be profit centres. The crucial driver and enabler to this process is leadership, while key prerequisites for such outcomes are shared values and principles. One of the fundamental principles for collaboration is trustworthiness. Trustworthiness is more than trust, where partners are worthy of the trust bestowed upon them. It is inextricably linked with the principle of reciprocity. Achieving congruence with multiple diverse partners and preventing free riding requires strong leadership.

Driving innovation necessitates that the status quo

is challenged, that cultures are open and inclusive, that there is no room for egos and, importantly, that there is an acceptance that mistakes will happen. Driving innovation requires silos to be broken down and cross-cutting structures embraced. Silo mentalities undermine trust, efficiency and effectiveness and prevent the exchange of knowledge. Violations, which are unacceptable breaches of the rules, must be distinguished from errors or mistakes that will inevitably occur in complex dynamics.

In terms of organisational dynamics, driving diversity and inclusion is important. Spanning external and internal diversity requires an appreciation of the importance of science, technology, engineering, arts and mathematics. This has implications for organisational and people development. Investing in work-based learning and raising the scholarly standing facilitates diversity and inclusion. Training prepares for the predictable, while education prepares for the unpredictable scenarios, when a greater understanding of other perspectives is required.

Facilitating 'cross-cutting' structures requires highly-developed, receptive interpersonal skills which nurture and build collaborative networks and partnerships. Arts, encompassing the social and political sciences, enhance the knowledge that builds and connects institutions, organisations and people.

The future is about how collaboration and knowledge sharing is achieved, where ego is the enemy and empathy is the kingmaker. Einstein is credited with saying ego=1/knowledge (Quotes 2017) the greater the knowledge, the lesser the ego. Bringing together diverse disciplines requires that an atmosphere of tolerance, which understands different perspectives, is nurtured, where the humanities mix with the sciences. The philosopher Theodore Zeldin has asked 'When will we make the same breakthroughs in the way we treat each other as we have made in technology' (Gurteen 2017). Quite often diversity requires institutionalising a Gender Perspective. That is organisations, have the ability to detect if and when an individual is being treated differently, based solely on their gender. An institutionalised gender perspective analyses a persons perceived value in a given context, their access to power, influence and resources and mitigates against societal inequalities and unconscious bias. Improvement in gender balance at all levels facilitates better decision-making and creative processes. Achieving greater gender balance is a societal issue. Studies show how women, for example, in many countries are socialised from a young age to fulfill certain stereotypical 'feminine' roles such as caregivers and not to opt for careers such as in STEM and indeed, the military. Conversely, the socialisation of our young males, predisposes them to more 'masculine' pursuits.

Developing a diversity and inclusion strategy in all organisations, one which promotes equality, values, difference, and embraces LGBTA and other communities is vital. Embracing diversity across perspectives such as culture, ethnicity, creed and generation is critical. Diversity and inclusion in all networks improves resilience and becomes an antidote for complexity.

In summary, dealing with complexity is a leadership issue. Leadership in government, market and civil society institutions, driving innovative multilateral arrangements can mitigate the effects of climate change and other challenges by progressing, for example, the UN 17 Sustainable Development Goals (United Nations 2016). Thirty years on from the Brundtland Commission Report (United Nations 1987), these goals and targets present a strategic roadmap towards normalising sustainability. Empowering innovation and dealing with the 'Push Back', is a leadership issue. Institutionalising a 'Gender Perspective' and embracing diversity and inclusion are all leadership issues. Leadership is about values - values such as the moral courage to do the right thing and the physical courage to persevere despite danger and adversity. It is also about a respect that treats others as they should be treated while giving sufficient autonomy to people to reach their full potential. Values encompass an integrity characterised by honesty, sincerity and reliability. Fostering and creating an environment of loyalty which encourages selflessness while putting service before individualism is important. Values, importantly, are also about accountability (Personal Communication July 2017).

A diverse, inclusive, reflective organisation characterised by strategic humility, will ensure the benefits of innovation are fully realised. It will attract the best of talent, facilitate employee voice and autonomy, driving improved performance and outcomes.

Leadership, like innovation, is also about accepting risk-taking and mistakes. Von Clausewitz said in war 'everything is simple, but even the simplest thing is difficult' (Von Clausewitz 1873). In a world of complexity inevitably mistakes will happen, but mistakes drive learning. Therefore be comforted by the words of George Bernard Shaw who said 'a life spent making mistakes is not only more honourable but more useful than a life spent doing nothing' (Shaw 1906). ■

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How to Make Sense of Digital Chaos

What it Takes to be a Leader in the Digital Age

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In a world of fierce competition, digital projects have become an omnipresent challenge. While 75% of all businesses will be digital businesses or preparing to become one by 2020, software will disrupt virtually all traditional industries. In the face of a global economy that is in a state of flux, instability has become the new norm. The change that comes along with this is not only non-linear, it has become exponential (Pemberton Levy 2016; Lopez 2014; Brynjolfsson and McAfee 2014).

The need to cope with these challenges has made managing organisations more complex than ever before. Companies can no longer rely on traditional ways of doing business. In order to stay competitive, they must use digital technology to improve not only the reach, but also the performance of organisations.

Digitisation in Healthcare

Digital disruption does not stop at the doors of the healthcare sector. The abundance of medical and health-related information on the internet has already led to a rise in patient engagement. Mobile digital applications allow to look for biomarkers indicating patients´ state of health and the monitoring of vital statistics. Other apps will be in place to remind patients to take their medication regularly. These developments pave the way for healthcare companies to shift away from just curing illnesses to keeping people healthy.

In parallel, artificial intelligence applications are on the rise. These new software programmes will make it easier for healthcare providers to effectively analyse patient data. They will be able to predict the necessity of surgery, monitor and guide surgery and ultimately apply insights from big data to individual patients.

Another trend that can be spotted is that the contact between doctor and patient will be increasingly filtered by digital communication and relevant software solutions. Parallel to that it will be necessary to keep up with the growing amount of data that is produced by storing ever more information on individual patients´ developments. An ageing population and the growth of chronic diseases will further spur the development of this field of telemedicine.

Digital: No Longer an IT Buzzword

All these developments not only reflect a changing relationship with patients, they also result in substantial changes within healthcare organisations. Against this background, healthcare executives at all levels must come to terms with one fact: the disruption caused by an ever-shifting technology landscape will not stop at their industries´ doorsteps. The term "digital" is therefore no longer only an IT buzzword for healthcare professionals.

Today, more processes than ever are defined by technology. To drive and develop digital initiatives in patient care, diagnostics and communication, appropriate IT systems are put into place. Based on the vast amount of resulting records, big data and data analytics help to enhance patient service and patient experience.

> "MANY PROFESSIONALS ARE HAUNTED BY THE SENSATION OF BEING A PUPPY DOG ON LEASHES BELONGING TO MANY DIFFERENT OWNERS"

The overall advantages of the internet and its technical opportunities are undisputed: through search engines we have all gained easy and rapid access to healthcare information. Email, text messaging and voice-over IP has made communication faster and more affordable than ever before. And most healthcare professionals will find clear advantages in being able to communicate with patients and take part in consultations without the need to travel and be present in person.

But while healthcare organisations quantitatively profit from new processes and efficiency, they often turn a blind eye to the human aspect of moving faster and with ever more automation. New digital practices trigger new priorities and sentiments in the world of work. More generally, they inflict profound changes in the human experience.

The Human Experience

Healthcare professionals spend much of their days administering and filling in electronic forms for the sake of measuring, evaluating and comparing the efficiency of their work hours. The rest of the time they feel bombarded with emails and text messages by bosses, colleagues and reports, even on weekends. In having to adapt to ever new and rigid IT-driven processes,

countless employees as well as executives are left feeling estranged. Many professionals are haunted by the sensation of being a puppy dog on leashes belonging to many different owners. They feel torn between the responsibilities they have towards patients and the excessive demands of digital administration. Automation takes a toll on them, leaving them with a feeling of being overstretched and overwhelmed.

Functioning in a good way in digitally defined surroundings has become a challenge. In order to stay on top of these developments, both healthcare leaders and professionals not only have to become technology savvy, but also need to be creative and resilient enough to cope with the new complexities at hand.

For healthcare organisations to thrive in the new digital landscape, it is therefore important to further optimise technological processes. To fortify their ships for stormy seas, they need to bring out the best in their people; in other words, they need to bring back the human dimension into their organisations.

Structural Adjustments

To be able to lead, innovate effectively and improve organisational performance, leaders must remain confident and resilient amid chaos. In order to do so, they should take into account the following aspects:

Recognise the risk of disruption and the opportunity of digital

Leaders must recognise the necessity of entering uncharted territories. Reinventing structures and processes may be key to survival. Planned disruption may mean disrupting the organisation from within before the market will do so. Rethinking and possibly reinventing long-established processes, may be done by exploring new revenue streams and processes. The goal of this will always be to create value for all stakeholders involved and to boost competitiveness. This awareness must be shared by boards and executives alike. At the same time, they need to acknowledge that taking advantage of the opportunities that digital creates, takes not only vision, but also the stamina to do so.

Embrace and cope with complexity

While the use of digital may be great for enhancing productivity, customer service and revenue, a holistic view of the possibilities of digital transformation will offer perspective from a wider lens. In order to effectively face complexity, it is important to challenge long held assumptions and ideas about risk and uncertainty. While leaders should respect and stay aware of their core principles, they must realise that processes that have worked in the past may not do so in the future. In other words, leaders need to stay agile. They need to think flexibly, learn fast and take risks. They must share new ideas before they are perfectly formulated, then discuss, reflect and execute swiftly.

Prioritise: Define where change is needed most

In order to be a successful health leader in the digital landscape, being technology savvy is not enough. Often the problem of digital initiatives is that they are uncoordinated and ad hoc. A good initiative may fail because it does not get the necessary attention and funding. In order to add steam to such projects, it is necessary for the leader to decide where change is needed most. She/he must set priorities, link the different projects and give them direction. This needs to be communicated and put into practice throughout the entire organisation (Baculard 2017).

Empower

Against the background of rigid automation, leaders need to keep employees engaged. In order to do so, they have to be able to create meaning. At the same time, they have to inspire and empower their people to accept and make the most of new developments. It should be understood that technology does not function purely because of the work that people put in to make that happen, but rather as a solid tool to make lives easier. With this in mind, a proper understanding of digital must be distributed across the organisation.

In parallel, management has to accept that traditional hierarchical distribution of information will often prove unsustainable. Successful transformative projects breed better in connected organisations. They are the result of perfect orchestration of all members of the project. Successful change profits from contributions by everyone involved. In order to give each team member the opportunity to contribute, they need access to the right data. If this access is granted effectively, digitalisation will gain the support of more members from the organisation. It will facilitate a greater level of cooperation across the whole organisation and drive sustained teamwork as an integral part of organisational culture.

Retain Self-Efficacy

In order to function successfully, leaders as well as employees need to retain the belief that they are capable of organising and executing the processes needed to attain the required levels of performance (Bandura 1997). It is therefore essential that digital technologies are used and perceived as the right help to master a challenge rather than a threat to be avoided. If new technologies fail to guarantee this, their use will result in individuals' lowered self-efficacy. They will likely abandon goals if they prove too difficult to achieve. Correspondingly, they will be reluctant to take responsibility for difficult tasks

(Bandura 1994). In other words, badly implemented digital processes may produce leaders who are no longer able to reach the desired performance goals. By thus presenting new technologies as facilitators rather than threats, digital transformation will not be seen as a catastrophe, but rather a wealth of opportunity.

Improving Digital Leadership Skills on an Individual Level

Typically, digitally-driven projects mirror purely rational chains of thoughts. They are designed to enable processes that are the result of efficiency-driven ideas and rationalisations. However, people who are expected to make use of the digital solutions once they are implemented, hardly ever function in accordance with the idea of the rational man (Kahnemann 2011), nor are they carved from the digits 0 and 1. Still, business requirements have to be met and employees are expected to perform accordingly.

Leaders should be mindful of this gap and realise that in the digital age, a purely functional management style will often fail to produce the desired results. In order to get the best out of people, executives need leadership skills that enable them to rise above a merely functional perspective.

Leadership Coaching to Successfully Master Digital Disruption

Years of experience in leadership coaching show that leaders are typically well aware of their roles and the responsibilities that come with them. Nevertheless, many executives are plagued by insecurities and a sense of anxiety. They ruminate over whether they are good enough to face the challenges the digital world imposes on them. Under this stress, their behaviour becomes dysfunctional. Moreover, they are often not clear about the effects of their behaviour on peers and subordinates. In order to prevent this from happening, leaders can be accompanied by dedicated leadership coaching and management development programmes. Studies show that companies that make use of executive coaching, will perform better than their competition (Kets de Vries 2016).

Tailor-made leadership coaching sessions successfully support executives in going through the shift in how business is conducted and organisations are managed. The goal is to adopt leadership behaviour that fosters the ability to motivate and collaborate. Experienced leadership coaches provide guidance for managers to know themselves and their motives better. Based on this realisation they learn to cope with stressful experiences more successfully. As a result, they learn to give their best to others and create meaning among employees, even in demanding times. They will manage their organisations more dynamically and distribute a spirit of motivation throughout their organisations.

Conclusion

Organisations that take into account these aspects of digital leadership will not only succeed in leveraging and advancing new opportunities in healthcare, but their leaders will thrive on change and become experts in unlocking human potential. As a result, they will make the most of their digital projects and keep customers, employees and shareholders happy and engaged. Empowered leaders will proactively adapt to new challenges, even in the face of uncertainty. ■

KEY POINTS

- ✓ New digital practices in healthcare inflict profound changes in the human experience
- ✓ The human dimension of large technology driven organisations is neglected and needs to be addressed
- ✓ The important role leadership coaching can play when executives need to master the challenges that digital disruption imposes on them
- ✓ Healthcare leaders need to stay agile, and share new ideas before they are perfectly formulated, then discuss, reflect and execute swiftly
- ✓ Presenting new technologies as facilitators rather than threats, digital transformation will not be seen as a catastrophe, but rather a wealth of opportunity

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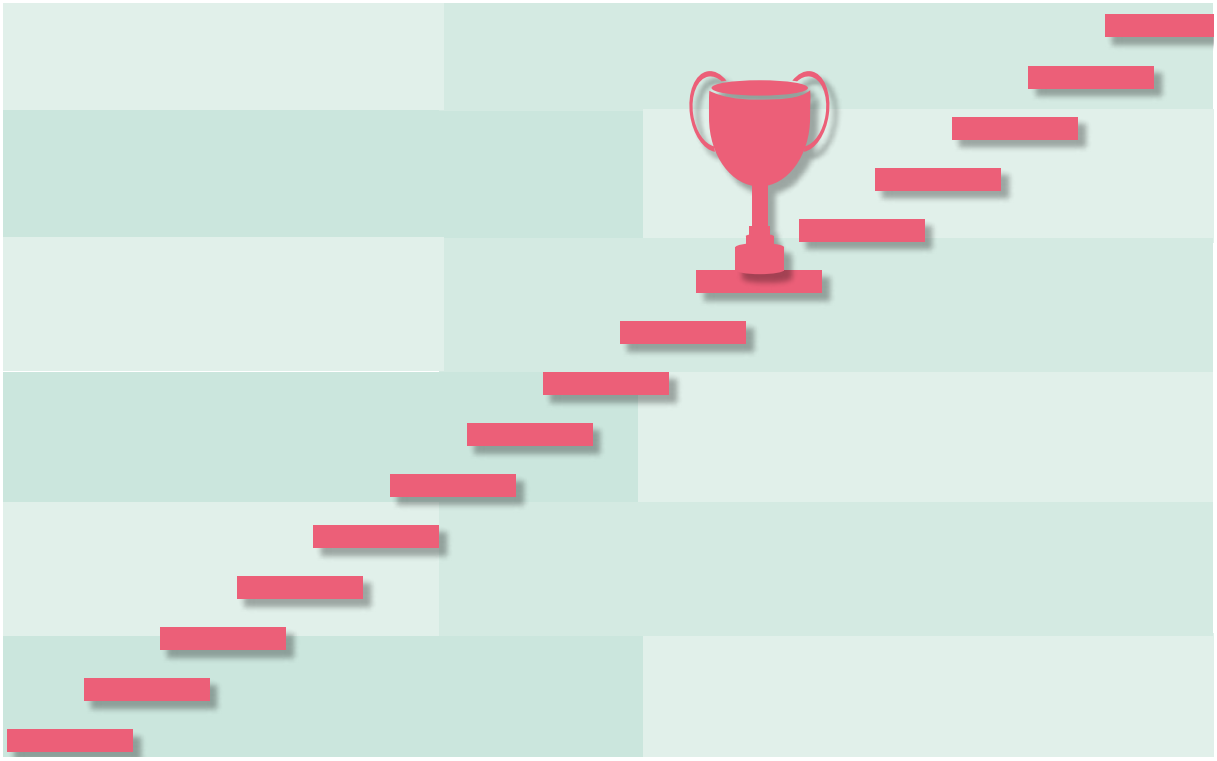
Leading the Way: Cutting Edge Human Resources

A Human Resources (HR) department that continuously looks at ways to foster satisfaction for personnel reaps the rewards of innovation and productivity. HealthManagement.org puts some top HR approaches in the spotlight.



Long gone are the days of a deep divide between management and personnel. Human Resources (HR) practice now offers as many ways of motivating staff and encouraging creativity and productivity as there are companies. Much innovation has been taking place outside the healthcare sector as well as within with HR departments receiving recognition for practices that create a win-win environment for staff and management. HealthManagement.org has selected some of the most inspiring examples of HR innovation and efficiency across a range of sectors.

Credibility: Mayo Clinic

Regularly in top HR rankings, Mayo Clinic is a fine example of healthcare motivating its 60, 000 staff to achieve the best results for patients and their families.

It does this through on-the-job-training, effective internal communication and, critically, ongoing management credibility and reliability.

Staff confidence is developed so that they can face any scenario at work and are recognised for efforts.

Technology: Ford

Automobile company Ford is renowned for its innovative HR initiatives which include top-tier training opportunities and a very disciplined company culture supported by strong data-backed processes.

Application programming interfaces (APIs) manage talent in tandem with a changing global business environment. Additionally, a tech platform that offers insights

into the skills and ambitions of their 60,000-strong workforce enhances long-term planning.

"People-Service-Profit": FedEx

When it comes to HR, courier firm FedEx has led the way for years. It was one of the first companies to implement a formal HR policy that saw how employees contributed to growth and profitability.

> "MUCH INNOVATION HAS BEEN TAKING PLACE OUTSIDE THE HEALTHCARE SECTOR"

The philosophy of the company is based on the belief: "People-Service-Profit" with all management decisions rooted in this perspective. Staff input has always been encouraged for problem-solving and the annual "Survey Feedback Action" programme sees employees offering feedback on management policies. The completed survey is reviewed by staff and management who meet to resolve any potential problems made evident by the feedback.

An Open Mind: Prudential

Insurance company Prudential boasts low staff turnover and absenteeism with success attributed to transparency in its HR approach.

The ups and downs, challenges and successes of the company's history are shared with every single staff member and it has a flexible approach to HR processes, welcoming change and innovation when necessary.

Happy Staff: Google

Routinely ranked amongst the best companies to work for, Google recognises the value in keeping staff happy for the optimum creativity and productivity that keeps it at the forefront of Internet services.

Its California HQs offer a sports complex, wellness centres, hockey rinks and subsidised massage.

Along with its business status, this HR approach helps the company attract top talent from around the world.

Communication: Marks and Spencer

As far as much-loved global retailer Marks and Spencer is concerned, there is no such thing as too much communication.

This tenet is at the backbone of its award-winning success in HR and staff treatment with employees the first to say that regular communication is key to making the company a desirable place to work. Regular contact amongst employees and between staff and management create an atmosphere of motivating transparency.

"Work Hard, Play Hard": LinkedIn

HR innovation and teamwork is what has set professional online networking company LinkedIn apart from its competitors as a great place to work for years.

Working around the motto "Work hard, play hard", HR holds regular parties with live music and a nightclub vibe for all personnel in reward for staff work and dedication.

Once a month, the firm holds an 'InDay' when staff set day-to-day work aside and look into new ideas, supporting innovation and creativity. Staff turnover is routinely less than 8% and promotions are at a high.

Balance: Brigham and Women's Hospital

Praised for its efforts to encourage a work-life balance for personnel, Harvard Medical School teaching affiliate, Brigham and Women's Hospital, has family in focus.

The facility offers strong childcare, including care for emergencies, for working mothers and fathers as well as eldercare services for staff taking care of ageing parents. Subsidised tuition is also available for staff who earn below a set salary threshold.

The aim to decrease staff stress has earned the hospital HR accolades. ■

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Workforce Planning

Can We Face the Future Without It?

Workforce planning aims to create a sustainable workforce that is centred around patient need, provides quality outcomes and is both deliverable and affordable.

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The health sector in the UK employs almost 2.3 million people (Labour Force Survey 2016), and workforce spend accounts for an estimated 70% of the National Health Service (NHS) healthcare budget (NHS England 2014). Employers in the UK and in Europe are faced with financial challenges, increasing demands being put upon services from people living longer with more complex conditions, the development of new technologies and new drug therapies. It is now more important than ever that organisations analyse how they are using their workforce and ensure that they use that workforce in the most effective and efficient way to provide good quality healthcare.

Workforce plans are required to ensure that people with the right skills, competencies and behaviours are able to meet patient needs both now and in the future. The overarching aims should be focused on creating a sustainable workforce that is centred around patient need, provides quality outcomes and is both deliverable and affordable.

At Skills for Health, we have a proven track record of working with employers to review their workforce planning processes and support them to develop operational and strategic workforce plans. Plans are developed working in partnership with a range of personnel across organisations, including a diverse mix of clinical staff, finance, learning and development and human resources professionals.

Planning for Service Sustainability

Over the last 18 months Skills for Health has worked with a number of organisations to develop robust

workforce plans and is well placed to help the health sector (and beyond) with developing robust plans to ensure service sustainability for now and the future. These have included:

1. Working with Oxford University Hospitals Foundation NHS Trust (OUH) to review its workforce planning processes and support them to develop divisional level workforce plans and a strategic five-year organisational workforce plan. For the first time ever, OUH have a workforce plan that is linked to service development, is based upon evidence of best practice in workforce utilisation and provides a clear rationale for change linking with their financial projections and assumptions. A key outcome of the work was building capacity and capability within OUH in order that they could build on the current plans to develop and embed workforce planning into their business planning cycle year on year.

> “WORKFORCE PLANS ENSURE THAT PEOPLE WITH THE RIGHT SKILLS, COMPETENCIES AND BEHAVIOURS ARE ABLE TO MEET PATIENT NEEDS NOW AND IN THE FUTURE”

2. Working with States of Jersey-Health and Social Services Department (HSSD) to develop a strategic workforce plan for its entire health and social care economy in light of substantial shifts in service provision from acute hospitals to primary and community care. This work also developed operational workforce plans for every service area and has clearly articulated scenarios and new ways of working that will ensure effective delivery of services for the future. The work has also supported the outline business case for a brand new acute hospital facility, and this demonstrates that Skills for Health’s ways of working support capital planning and investment decisions for major projects.
3. Working with Bath and North East Somerset (BANES) Enhanced Medical Services+ and the 27 GP Practices within Bath & North East Somerset to develop a comprehensive workforce development initiative aimed at supporting the sustainability of general practice given the major challenges being faced. The work focused on identifying, alongside practices, key workforce priorities, which were felt could have maximum impact within the locality. As a result five areas were developed in detail (including sharing back office functions, increasing the supply of practice nurses, and freeing up clinical staff time through development of a personal assistant role), which provided practices with a comprehensive set of tools, resources and guides, which are supporting workforce change within primary care.
4. Working with Health Education West Midlands to develop strategic workforce frameworks for integrated working across five health and social care local economies. The work used a ‘scenario planning’ approach, which challenged stakeholders to explore, using a set of ‘possible futures’ and population analysis, how both services and the workforce would need to change to support integrated working in the future. As a result of the process, each locality has been provided with a set of strategic workforce priorities, linked to key actions, which will form the basis of future planning for an integrated workforce across the West Midlands.

Six Steps Methodology to Integrated Workforce Planning

At Skills for Health, we use the *Six Steps Methodology to Integrated Workforce Planning* as a means to develop a comprehensive and integrated workforce plan for a clinical pathway, organisation, individual service (clinical or non-clinical) or team (Skills for Health n.d.). Our *Six Steps Methodology to Integrated Workforce Planning* is a practical approach to planning that ensures you have a workforce of the right size with the right skills and competencies.

The Methodology identifies those elements that should be in any workforce plan, taking into account current and future demand for services, the local demographic situation and the impact on other services, whilst helping you work to the budget you can afford.

The Six Steps Methodology offers:

- a systematic practical approach that supports the delivery of quality patient care, productivity and efficiency
- assurance that workforce planning decisions taken are sustainable and realistic
- a scalable approach, from small ward-based plans to large organisations
- a joined-up approach with social care, where the same approach has been adopted

The Six Steps Methodology is based on:

- defining the plan
- mapping out the service changes needed in

response to demography, epidemiology and organisational priorities
- defining the workforce required to meet patient needs in the future
- exploring how to maintain an effective workforce supply
- action planning
- implementation, monitoring and review

The model integrates finance and service planning and incorporates evidence of best practice, the use of workforce data, national and international benchmarks, available tools and professional judgement.

> “WORKFORCE PLANS PROVIDE THE MEANS TO SYSTEMATICALLY IDENTIFY PRIORITY AREAS OF SKILLS DEVELOPMENT REQUIRED TO MEET THOSE CHANGING NEEDS”

Workforce planning can be scaled to whatever the need be: strategic; looking at how health economies plan their future, or scaled down for specific services or teams at a more localised level.

A key element of effective workforce planning is a review of how roles are used now and how existing and new roles can be used in the future to improve productivity, efficiency and service quality. A key element of Skills for Health’s approach to workforce planning aims to:
- alleviate recruitment issues and supply shortages
- create additional workforce capacity
- develop attractive and interesting roles and careers to support retention
- improve patient outcomes
- improve workforce utilisation, by ensuring staff with higher level skills have the time to undertake the most complex activities

The Six Steps recognise not only the importance of the design of the workforce for the future but also the importance of the development of the current workforce. Sixty percent of the workforce that are employed now will still be employed in the healthcare sector in 10 years’ time, so it’s crucial we recognise them as a valuable asset, investing in their development so they can adapt according to changing needs. Workforce plans provide the means to systematically identify priority areas of skills development required to meet those changing needs.

The Six Steps methodology gives those who are using it the ability to:
- integrate finance, service and workforce planning and help to prevent silo thinking and planning
- ensure decisions that are taken are based on evidence and information
- ensure workforce decisions will meet service needs and that the workforce can be delivered in an affordable manner
- ensure workforce sustainability by examining workforce supply issues
- encourage innovative thinking and prompt individuals to question and not to accept the status quo as a default
- focus on what is needed rather than what we currently have or want
- consider how best to meet the needs of a service
- enable consistency across services, divisions, organisations, pathways—a common language
- use straightforward terminology—doesn’t rely on ‘expert’ terminology
- provide for better communication and dialogue between those who are providing services on a day-to-day basis and those who are responsible for senior operational and strategic management

No-one can foresee the future, but more effective integrated workforce planning puts us in a much better place to respond to the challenges the healthcare workforce faces now and in the future.

Skills for Health is well placed to work with all types of organisations around the important subject of workforce planning and its approach and methodology can be shaped to support the needs of all.

Six Steps lies at the very core of what we do as an organisation and we stand ready to support all sectors improve their workforce planning to meet the needs of tomorrow.

Further Information

For further information on the six steps methodology, please email alexis.kalmar@skillsforhealth.org.uk or visit **skillsforhealth.org.uk** . ■

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What Are the Keys to Attracting and Retaining Qualified Staff in Healthcare?

For the CEO's of many organisations in the healthcare industry, attracting and retaining talent is the key strategic challenge, as discovered in a 2017 survey sponsored by Siemens Healthineers. Organisations face the dual challenge of how they should respond to the need for significant efficiency gains and simultaneously be an attractive employer in a competitive labour market.

Fuelled by demographic trends, the demand for healthcare grows and with it, the cost burden for economies across the globe. This leads to increasing pressure on operators of healthcare facilities to provide higher patient outcome at lower cost. At the same time, labour markets struggle to supply sufficient numbers of qualified nurses and doctors, as low unemployment rates in the sector show.

The utilisation of modern technology, such as the automation of clinical workflows, easier access to patient information, and the mining of medical data to support care decisions is one lever to increasing workforce efficiency. The other is the development of an attractive work environment to enhance employee engagement and the brand as an employer in the labour market. But how can efficiency measures go together with creating such a work environment?

At Siemens Healthineers, we took a multi-step approach. First, we invited top managers to discuss what fundamental principles would be important in the way we operate, not only with each other, but also with partners and customers. The outcome of this discussion was not the generic values statement one can often find on corporate websites, but a set of seven principles which can be applied very operationally and offer the opportunity to take out complexity as they align ways of working on an overarching level, rather than on a detailed policy and procedure level. Second, we decided to implement a company brand name which is people-centric: Siemens Healthineers describes a community of people who are united by a joint mission. Using such a community-oriented brand has the potential to decrease the separation between employee and employer. Next, we engaged our workforce worldwide, as well as specific external target groups to learn how we are perceived today as an employer and what factors are most relevant to enhance the future attractiveness of our work environment. Surprisingly, across all cultures and organisational structures, the most attractive aspects were a strong sense of purpose, developing opportunities, and a culture of trust and autonomy. These outcomes were used to define fundamental beliefs of how we want to treat people in our organisation.

As for many employers in our sector, it is relatively easy to create a strong sense of purpose due to the immediate impact of effective healthcare on the greater good of society. Also, development opportunities are fuelled by the strong dynamic of our market with changing skill requirements and new job profiles emerging. More difficult is the implementation of a culture of trust and autonomy in a highly regulated industry with intense economic pressure and a push for standardisation of clinical procedures. The solution lies in a balance of providing autonomy for working teams, while ensuring accountability for outcomes. What drives accountability in such an approach are not extrinsic factors such as top down performance reviews and incentive schemes, but a culture of ownership and a personal identification with the purpose of the work.

Promising examples such as Heiligenfeld Clinics in Germany or the Dutch care provider Buurtzorg demonstrate that these models not only are possible in our industry, but deliver both economic value as well as an attractive work environment. They do, however, require a different model of leadership. Rather than a classic distinction between managers and employees, all levels of the organisation need to step up and take responsibility. In return, autonomy offers the opportunity to personally influence the work environment and take a lead. Managers have to put more emphasis on their role as coaches, as their value add comes less from being the decision maker but rather from explaining the purpose and then coaching teams to identify solutions themselves and giving feedback on how to improve.

At Siemens Healthineers, we embarked on this journey and are piloting new ways of working, because we are convinced that they will enable us to contribute to solving the big challenges of our industry. ■

Find out more about the Leadership Survey 2017 at **siemens.com/exec-survey**

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DISCLOSURE:
"Point of View" articles are part of the HealthManagement.org Corporate Engagement Programme

Great Leaders Embrace Conflict

Are you seeing the potential benefits of conflict at work, or simply the pitfalls?

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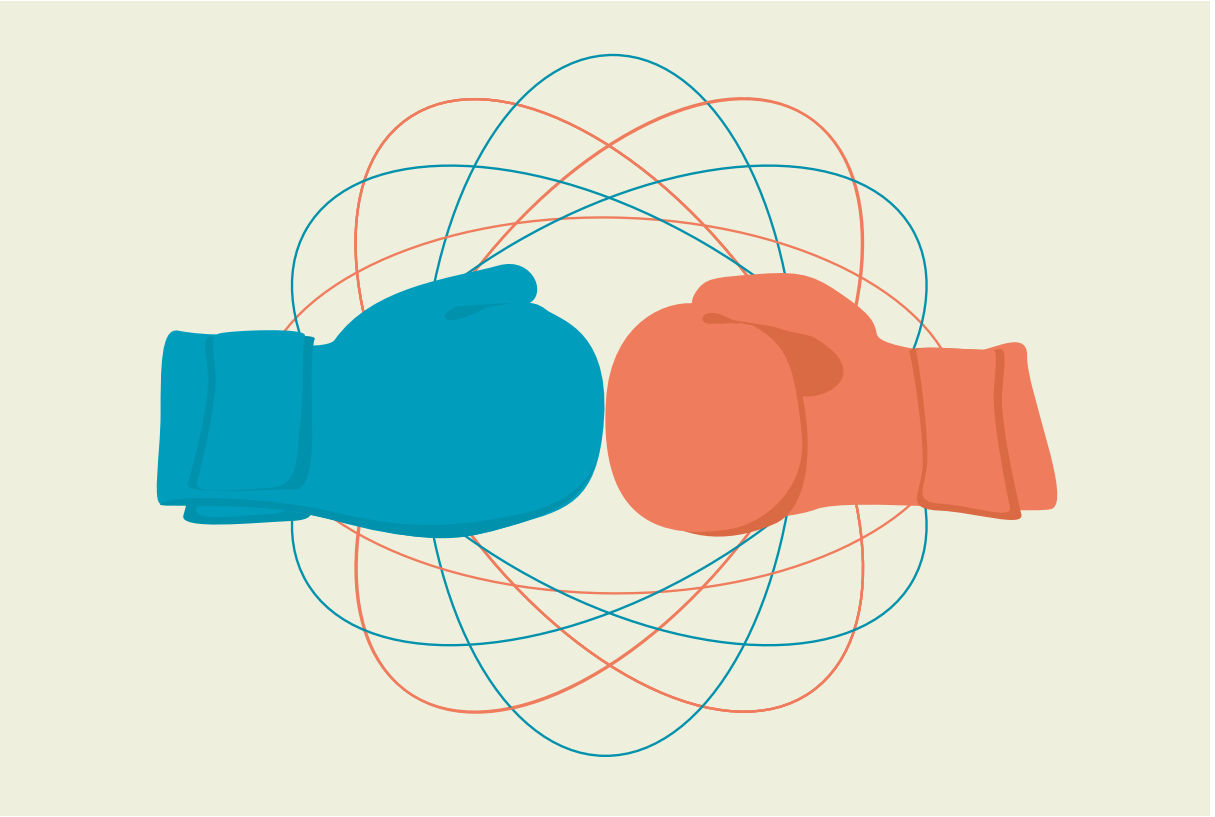

Chris was a brilliant and gifted practitioner. Well qualified. Hard working. Very experienced. Loved by everyone—clients and colleagues, as well as friends and family. Chris was very generous at work, always happy to lend a hand or be a trusted and insightful sounding board. Chris was happy to share ideas, which was particularly popular.

Except for her manager. Chris's manager saw her as a nuisance, always challenging him and picking fault with his ideas. Not in front of the team, of course, and not really all *that* often, but he *knew* what she was up to. She wanted his job and was undermining him to get it. He felt he was losing face and had to stamp it out. So he did.

Sound familiar?

Chris could be anyone up and down the country, couldn't she (or he)? An impressive professional who, for whatever unjustified and unjustifiable reason, was forced to leave. To move on. To stop being a pest. Or else.

Like you, I know from my work as a barrister, consultant, trainer and coach, specialising in employment law and human resources, this is sadly an all-too-frequent occurrence. Whether it's bullying and harassment, unlawful discrimination or whistleblowing—or simple a personality clash (it's rarely that simple) — the world of work is losing a vast amount of talent and creativity because of conflict and an innocent lack of management capability in handling conflict.

Consequences and Benefits of Conflict

We all know that prevention is better than cure, so why is it that so many still need to work on prevention?

In terms of lost time the consequences of bullying and harassment, grievances, sickness absence, high

turnover, low productivity and employment tribunals can cost weeks and months, not only days. Then there's the astronomical financial cost.

But it's worse than this. Stifling conflict is killing your business, your team or department because people will be afraid to speak up—and that is **REALLY** 'bad for business'.

If people won't speak up then wrongdoing goes unchallenged. And if someone can get away with 'X' they might try and get away, not with 'Y', but with 2X or 3X or 10X... and over what might be a very short time their offences are on such a scale that the penalty if caught just has to be avoided—at ANY cost, including a very painful human cost.

If people won't speak up then you are depriving your team of their expertise and creativity. You are cutting off a—potential—steady flow of great ideas, which can improve, streamline and harmonise relationships and productivity.

If you, the leader, are not making it easy—making it RIGHT—for your people to speak up you are also depriving yourself of a massive free resource. For many people it's not their job to have ideas, to be creative, to tell their boss that there's a better way. But many workers on the frontline can see it—screaming out at them as if it was signposted with a big red arrow. It's a free additional resource, over and above their salary. Yet it's gone.

What Can You Do?

You can begin by reframing your perspective on conflict. Conflict can often be a benefit.

At an organisational level, what is the culture and ethos? Are you doing enough to create, build and maintain a culture that is open to challenge and constructive criticism? Open to people being wrong, to taking appropriate-sized risks and learning lessons, not attacking failures?

It's a way to seek the all-pervasive continuous improvement. Are your people promoting creativity or looking for someone to blame? Massaging egos or seeking improvement through transparency?

Do remember that if you want to change the culture of an organisation or team, it really does need to start at the top. If senior managers are asking middle managers and workers at the coalface to 'do as I say, not as I do' it just won't work. It breeds contempt, not success.

At an interpersonal level, to be able to see conflict as a benefit, we need to consider both mindset and skillset, and the starting point is the right mindset. We have to build bridges, mend fences and move on—so much easier to say than to do. Anger and retribution won't help, will it?

IF YOU SEE conflict as 'bad', then it is. If you see conflict as an 'opportunity', it can be.

If you see conflict as bad, you will want to avoid it or squash it. In what is often referred to as 'constructive conflict' we look for the possibilities and creativity instead. If you were to see conflict as *potentially* helpful, you might welcome it more. You might encourage it more.

You might create a safe space to generate the benefits more often; maybe a team meeting, a brainstorm or buzz session actively encouraging a challenge to new ideas or old practices.

> "STIFLING CONFLICT IS KILLING YOUR BUSINESS, YOUR TEAM OR DEPARTMENT BECAUSE PEOPLE WILL BE AFRAID TO SPEAK UP"

Develop what I call a '**Fix Not Fight Mentality**'. Resolve to identify the issue and find an effective way through it. To focus on the improvement—the solution—not on attacking the person who made the mistake or shooting the messenger.

When the red mist of anger starts to rise, remember to prioritise the ongoing, positive relationship. Seek the win-win way forward. You don't have to be right and they don't have to be wrong.

React or Respond?

This mindset starts with a decision. **DECIDE** that you will do this. It's important to actually pause and make this deliberate, conscious decision—not to just continue on autopilot, because that's when emotions take over much more easily.

How long does it take to decide NOT to let your emotions run away with you? How long does it take to bite your tongue and NOT blurt out your frustration or anger?

It's not long is it? It's not ten minutes. It's not a minute and it's not even a few seconds. It takes less than a second to hold your breath and keep your emotions in check. Maybe two seconds if they're *really* pushing your hot buttons!

Rather than ***React***—letting the volcano erupt—instead let's ***Respond***. A measured response that takes a second or two to pause, breathe, think. That allows you to avoid saying the first (human, natural and quite understandable) thing that comes into your head—but which you will very probably come to regret.

As for your skillset, we can all work hard to develop

our Visual, Verbal and Vocal communication (the 3Vs): body language, words and tone of voice.

I'm a great believer that questions are (usually) the answer. *Get curious (not furious) – a mindset as well as a skillset*. To create a natural pause, ask yourself questions. Not only will it help avoid the volcano effect, you might find it enlightening:

- Why did she say that?
- Why did he do that?
- Is it me?

> "GET CURIOUS (NOT FURIOUS) – A MINDSET AS WELL AS A SKILLSET"

Also, ask the people involved for their views, engaging them in conversation instead of telling them what to do or to stop doing. Drawing from within them and really, properly, listening to *understand*. Mostly, however, we are not listening at all—we're just waiting to interrupt!

Work hard on **using softer or softening words and phrases.** Here are **five examples** I find extremely helpful:

1. Say 'Pause' instead of 'Stop'
2. Limit your use of the hostile-sounding 'Why?'
3. Avoid 'but' or 'however' when you're agreeing with someone or paying them a compliment – because it simply undermines the positives ("You did a great job there, but...")
4. Say Please, Thank You and Yes more often—for some, that means much more often
5. Be (or at least *appear*) empathetic by saying "That must be..." rather than "I understand" (which is often met with an angry "No you don't, how could you...")

Often it can make all the difference just to **get the basics right**. I facilitated a mediation recently for a food manufacturing business. Their invoicing, stock control and production had been hit hard due to the two women in the administration team falling out. Their manager, the HR Director and the Chief Executive had all spoken to them. I discovered that what they had not done enough of was *listening* to them.

The problem turned out to be that the older woman felt the younger woman didn't show her enough respect. The younger woman felt that the older woman acted as if she was her mother. Obvious, really. The solution was simply to get back to basics: being receptive when the other person questioned them—so long as it was courteous and professional; and even as basic as saying "Hello", "How are you?" and "Goodnight". Yes, that basic.

So let me ask. How does your organisation or team—and how do ***you***—measure up? Does your culture, mindset or skillset need a refresh? Most of us do. ■

KEY POINTS

- ✓ Interpersonal conflict can be deeply damaging to organisations and teams when it is mishandled
- ✓ There are potential creativity benefits in generating appropriate conflict and managing it well
- ✓ It takes the right mindset and skillset to manage and get the best from interpersonal conflict situations
- ✓ Top tips include: ask questions, use 'softening' words and get the basics right

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Early Human Resources Involvement in M&A Essential for Success

With Mergers and Acquisitions (M&A) activity at a high in healthcare how can HR contribute to deals that work?

Human Resources (HR) needs to be involved in M&A deals to increase deal success. Research shows early HR involvement is a critical success factor. Which role HR needs to play in M&A will be described around four critical responsibilities.

M&A deal activity reached an all-time high in 2015. Going forward Deloitte expects: "Deal activity continues to be strong" (Deloitte 2016). Early research showed the deal failure rate was around 70 to 90%. More recent research shows a 40 to 50% success rate.

In the research of M&A deal success, the reasons for failure vary, but often you will find culture, leadership, talent and communication in the top ten ranking. So, in addition to the more strategic and economic aspects, people-related issues also prove to be critical for deal success.

Research published by the M&A research centre of the London's Cass Business School (Cass Business School 2017) found 60 percent of executives agreed post-M&A deal issues could be better resolved if HR teams were involved earlier. The report also highlights three main areas to focus on to be successful. The number two area mentioned, based on their study, is early involvement of HR, and retention of key operational personnel. The research also shows that only 10% of the researched companies included HR at the targeting stage of a deal, while 81% involved them at the integration stage. So there is ample room for improvement for many companies and HR professionals to play a critical role. What does this role for HR entail?

4 Critical Roles for HR in M&A

Based on my involvement in many M&A deals, I would describe the role of HR around the following four critical areas of responsibility:

1. Organise

Set up a staff deal team during the different stages;
support design of the deal and the integration process;
help design the new organisation and lead the change process.

2. Research

Investigate material and immaterial people-related deal issues;
create a focus for the HR team on top critical issues per deal stage;
ensure expertise and capabilities in the HR team.

3. Advice

Advise involved leaders and the deal team on all HR-related issues;
be the HR subject matter expert;
beal change, culture and organisational design.

4. Communicate

Design the employee and labour-relations communication process;
take full ownership of employee communication during all stages;
act as the linchpin between the different involved groups to ensure good flow of information.

There is a huge opportunity for HR to step up and claim this role which has proven to be so critical for deal success. ■

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KEY POINTS

- ✓ HR needs to be involved in M&A deals to increase deal success
- ✓ Compared to 2015, M&A success rate rose in 2016
- ✓ Culture, leadership, talent and communication are in top ten reasons for failure
- ✓ Research shows that HR involvement in M&A deals could help them succeed
- ✓ Four action points can help HR managers deal with M&A deals effectively

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Patients Mentoring Executives

Mutual Benefits

Patient-centric healthcare has come strongly into focus in recent years. Efforts by healthcare organisations to be more patient-centred include a range of measures, such as patient councils and feedback sessions. Sibley Memorial Hospital in Washington, DC, which is part of Johns Hopkins Medicine, has pioneered patient mentoring of executives. *HealthManagement* spoke to patient advocate, Donna Cryer, and Chip Davis, CEO of Sibley Memorial Hospital, about their experiences of this innovative mentoring programme.

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How did the idea of mutual mentorship come about?

Richard "Chip" Davis (CD): At a leaders' retreat for our institution, in January 2015, Donna was part of a patient panel. We are very patient-centric at our organisation, but we think we learn from patients when we interact closely with them. Afterwards Donna and I had a chat, and she recommended that we get together on this idea of a patient mentor. As a CEO I had felt strongly about patient involvement for a long time, and we had done a number of measures here, including creating advisory councils and so on, but I really loved the idea of having a patient mentor myself. Donna comes frequently to our organisation for care, so I thought she had a great lens as someone who really knows our organisation, many of the departments within it, and I was very enthusiastic to accept that opportunity.

Donna Cryer (DC): At that panel there was a specific question on how to maintain the focus after the meeting. The answer was to have patient mentors for the CEO and for those heading different departments. Sustainability is really the key distinguishing factor of what we have created. Many institutions have different one-off activities, but to create something that sustains that sense of patient centricity over time is what makes this different.

What benefits does the mentorship programme offer?

CD: It's invaluable for executive leaders, in particular CEOs, to have frequent and direct contact with patients. One of the things that can happen in leadership roles is that if you don't seek it out you get filtered information coming through the organisation. When Donna comes in on a monthly basis and tells me about a recent experience she might have had coming into the emergency department (ED) or elsewhere in the facility it's particularly illustrative for me. It allows me to have unfiltered information and direct feedback from her.

DC: The benefits for me as a patient and as a patient advocate who's been working on systems-level change for a long time have been so healing. I have inflammatory bowel disease, am more than two decades post liver transplant, and recently had both knees replaced. I've had many contacts with the health system, both as an inpatient and with ambulatory care. Not all of those interactions have been positive, so to have the ability personally to sit down and truly be heard was healing on a personal level.

On a professional or advocacy level to be with someone who was so receptive to the perspective, the ideas, recommendations and observations and most importantly was in a position to effect change has been tremendous for me. Also I have learned a lot about how the ideas I might have as a patient or in talking with other patients have to be integrated into all the other priorities and constraints of actually running a hospital day to day. To get that insight from the CEO perspective on what it really takes to run this enterprise was very educational.

What are the challenges?

DC: With anything innovative, to bring form and substance to this, time is an issue and Chip and I are very busy. Carving out and protecting this time shows our commitment to working to bring a focus. It's mutually beneficial to discuss both larger landscape issues in healthcare and apply them, to define things that

resonated and benefited both me and Chip and to link the patient narrative to actual business challenges.
CD: I agree. We both make it a priority, because we feel that there is significant value in those discussions.

What makes an effective patient mentor?
DC: You need to be able to transcend your own personal individual experiences into recommendations. It helps to have a diversity of healthcare setting experiences so you have comparators, and to have examples of things that worked and what didn't at other places in order to bring knowledge of the healthcare landscape so you have context for what is going on with hospitals and health systems today. Patient mentors need curiosity and the ability to listen. If you are truly mentoring or coaching someone, you need to listen, to extract what their points of pains, of joy and of pride are in the institution, areas where you can effect some change, be helpful, make the most impact, how to apply your experience to them and be able to draw out, conduct and facilitate a very mutually and fluid conversation. Soft skills as well as more substantive healthcare knowledge are very helpful.

> "IT IS NOT ABOUT GOING IN AND FINDING FLAWS"

What training is provided to patient mentors?
DC: We are in the process of developing a mentorship curriculum (Cryer et al. 2017). Prof. Peter Pronovost at Johns Hopkins is helping us move it forward in conjunction with the Sibley Foundatin and the Innovation Hub at Sibley Memorial Hospital. The curriculum will entail soft skills such as coaching as well as substantive knowledge of patient- and family-centred principles and touchstones in the evolving healthcare landscape. We are looking for people who are advanced in their advocacy journey, who are experienced patients with a diversity of conditions. Patients who have a connection to Sibley Memorial Hospital and the Johns Hopkins system will be helpful for the initial cohort going through the curriculum. The first participants will need the ability, inclination and some experience in three areas: coaching skills, a substantive knowledge of patient-centred principles and knowledge of healthcare and the healthcare landscape.

How do you each prepare for your monthly meeting?
CD: Preparation is not onerous. Through the month if I have some questions or if I know that Donna has gone through the radiology department, for example, I will jot down a note and ask when we meet about her experiences. Sometimes if we're thinking about launching a new programme or a new effort, I will run the idea by her, and ask how patients might perceive it. One of the values of this partnership is that it challenges my mental model of patient care. I might think I know what the best option might be, but when you really ask the patients, surprisingly sometimes their thoughts are different. If we are really trying to create a patient-centric care delivery model, patients need to be the driving force in that. The message that it sends to our organisation when Donna and I are taking the time to meet and have been doing so for two years is very favourable to the rest of the organisation. People are more sensitised to a very patient-centric perspective if they know that all of us are really seeking that.
DC: My preparation is similar. I am very grateful to Chip for allowing me to reach out to other departments in the hospital. I have had conversations with everyone from radiology to orthopaedics to the emergency department and being able to probe and question has been really helpful. Choosing from my own experiences I put forward things that might be helpful. I also try to bring in articles. I have assigned Chip reading from time to time, either something from the healthcare landscape or local, to articulate the larger patient perspective really well. It's always a joy when we realise we have both read the same article and are talking about it. These are not just from healthcare, but borrow from other industries—hospitality, restaurants, service, really anything that helps the person-centred perspective that can infuse into healthcare.

In some of our sessions we divide it in half and meet individually for the first 30 minutes, and then in the other 30 minutes meet members from other departments we are discussing. This is really helpful, as we drill down deeper into how to apply some of these recommendations more specifically.

Can you give examples of changes that have come about at Sibley following discussions with patient mentors?
CD: As Donna has had knee replacement surgery at Sibley, I asked her to give her insights and assessment of the experience during and after the procedure. She came up with some great ideas on pre-surgical education, and the way in which it was being coordinated. We met with the clinical and administrative leadership of our orthopaedic joint replacement programme. They were very pleased to get the input and incorporated a number of changes. That's happened in a number of areas, such as the ED. If Donna comes into the ED,

she'll drop me a note afterwards about the experience, and if there are opportunities that we've identified that we can improve, we try and do that in a rapid cycle way; we don't need to set up 28 meetings with all the different constituents to do everything. We go ahead and implement it.

Formal patient mentorship is focused on CEOs. This is because one of the things that happens to executive directors and CEOs of hospitals is that they can become increasingly isolated from the daily patient care experience if they don't proactively seek that out. If you're just relying on information that you are getting from some of your direct reports that may or may not clearly paint the picture of what may be really happening.

> "ALL THAT'S NEEDED—AN OPEN HEART AND AN OPEN MIND"

DC: That has been so exciting for me to see as I've gone around the hospital. Well before our first year ended the things we talked about I would see them translated across the Innovation Hub and into the hospital itself. That is so gratifying and satisfying for somebody who has had all these thoughts and recommendations pent up for so long. To see them come to life and be able to benefit other patients brings such meaning to this. It's been everything from ideas about peer mentoring to use of video and other communications, care coordination, through to more patient-centric quality measures, measures that really matter and that advance care rather than create more administrative burden and that make sense from the patient and institution perspective. We have discussed sharing best practices and data among physicians to improve outcomes. Also, we were able to surface some really wonderful things going on in the hospital and highlight them, so that staff receive recognition for patient-centricity from the CEO. It is not about going in and finding flaws. Sibley gets a lot of things right, so to be able to find undiscovered gems, and ask if they need more resources or whether they can be scaled up to affect even more patients positively, was an exciting part of this as well.

How would you convince another hospital to start a patient mentorship programme?

CD: I would be very straightforward and tell them: "Just do it!" It does not take a lot of convincing, and if it does I would suggest there may be other issues going on if CEOs and the executive leadership don't see value in direct and ongoing interaction with patients. I would identify the value proposition I have been able to personally get out of this as well as our organisation.

DC: An organisation that has a culture and position where they want to evolve and they have mechanisms for making change and for getting feedback back to patient mentors are important considerations for their readiness. A point of frustration is if this was just conversation. I've had these in past with other institutions; they've had a committee for 18 months and weren't really prepared to take on a culture of patient-centredness in an authentic way. Improved self-assessment of their readiness and commitment to patient-centred change throughout their hospitals and systems is all that's needed—an open heart and an open mind. ■

Donna R. Cryer, JD, is president and CEO of the Global Liver Institute, the innovation and collaboration platform for the liver community. She serves on the Executive Committee of the People-Centered Research Foundation, the Boards of Directors of the Society for Participatory Medicine and the Personalized Medicine Coalition, as a patient representative to the U.S. Food and Drug Administration and the ABIM Gastroenterology Specialty Board. Her community service includes roles on the Boards of Trustees of Sibley Memorial Hospital/Johns Hopkins Medicine and The Taft School.

Richard O. Davis, PhD, is president and chief executive officer of Sibley Memorial Hospital. Prior to joining, Dr. Davis was vice president for innovation and patient safety for Johns Hopkins Medicine, executive director of the Johns Hopkins Medicine Center for Innovation in Quality Patient Care and of Johns Hopkins Medicine's Access Services and director of The Johns Hopkins Hospital's East Baltimore Ambulatory Operations. He serves on the boards of trustees of Johns Hopkins Homecare and Johns Hopkins Pediatrics at Home. He is on the faculty of the Johns Hopkins University Bloomberg School of Public Health Division of Health Policy and Management and the Business of Medicine programme of the university's Carey School of Business.

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Challenging Paradigms

Practising at the Top of Your Licence

Is a division of labour approach in which health professionals limit their practices to the top of their licence and training best for high-quality, patient-centred care?

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The industrial revolution has come to healthcare. Old paradigms—from routine physicals to even the concept of the doctor as the captain of the ship—are being challenged as we try to find more efficient ways to deliver high-quality care. However, as fast as we break down the rigidity of past practices in order to foster better systemisation we seem to build new paradigms that may have negative unforeseen consequences. These new "truths" can rapidly be set in concrete while the problems they create are given little attention. We must always be asking ourselves whether we are truly improving care or if we are merely swinging the perennial pendulum of change too far as we try to reject shibboleths of the past.

A new paradigm that I see in many realms of medicine is the concept of having each professional practising at the top of their licence and their training. What that means is that a doctor should not do something that a nurse practitioner can do; a nurse practitioner should not do something that a nurse can do, and a nurse should not do something that a nurse's aide should do. In practice this concept has manifested in a variety of ways. During a hospital stay, which I described in a blog post (Spiro 2015), the nurses rarely touched me or even saw me as they stayed at the nurse's station monitoring my cardiac rhythm, watching my trends on the computer, and only coming in to give me medications twice a day. The nurses' aides took my vital signs, helped me get to the bathroom and changed my bedding. The doctors did not come in at all as they were able to access the record from multiple locations, and I only saw the physician at the time of my procedure. In psychiatry, this same concept has developed to the point at which it is unusual for a psychiatrist to engage a patient in talk therapy and instead the psychiatrist is involved mainly in medication management with talk therapy being performed by licensed therapists who are not MDs. For surgeons, it means that they are often focused totally on their work in the operating room, with nurse practitioners assessing the patients and caring for them before and after the surgery.

The fact is that this type of approach has some attractive features. For the system, it could potentially save money. For the health professional, it frees them from doing tasks that they may not like to perform and allows them to focus on the tasks they are trained to do. But is this better for the patient? Is this strict division of labour really conducive to high-quality, patient-centred care?

> "DIVISION OF LABOUR CAN BE TOO STRICT IN ITS APPLICATION"

In some ways, this new paradigm is related to the industrial revolution that healthcare is now undergoing. The assembly line was a key component of the industrial revolution of the nineteenth century, and the movement towards a new industrial revolution in healthcare can be seen to be following that tried and true formula. A true division of labour approach in which everyone limits their practices to the top of their licence and training has advantages. Assembly lines allow for specialisation of roles, and that often leads to less variability, which is associated with higher-quality products being produced at a significantly lower cost. The cost of labour goes down as each person involved only performs a small number of tasks. That allows for training requirements to be narrowly focused as well, with the jobs themselves than more easily filled at a lower salary level. If more can be done by nurses' aides who are lower paid than nurses, the theory goes that nurses can focus more on the "important" nursing roles, which results in a decrease of total costs and a more effective and efficient system.

However, the disadvantage of the assembly line is that unique craftsmanship is lost. From the worker's point of view, the work becomes repetitive and the "big picture" of the ultimate goal, complete with individual pride in reaching that goal, can be lost. The individual ownership of the product (and in healthcare the product is the wellbeing of the patient) risks being lost in a system that is based on assembly-line principles. There is a reason that the finest products in the world are often not made on an assembly line, but are

made by master craftspeople who take great pride in their work. We see some of these disadvantages in this new medical paradigm, as physicians and nurses are rewarded for how well they do their individual tasks rather than how well they treat the whole person.

Medicine is filled with the risk of low-probability and high-consequence events, some of which are due to our treatments and not only to the underlying disease. Quality medical care demands anticipating and avoiding those events and treating people in such a way as to minimise the risk of any intervention. That may require more holistic thinking about the patient rather than task-based thinking. A health professional who is very hands-on—even if that is "below" their training and licence—may be the best defense against poor quality care. An article in ProPublica that focuses on surgery risks and patient safety makes this point when the authors describe two surgeons in a small community hospital in northwest Alabama who are among the best in the country at doing joint replacements (Allen and Pierce 2015). Dr. Aaron Joiner and Dr. John Young have performed 282 knee and hip replacements over the last five years with zero complications. The way they accomplish this is the antithesis of practising at the top of your licence. As described in the article, they often operate together, even though that hurts their income. They believe that having two surgeons in the operating room provides a backup and an immediate quality control. They describe a typical interaction in the operating room as one in which they are open and honest when they see their partner doing something that does not measure up to their own standards. "I may look at something a little backwards or get turned around," Joiner said. "It's nice for one of your partners to say: 'What the hell you doing? You're not out huntin' this morning. You're doing a knee replacement!" They also do all the post-operative care themselves rather than having physician assistants or nurse practitioners do that for them. As Dr. Joiner puts it: "We don't cut corners. We do it the right way every time."

I remember when I was training in gastroenterology, serving alongside Dr. William Silen, a giant in the world of surgery, who was also a dedicated teacher, mentor and patient advocate. At Harvard Medical School, the William Silen Lifetime Achievement in Mentoring Award honours his leadership. We would make our rounds with Dr. Silen to see patients at 5am every morning and at 6pm every evening, personally seeing each patient pre- and post-operatively twice a day with our operating room duties in between. The fellow or resident who just wrote an order without actually seeing the patient, talking to the patient, and examining the patient would not last long with Dr. Silen. The doctor in training, who thought that removing a nasogastric tube or changing an intravenous line was a nurse's job and not his or her direct responsibility, would quickly learn that that attitude was not acceptable. For Dr. Silen every task that involved caring for a patient was in the physician's scope of practice and was, by definition, practising at the top of their training and licence, because medicine was about ownership of the entire patient—their problems, their hopes and their lives—not about the specific task that needed to be done.

Conclusion

The idea that all health professionals practise at the top of their training and licence when used in the context of a true team all sharing full accountability for a patient can help both quality of care and the human caring that patients need. However, it is very easy for that pendulum to slip past the midpoint into the realm of assembly-line care that focuses on the immediate task rather than the entire patient and their family. In an age of ever-expanding health systems, employed physicians, corporate medicine, government medicine and large mega-health benefits companies, it is far too easy to focus on an assembly-line mentality rather than a team mentality that can truly improve care. Let's not allow the new paradigm that demands division of labour to ever divert us from the idea that all care for a fellow human being in need is by definition at the top of one's training and licence. ■

KEY POINTS

- ✓ Having health professionals practise at the top of their licence is necessary for optimal healthcare efficiency
- ✓ However, the ownership that each health professional has for the total wellbeing of every patient is at risk of being undermined by a division of labour that can be too strict in its application
- ✓ The key to success in healthcare is for each health professional to take responsibility for the holistic wellbeing of the patient while trusting teammates to have that same attitude
- ✓ Practising at the top of your licence should lead to teamwork rather than a strict division of labour

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Learning Without Limits

Massive Open Online Courses

HealthManagement interviewed FutureLearn's Director of Partnerships about what Massive Open Online Courses mean for healthcare professionals and organisations. And University of Twente ultrasound educator Jordy van Zandwijk shares their experiences of offering ultrasound education via FutureLearn.

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In recent years, access to online learning has expanded through provision of "Massive Open Online Courses" (MOOCs). These are courses of study made available over the Internet without charge to a very large number of people, who only need Internet access to be able to participate.

HealthManagement spoke to FutureLearn's Director of Partnerships, Mark Lester, to find out more.

Can you give us an overview of the history of FutureLearn and its objectives?

FutureLearn was formed in December 2012 by The Open University and is now the largest Massive Open Online Course (MOOC) provider in Europe with over 6 million people signed up from over 230 countries around the world.

FutureLearn's educational approach is centred on a social learning pedagogy, which puts knowledge sharing and discussion between hundreds of learners at the core of the educational experience. In essence, it is proven that people create meaning for themselves through conversation rather than simply consuming content. This makes FutureLearn courses especially potent for healthcare subjects, as courses facilitate extensive inter-professional knowledge transfer, as well as introduce a strong patient voice into the discussion.

Courses on FutureLearn also aim to incorporate distinctive storytelling techniques, guiding learners through a narrative composed of bite-sized videos, articles, case studies and interactive exercises that make learning engaging. And courses on FutureLearn can be enjoyed on any device, so learning can be organised around a professional's busy lifestyle.

What's involved for an organisation interested in producing a course for the FutureLearn platform?

Universities and organisations are able to produce a course on any topic they like—we're open to all course proposals from partners. Partners are thoroughly trained in FutureLearn's educational approach and receive ongoing best practice advice from FutureLearn and its large network of partners. Once a proposal has been submitted, the institution will develop the course and can consult a FutureLearn partnership manager in the design and delivery of the course itself. We will guide partners in every aspect of the lifecycle of a course and apply agreed standards to ensure courses live up to quality aspirations of the entire partnership.

What are the most popular healthcare courses?

The most popular courses tend to be those with relevance to the public. We have had significant uptake of our courses on mindfulness (**https://iii.hm/bdw**), mental health and wellbeing, and food as medicine. Other courses that do well among practitioners are ones dealing with major medical emergencies, such as Ebola and Zika, courses dealing with mental illness, such as dementia, and courses on quality improvement.

How do you measure success for FutureLearn courses?

As courses are mostly free to access, we measure success in terms of learner engagement and Net Promoter Scores from surveys of learners. We're a social learning platform, and this approach delivers significantly higher levels of engagement and completion from students. On average, 44% of people who start a course and actively participate make a comment alongside the course content. We are also undertaking studies to demonstrate the impact of courses on learners' knowledge and behaviour. Research with learners taking courses for professional development shows that not only has knowledge improved post-course, but that the learning impacts positively on their effectiveness in their role.

How do you vet courses and ensure they are up to standard?

We have established a quality assurance process, which every course has to align to in order to be published on FutureLearn. The course criteria is based on pedagogical, technical and business requirements, a process which has been well-received by partners. We have a close relationship with our partners; courses are

reviewed at every point of the life cycle and partners have access to dashboards and data as part of ongoing evaluation of their course.

What is the take up in low and middle-income countries?

We want to give as many people as we can the benefits of great learning, making education accessible to anyone, anywhere. Learners have signed up from over 230 countries around the world and whilst we have a strong following (around 1.3 million learners) in the UK, 77% of our learners are based in countries outside of the UK.

For example, during the latest outbreak of Ebola, the London School of Hygiene and Tropical Medicine ran a course on the disease, and almost 2% of the 18.1k enrolments in the first run of the course came from Sierra Leone, one of the worst-affected areas. In the latest run of the course, 16% of learners were based in Africa.

Learners from low-income countries are still a minority on the platform, largely on account of the difficulties in accessing the internet, English language proficiency, internet speeds and the cost of data. But we hope to see participation rise over time as those barriers recede and as more courses emerge that speak to the direct needs of learners in those countries.

> “COURSES FACILITATE EXTENSIVE INTER-PROFESSIONAL KNOWLEDGE TRANSFER, AND INTRODUCE A STRONG PATIENT VOICE INTO THE DISCUSSION”

What are the limitations FutureLearn has come up against in its healthcare online learning courses and how have they been overcome?

The limitations at this point are purely technical in terms of supporting some of the teaching methods one might find in traditional classroom environments, such as scenario-based activities. However, we are working increasingly with the Learning Tools Interoperability (LTI) framework, a facility to enable FutureLearn to embed learning activities hosted elsewhere within FutureLearn, which will begin to address these challenges.

Technology is constantly evolving: medical education is already seeing students learn from live 360 degree broadcasts of surgical procedures, and haptic technology is offering possibilities for virtual procedures. So in time, there may be more that FutureLearn can support that today we might never have believed to be possible in an online environment.

Which types of healthcare topics are feasible for online learning and which areas will FutureLearn not deal with? We imagine you can’t treat all subjects the same way.

There are many topics that can be delivered online for health practitioners. We have clinical courses on topics like medicines adherence, antibiotic resistance, Gram-negative bacteria, dysphagia, and responding to crises such as Ebola and Zika; we have courses on health technology such as ECG assessment and genomic medicine; there are quality improvement courses such as using data to improve outcomes; and we have courses that help practitioners working with dementia patients and supporting people living with long term conditions. We also offer a range of courses for the public on topics like mindfulness, obesity and looking after your liver.

Courses less likely to be delivered online are those requiring hands-on clinical practice. While we are seeing huge advances in simulations and virtual reality, these are more difficult to achieve online and for practitioners are better undertaken in a real-life environment.

What sort of feedback have you had from human resource departments, heads of training and staff at healthcare facilities about the option of FutureLearn for training?

We have had very positive feedback from HR departments and staff at healthcare facilities. Private hospital groups and NHS trusts have been inspired by the social learning pedagogy of the platform, as well as the high-quality user experience we deliver. Hospitals have purchased vouchers for their staff and recommended our courses to staff. Testament to this is the fact that Health Education England, the teaching arm of NHS England, has joined as a partner to deliver courses on FutureLearn, along with other respected institutions such as the Royal College of Physicians, in addition to most of the top medical schools in the UK and around the world.

What lies ahead for FutureLearn for healthcare courses in terms of growth, new markets, general development and new subject areas?

Healthcare will remain a core focus area for FutureLearn. We see tremendous need around the world to train healthcare practitioners at scale. Many countries in the developing world, such as India and China, have major shortages and must train hundreds of thousands of staff in a cost-effective way. Even in the

U.S. and Europe, critical shortages of nursing staff and GPs exist that require affordable methods of education. FutureLearn is looking to support governments, regional health systems and individual healthcare trusts address their challenges, either using courses available on the platform or developing custom courses delivered privately to staff across organisations.

But besides the demand for new staff, health systems are faced with major technological trends, such as genomic medicine, big data and nanotechnology that will revolutionise diagnosis and treatment. We see opportunity to assist governments and health providers address the skills needed in these emerging areas. ■

Teaching Ultrasound Imaging Online

The Educator's Viewpoint

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Why did you decide to offer this course?
A major reason for developing this course was to share health-related activities at the University of Twente, specifically our experience and research with ultrasound technology. We wanted to transfer the philosophy that having both clinical and technical knowledge in the (daily) use of medical technologies can optimise success in clinical practice. We wanted to make people excited about the technical and medical aspects of ultrasound, and to train our own educational team in the use of novel digital learning environment tools.

How have the faculty found it?
We enjoyed the project a lot as this was the first time our faculty had developed an online course at such a scale for such a broad audience. Our own clinical and technical educators were all enthusiastic about creating materials for learners interested in the topic. The beautiful thing here is that the materials we produced could also be used for our own students, or to support clinicians in their local practices. Furthermore, thanks to the course, all educators and education experts involved now have more insight into the possibilities and challenges of using digital learning environments.

What has the feedback of the learners been?
The combination of having course steps in the form of case studies and explanatory videos, complemented by technical theory was most interesting for learners. From learner comments, we know that most of them wanted to have a better grounding in the principles and pitfalls of ultrasound in order to be better supported in their working lives. The course attracted professionals already working with ultrasound, which was our main target audience, as well as those with a general interest in the topic.

How did you approach the design of this course given the potentially vast audience?
The main challenge was that we had to design a course that would suit the needs of a vast audience with a great variety in backgrounds and prior knowledge of the subject. The advantage of the social learning aspect of the platform was that if learners wanted to go beyond the content covered in the course step, they were able to elaborate on the content through discussions with other learners, by sharing their knowledge from their experiences in the field. Whilst the course attracted a vast audience, owing to their differing levels of understanding, learners could go through the course at their own pace. We structured the course in weeks focusing on different areas: technology, medicine and the integration of technology and medicine in clinical cases. ■

The course, *Ultrasound Imaging: What is Inside?* will be running again on the FutureLearn website from Monday 23rd October - see **https://iii.hm/bdu**

USA Radiology Workforce

Outlook for 2017

The outlook for radiologists seeking jobs is better than in previous years, but which subspecialities will be in most demand in the United States?

In the USA, the outlook for those looking for job opportunities in 2017 is very good for both newly trained and experienced radiologists

It is projected that there will be considerable improvement in the job opportunities available for radiologists in the USA in 2017 when compared to previous years. The number of potential available jobs for radiologists is predicted to be increased by 14.1% when compared to 2016. The predictions are the result of analysis of the American College of Radiology's 2017 Workforce Survey.

> "MUCH GREATER DESIRE TO HIRE AFTER-HOURS RADIOLOGISTS THAN PREVIOUSLY REPORTED"

Since 2013, when only 1,069 individuals were able to secure jobs as radiologists in the USA, there has been a steady rise in job opportunities. The forecast for 2017 is that there will be between 1,826 and 2,370 job opportunities (Bluth et al. in press). Since approximately 1200 trainees finish each year, there will be also more opportunities for those who already have jobs and are wishing to find alternative positions. In 2016, 57% of new jobs were secured by first time hires post training and 43% of new jobs were obtained by those moving from another position. Similar to previous years, it is anticipated that jobs will be most plentiful in the southern and mid-western regions of the USA. Still, the most difficult locations to find a job will be in the New England mid-Atlantic regions. Private practices followed by academic university practices are the most common groups which will be offering jobs.

Ninety per cent of jobs will be obtained by those who have had fellowship training. In descending order, the most needed jobs in 2017 will be in the following radiology subspecialties: neuroradiology, general interventional radiology, after-hours radiology, body imaging, breast imaging, musculoskeletal, paediatric, general radiology, women's imaging, nuclear medicine, basic research, cardiothoracic, emergency/trauma, neurointerventional MRI, ultrasound, informatics, health services research and quality and safety. This is relatively similar to previous years, with the exception that there is a much greater desire to hire after-hours radiologists than previously reported. Additionally, the number of general radiologists in the workforce continues to decrease significantly since 2012.

The current workforce in the USA is divided into the same subspecialties of radiology for which new job candidates are being recruited. Regarding the demographics of practising radiologists, 56% are between the ages of 35-55. Nineteen percent are ages 56 to 65, 6% are over the age of 65 and 10% are under the age of 35. Most radiologists work full time 40-50 hour weeks, although 16% work part-time. Most radiologists are men. Twenty-one percent of practising radiologists are female. More women work part-time compared to men. Radiologists in the USA traditionally work only at a single job. However, although more than 90% of new hires will have completed a fellowship, most radiologists in the USA will work less than 50% in their subspecialty areas and cover other departmental needs during their remaining 50% time. (Bluth et al. 2016). Academic practices are the exception. In that form of practice, subspecialists generally spend between 50-70% of their clinical time exclusively in their areas of special interest. In summary, the outlook for those looking for job opportunities in 2017 is very good for both newly trained and experienced radiologists. ■

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Pursuing a Culture of Safety

The Importance of Self-Regulation

Professional self-regulation is effective when dealing with staff with high numbers of patient complaints and coworker observations.

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The Vanderbilt Center for Patient and Professional Advocacy is dedicated to making medicine kinder, safer, and more reliable by supporting their partners' objectives of using professionalism as the foundation of safe, quality healthcare. The Center provides data, tools, and effective processes for promoting professional accountability, including the proprietary systems PARS® (Patient Advocacy Reporting System) and CORS℠ (Co-worker Observation Reporting System). *HealthManagement* spoke to Center Director, Dr. William O. Cooper, to find out more.

Why was the Vanderbilt Center for Patient and Professional Advocacy established?

The Center was established 20 years ago in response to research by colleagues at Vanderbilt, in particular Dr. Gerald B. Hickson, which identified the risk for medical malpractice claims and what led families to sue (Hickson et al. 1992; 1994). This research found that there was a small group of physicians that accounted for a disproportionate share of malpractice risk. Those same physicians could be identified through unsolicited patient complaints, when patients aren't pleased with their care and reach out to the office or to the hospital to share their concerns. Dr. Hickson and his colleagues found that the same 3% of physicians who accounted for 50% of the malpractice risk also accounted for 35-40% of unsolicited patient complaints (Hickson et al. 2002). Dr. Hickson and his colleagues developed an intervention model where peer messengers share data with the individuals to give them the chance to self correct. As we found success in this work at Vanderbilt, other groups across the United States approached us to see whether the same models would apply there. The Center now provides surveillance for over 33,000 physicians at 140+ hospitals across the United States with PARS® (Patient Advocacy Reporting System) and CORS℠ (Co-Worker Observation Reporting System). We also provide leadership development, education and resources to organisations to address behaviours that undermine their culture of safety.

The Center has developed the Patient Advocacy Reporting System (PARS®). What data is collected on patient complaints?

Our system is known as PARS® (Patient Advocacy Reporting System). Patients are uniquely positioned to make observations about their care. When they observe things that either fail to meet or exceed their expectations, they will often speak up. In many cases that gives

healthcare organisations a chance to engage in service recovery or efforts to make right whatever the patient perceived was wrong. That might be addressing their specific concerns, but often in their observations are system issues. Individuals may be identified, who have a disproportionate share of complaints. We know that not only do these complaints lead to medical malpractice risk, but they also decrease the likelihood that patients are going to adhere to care recommendations. Patients may also speak poorly about the healthcare system to their friends and family or through social media. Research has shown in healthcare that every one voiced patient complaint represents 40-70 unvoiced complaints, which serve as a strong indicator for malpractice risk (Annandale and Hunt 1998).

> “WHEN MADE AWARE, 80% OF PHYSICIANS WILL SELF-REGULATE”

Many organisations that have robust service recovery programmes collect these data already. We have found that they can be extremely useful to identify and successfully intervene with physicians and advanced practice nursing professionals at particularly high risk of receiving patient complaints. Additionally, the data have proven to have a substantially improved impact when this information is delivered in person and by a peer (Schaffner et al. 1983).

Is the proportion (3%) of physicians at risk of patient complaints and malpractice suits consistent over time?

In the original work that looked at those 3% of the physicians who are responsible for a disproportionate share of patient complaints, the physicians were included in a randomised controlled trial (Hickson et al. 2002). One group received the intervention and the other group didn’t, and we still track their responses. What we learned from this study was that by sharing data with the involved physician you could not only decrease their patient complaints, you could also improve the malpractice experience. For 78% of the time, across the studied 3,000 physicians, when we identify those physicians and intervene their patient complaints decrease. Many of our sites have also done an analysis that suggests that those physicians who receive interventions can drop their medical malpractice risk by 75-85% in some cases, which results in significant savings for the healthcare systems.

One question that might follow is whether you can just address those individuals once and that will solve the problem. However, these types of risk are dynamic and change throughout a person’s career. When physicians are establishing their career, this is often a high-risk period for both patient complaints and malpractice. Physicians may also develop mental illness, substance abuse or significant life stressors that lead them to respond in ways to patients and colleagues that are less than respectful, or they may be unable to face challenges and respond in a timely manner. There is a need for ongoing surveillance to identify and intervene with those physicians. If they don’t respond due to a significant underlying problem, in our model, guided by the Vanderbilt professionalism pyramid, there are opportunities to connect individuals who are persistent outliers to resources to assess and potentially help restore them to full practice.

The Co-worker Observation Reporting System CORS℠ keeps feedback within the clinicians rather than involve human resources. Why is this? What advantages does this have over formal investigations of patient complaints and observations and coworker reporting?

The work we do is guided by the Vanderbilt professionalism pyramid (**ww2.mc.vanderbilt.edu/cppa/45627**), which is a tiered intervention model. The model is based on the notion that single interactions, such as coworker reports about failure to return a phone call or speaking rudely to a nursing professional should just be shared, because it gives the opportunity for the individual to reflect. If that interaction is mandated to be reported, or egregious, of course you engage human resources or the appropriate authority to investigate. Meaning, if someone violates a regulation or policy, such as sexual harassment, physically touching another person, coming to work impaired by drugs or alcohol, those cases are moved to formal investigatory processes. What we found, however, is that when there is a case of disrespectful behaviour, if you were to investigate it takes a long time, and what you find at the end of the day is often a “She/he said” situation. You never really know the truth, and all we want, whether it happened or not, is for that professional to know that the behaviour was observed and that someone thought it wasn’t consistent with the organisation’s values and goals for treating everyone respectfully. If someone fails to respond, and develops what appears to be a pattern under the pyramid model, a peer would bring that pattern to their attention and say: “Dr X, for some reason your practice appears to be associated with more of these coworkers’ concerns than your colleagues. All I want to let you know is that

within our healthcare system, you are in the top 1% and we just want to make you aware of that." If they fail to respond then they move to more formal processes where we begin to equip them with resources as well as corrective action plans where leaders work with the individual to get them to respond. Failing that they then move to the formal disciplinary processes. This process aligns with human resources work and it is consistent with clinical practice. The concept of self-regulation and group regulation is very important; when made aware, 80% of clinicians will self-regulate.

When you introduced CORS℠ at Vanderbilt did you find that people were reluctant to report?
Quite the contrary. When we introduced this system we found that once people began to trust that we were going to respond and would surround them with an environment of physiological safety, meaning that someone wasn't going to retaliate against them for reporting, we found a large uptick in people's willingness to report and share observations. This has been sustained over the last four years.

On professionalism, with Dr. Gerald B. Hickson you have written: "Whereas much is written about professionalism and its noble tenets, far too little attention has been focused on understanding a critical component of professionalism—the commitment to group and self-regulation.... while it requires courage to examine one's own performance, it requires even more courage to assess and intervene on the behaviour and/or performance of others" (Hickson and Cooper 2015). Please comment.
I am a practising paediatrician and I have been a peer messenger in the Vanderbilt medical system for the last 10 years. In clinical care, when new antibiotic prescribing guidelines come out and I am treating a child who has pneumonia, I have the opportunity to reflect on my practice and see whether my practice is consistent with my peers according to those guidelines. The same opportunity applies when we give physicians information to suggest that, relative to their peers, they are outliers in terms of complaints and that they have risk of malpractice suits. By giving them their own data and comparison data we give them the chance to have that "A-ha!" moment, to have self regulation. As professionals the medical societies within which we work give us the right and the privilege to group regulate, monitor and help each other in what it means to be a professional. This courage and this ability to encourage self reflection is just as if I were to have a conversation with a colleague about their antibiotic prescribing. As a peer messenger I can sit and bring to their attention that there may have be something about their interactions that leads patients to complain more commonly about them than about their peers. We know that this increases the risk for malpractice and other challenges, and all we are asking them to do is to reflect on how it is that for some reason their practice appears to be associated with more of these patient complaints then their colleagues. We find that in 80% of cases the opportunity to reflect on that is very helpful, because many folks will tell us: "No one has ever told us this, I have been like this for years and no one has ever brought it to my attention." ■

William O. Cooper, MD, MPH is a practising physician, researcher, teacher, and administrator. He has led School of Medicine programmes, including the Center for Patient and Professional Advocacy, the Master of Public Health Program and the Pediatrics Office for Faculty Development. He is an internationally recognised expert in medication safety in children and has published over 100 scholarly articles to date with research published in journals including *New England Journal of Medicine* and *JAMA*. In his role as Director of Vanderbilt's Center for Patient and Professional Advocacy, Dr. Cooper oversees the operations of the center's PARS® program, education and training, and research programmes. He has lectured on professionalism and is recognised for his innovative approach to teaching. Dr. Cooper has won numerous awards and was selected for Vanderbilt's Academy for Excellence in Teaching in 2010.

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Affidea is known for clinical excellence and operational efficiency, but at Healthmanagement.org we are most interested in exploring what Affidea is doing with training and education.

We spoke to Dr Rowland Illing, Affidea Chief Medical Officer, about this topic both in the clinical domain and in the more challenging area of leadership.

As a commercial company, how does Affidea benefit by investing in education and training?

Affidea has a responsibility to invest in the education and training of all staff. Each Affidea country provides educational resources for its local staff but, until recently, there has been no group level platform to coordinate resources. We partnered with the European School of Radiology (ESOR) to develop the Asklepious Training Course, a basic radiology program which we offer to all clinicians.

The benefit to Affidea is clear – better trained staff leads to better care for our patients. Better leadership means enhanced governance and development of staff improves recruitment and retention. I want all staff groups - contracted and employed - to be equally supported.

The Affidea Academy has recently been established. What is its purpose?

The Affidea Academy comprises two elements – The Clinical Academy and the Leadership Academy.

The Clinical Academy was piloted last year with two educational events - the Magnetic Resonance Imaging (MRI) Prostate Training Course in Budapest, Hungary and a Medical Physics Radiotherapy Workshop in Poznan, Poland. The former brought together radiologists from 11 countries with expertise in MRI and academic colleagues from University College London, UK. We spent two days aligning how MRI was performed and reported across the group. Each team returned to their own country to establish a centre of excellence and spread the standards to country colleagues in their own language. The Medical Physics Radiotherapy Workshop brought together staff from our radiotherapy centres for training and consensus building across the network.

On the back of these successful pilots, we recruited an experienced educator as Clinical Academy Lead, bringing together resources from across our countries. In the same way we leverage our scale to improve operational efficiency and procurement across the group, we take the best educational practices from our countries and spread the learning to benefit all. We are also developing a subspecialty network to improve the strength and depth of expertise.

> “LEADERSHIP AND BUSINESS SKILLS ARE OFTEN OVERLOOKED IN THE TRAINING OF CLINICAL DISCIPLINES - DOCTORS, TECHNICIANS AND NURSING STAFF ALIKE”

How does the Leadership Academy fit in?

We receive great support from our human resources teams. They understand we need great managers but also clinicians who can manage and lead teams. We are fortunate to have excellent Country Medical Directors but we must train the next generation of doctors to step up into positions of responsibility. Leadership and business skills are often overlooked in the training of clinical disciplines – doctors, technicians and nursing staff alike. We want to nurture those with an interest in health systems and challenge them to be future leaders.

In the UK, the Faculty for Medical Leadership and Management focuses on this ethos. But this is not the norm across Europe. There is often little incentive for clinicians to lead outside their immediate clinical environment, except as part of an academic institution.

By the way, this isn’t true in the U.S. Physicians have to be more entrepreneurial and their presence in leadership roles are not only accepted but expected. A professor can step out of academia to be involved in a start-up and return to lecturing. This is an anathema to the European ethos.

Prostate MRI Clinical Academy

To move forward, we have partnered with the London School of Economics (LSE), UK to create a Leadership Academy. We will start by supporting current leadership and health management and extend learning to talented individuals in our network.

What other benefits do you see from creating a central Affidea Academy?

The Academy allows us to develop subspecialty radiology groups with representatives from each of our countries. Our in-house experts comprise professors and clinical researchers from across radiology and cancer care specialties. As one of the largest procurers of medical imaging and cancer care equipment globally, we are also fortunate to have privileged relationships with equipment manufacturers. They have enormous resources to support our staff and they want their equipment to be used to its fullest potential – a synergistic relationship bringing mutual benefit.

How do you see the role of human resources in this process?

We have excellent HR support at Group and Country level. The team understand that non-targeted training, other than core mandatory subjects, is of limited value. However, tailored training opportunities require huge investment in time and resources. The Affidea Academy is developing a new centralised HR information system to track and support staff and provide meaningful personal development.

What are the next steps for the Affidea Clinical Academy?

We are unifying the way we perform radiology and radiotherapy. Our Dose Excellence, MR Excellence and Radiotherapy Programs ensure common protocols between centres and countries. For me, the next step is unifying the way images and treatments are reported. Consensus is key and this is more easily achieved in an independent company than in a state or academic system. Likewise, agreement on key performance indicators and the way these are reported will be the future focus of the Academy.

Are there any other benefits the Academy may bring?

To engage with machine learning and artificial intelligence (AI), it is essential to unify the way we acquire imaging, perform radiation therapy and structure reports. The press regularly write about this area but the boring truth is that it is difficult for computer scientists to draw meaningful conclusions without standardising inputs. We are talking with several leading AI developers interested in working with uniform data.

Establishing a pan-European training academy will also allow us to support our colleagues in the state sector. In several countries we are discussing how we support non-Affidea staff in training and education. This may be an interesting future direction.

What would be your take home message?

Education and training is at the heart of our business. We have a fantastic opportunity to disrupt the way it is delivered and potential benefits are huge. ■

affidea Academy

DISCLOSURE:
"Point of View" articles are part of the HealthManagement.org Corporate Engagement Programme

Appraisals in Healthcare

Are Traditional Performance Appraisals Suitable for Healthcare Workers?

Further work is required in healthcare settings to create productive systems for ongoing reviews that accumulate in an annual review that focuses on the individual's growth or continuing professional development.

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Appraisals can be summarised as "a formal documented system for the periodic review of an individual's performance" (Moon 1993, pg. 8). Healthcare workers have been subjected to annual appraisals for many years (compulsory in the United Kingdom National Health Service [NHS] since 2002), with regulators using the completion figures to assess the quality of an organisation. It could be strongly argued that this promotes quantity rather than quality, which questions the ability to assess the value of an individual's appraisal.

Appraisals are still a topic that causes most despondency amongst a workforce (Fletcher and Williams 2016). In the United Kingdom National Health Service staff survey for 2016, 87% of staff reported that they received an appraisal, with quality scored at an average of 3.1 out of 5 (NHS England 2017). Despite scrutiny at a national level, paradoxically every organisation has the liberty to develop a unique system for staff appraisals. The CIPD (2016) reported that processes have remained broadly static for the last 20 years. The scale used to assess quality from the NHS staff survey demonstrates the lack of a 'quality' appraisal for healthcare workers, although the assessment of quality is personal for the individual and may have some correlation to the organisation's process.

Although each organisation has the liberty to develop their own appraisal process there are some commonalities: usually a review of the previous year—what went well, what didn't go so well and then setting objectives for the next year. Objectives can be related to the overall corporate objectives, aligning to the strategy of the organisation or they can be more about individual achievements, including contribution to the team. Is this an appropriate model? Should issues only be addressed annually? What measurement is being used to assess the individual? How do you engage with the process when it's not relevant to a particular post? Many questions are apparent from appraisal systems with the structure, delivery, process and relevance. In fact, in accordance with Moon's (1993) summary of an appraisal, what constitutes a reasonable period of time? It could be suggested that annually is not good enough.

What Stops Managers from Having Worthwhile Appraisals?

Ultimately appraisals are a mandate of the organisation where alignment or synergy between strategy, operations and the ability of the workforce might dictate future prospects. Sometimes subjective views by an organisation with regards to performance can affect schemes such as 'pay per performance', and this

undermines the priority of the individual and personal development objectives. However, tangible performance metrics can get in the way of an appraisal as they are too focused on the organisation, rather than the individual. Does this result in a disengaged appraisee?

From an organisational point of view performance appraisals may be a miraculous panacea for many issues; however, this stands in stark contrast with the perception of employees, even high performing ones, that performance appraisals are frustrating, bureaucratic, highly demotivating and often unrelated to their job profile (Culbertson et al. 2013). The annual assessment and development plan can, to an extent, be treated as conflicting in the wider performance management function. How can an appraiser act as both judge and coach? How can an appraisee trust the appraiser enough to disclose areas of deficit knowing that it might affect job grade and promotional prospects?

> “FROM AN ORGANISATIONAL POINT OF VIEW PERFORMANCE APPRAISALS MAY BE A MIRACULOUS PANACEA FOR MANY ISSUES”

The changing landscape of organisational structures, which now consists of non-traditional permutations such as temporary work, semiautonomous teams and freelancing, further complicated by mergers, acquisitions and third-party service provisions, warrants an overhaul of the traditional appraisal process. Managers have to manoeuvre amidst such ‘murky waters’ with the added disadvantage of bearing restrictive constraints such as financial deficits, time-bound targets and resource shortages; all the while fostering a friendly environment. These other pressures can diminish the concept and importance of appraisals, which in turn are perceived negatively by the appraisee. Furthermore, the skills, views and the personality of the appraiser may be the cause of significant bias in an appraisal process and hinder a productive meeting for the appraisee. How can this be stopped though?

Considering the erratic and evolving nature of healthcare, change is always imminent. Therefore organisational objectives are prone to change, which in turn would affect the individual's objectives. The achievement of strategies and operational objectives relies heavily on the support of an effective workforce; further representing the need for a comprehensive system which is more responsive. From a healthcare organisational point of view, positive employee engagement is a priority; research suggests a correlation between happy staff and happy patients (Pinder et al. 2013).

Checklist for managers and leaders

- ☑ Have a simple process embedded periodically throughout the year, accumulating in the annual appraisal that focuses on the development of the individual for the future
- ☑ Provide opportunity for the organisation to update the employee on an individual level about any changes
- ☑ Encourage staff to regularly meet with their managers, whilst building trust and professional relationships
- ☑ Incorporate performance metrics at regular meetings using the data held by the organisation to identify trends, recognise good practice and agree personal objectives related to the specialism of the individual
- ☑ Encourage feedback, both positive and constructive providing evidence, emphasising confidentiality and trustworthiness so that relationships can develop and become increasingly productive
- ☑ Use the tools in the *Healthcare Leadership Model* (NHS Leadership Academy 2013) as an aide for all staff who wish to progress and develop themselves, regardless of role
- ☑ Provide protected time for regular meetings with your individual team members and encourage the flow of communication, with an overall aim to improve patient care and to create a better workplace

The Future of Appraisals?

Weightman (1996) identified that healthcare systems appraisals are interconnected—from job description, to objectives, to coaching, regular reviews and annual reviews that incorporate reward processes. However, this

does not address the concern of individuals, despite the suggestion being ideal. The matter of quality for individuals is pertinent to their engagement with the process and to ensure the improvement of an organisation. Therefore with the introduction of timely information digitally, should individual performance metrics be incorporated into regular and annual reviews? Is there an opportunity to have accurate detail on individual infection control compliance, patient satisfaction, skills used, outcomes of patients they were treating or caring for, and compliance or competence of their role? This would measure impact rather than activity, allowing clear information that's based on facts. This may be very useful for those members of staff who are at the top of their profession or grade, where progression and rewards are not necessarily available or an incentive. This model would present clear objectives that can be measured, rather than being a subjective account, which is likely completed by someone you seldom meet.

Conclusion

To improve appraisals, it is vital that the appraiser is the reporting manager of the appraisee and there is a simple system in place for dedicated time regularly throughout the review year. Setting these periodic reviews will ensure the recorded annual appraisal is competently informed. The appraiser should be appropriately trained to lead and manage people, as well as skilled in reviewing objectives and developing individuals. Contained in the Healthcare Leadership Model (NHS Leadership Academy 2013) a domain identifies that leaders should be 'developing capability' of their team. It implies there should be an ongoing process where trust can be built within a coaching environment, this will in turn improve the quality of appraisals for an individual. If issues of underperformance are recognised, this can then be addressed continually, rather than at an annual event. Staff are likely to be more perceptive to feedback throughout the year and have opportunities to improve before the annual appraisal. This could open the annual appraisal simply to agree previous meetings and actions, allowing emphasis at this meeting for ongoing development of individuals, ensuring that there is a focus on the future, rather than the past. ■

KEY POINTS

- ✓ Improvements in quality are required for healthcare workers' appraisals
- ✓ Annual appraisals are unsuitable for the changing environment of healthcare
- ✓ Leaders and managers are required to know their staff in order to complete a comprehensive appraisal
- ✓ Regular meetings would ensure a focus on the future, rather than the past

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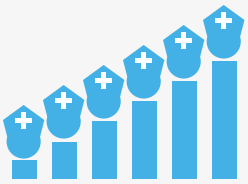
PEOPLE

HEALTHCARE IN U.S.

1 in 5

nurses would not choose their current careers were they given the chance to choose again



From October 2014 to October 2015, employment in healthcare increased by

495,000

jobs, the largest 12-month healthcare increase since the Bureau of Labor Statistics began providing such data 26 years ago

Source: The Director's Report: HR Healthcare 2017, https://iii.hm/c6s

By 2022,

1 in 8

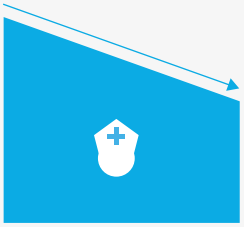
U.S. jobs is projected to be in the healthcare sector

36%

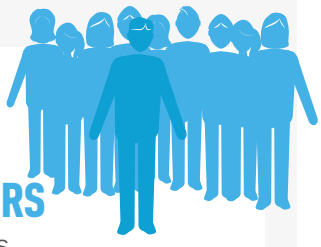
of the national workforce is millennial; by 2020, half the workforce will be millennial (Pew Research)

HEALTHCARE PERSONNEL IN EUROPE

The EU Commission estimates a shortage of 1 million health professionals by 2020, if action is not taken. A lack of health professionals will result in 15% of care services not being delivered due to lack of resources.



Source: Securing the Continuity of Medical Competence in Times of Demographic Change: A Proposal https://iii.hm/c22



KEY CHALLENGES & TRENDS FOR HEALTHCARE HR LEADERS

- Nurturing Effective Leaders
- Keeping Up with Regulatory Changes
- Making Employees Feel Cared for and Heard
- Making HR Digitally Savvy: HR Technology & Systems

Source: The Director's Report: HR Healthcare 2017 https://iii.hm/c6s

HOW TO ENGAGE STAFF

The 5Cs of Employee Engagement

Be Current	Be Consistent	Be Conducive	Be Challenging	Be Clear

Source: Doug Dickerson on Leadership https://iii.hm/c23

THE FUTURE OF TRAINING

By 2020, it's estimated that 60 percent of workers that receive tuition reimbursement will be enrolled in online programmes. MOOCs, or massive open online courses, will become critically important in the future of training, as they can serve hundreds, if not thousands, of employees at a time.

Source: The Future of Training Is Online https://iii.hm/c25

WHAT MAKES A GOOD HR CHIEF?

- Knowledge and Expertise in Human Resources
- Communication
- Time Management and Self Discipline
- Trustworthy
- Impartial and Objective
- Train, Develop, and Mentor

Source: What 6 Qualities Make a Good Human Resources Professional? https://iii.hm/c24

According to details from the German Medical Association, by the year 2019,

18,940

physicians will enter retirement due to their age.

Source: Securing the Continuity of Medical Competence in Times of Demographic Change: A Proposal, https://iii.hm/c26

Award-Winning Diabetes Clinic with VBHC Approach

Diabeter explains how a focus on best outcomes leads to cost reductions and an 'Olympic' team

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The 2017 Value-Based Healthcare (VBHC) Award, organised by the VBHC Center, Europe, saw 14 outstanding initiatives presented, but it was Diabeter that took the first prize.

Diabeter is a patient-centric, Dutch-certified clinic network that specialises in providing comprehensive and personalised care for children and young adults with type 1 diabetes (T1D).

Founded in 2006 by paediatricians Dr. Henk Veeze and Dr. Henk-Jan Aanstoot, Diabeter offers a value-based care model that is focused on diabetes patients, use of technology, eHealth solutions, and a unique patient experience. With more than 2000 patients in five locations across the Netherlands, Diabeter is one of the largest T1D clinics in Europe and is extending its network through collaboration.

HealthManagement.org spoke to Dr Henk Veeze about the award-winning clinic and how the extensive use of IT, a patient-centric approach, reduction in administration and personnel incentivisation have all contributed to a successful and sustainable VBHC model.

Did Diabeter start out in 2006 with the intention of adopting a VBHC model or did it evolve naturally to encompass this model?

The model evolved naturally. We wanted to fight silos in hospitals in order to create a multidisciplinary and organic team.

In a hospital there are numerous different teams dealing with space, money, patients and facilities. It is difficult with so many different team members to work together and impact effectively on progress of care. If you want to build a strong team, you have to centralise your focus.

When we set up Diabeter, Henk-Jan and I were already intuitively following a Value-Based Healthcare model which we have developed into a wider context.

We bought books on VBHC and gave them to our insurance company partners. We told them to read them and follow, as that was the path we were taking.

What role has technology played in Diabeter's care regime?

Without technology we couldn't do what we do. We need specialised, detailed medical records. In hospitals, general records for specialists are in use, but to be an Olympic team, you need to use specialised systems.

We also have access to more data. Devices have evolved. Previously, only glucose levels were measured, but today we have precise measurements on the whole period through continuous sensors, and/or all blood glucose measurements.

We are implementing very personalised care. For example, we have two to three million blood sugar points a year. All of the data comes into a system which enables us to observe patient profiles and can keep on top of how they are doing. The dashboard notifies Diabeter about any abnormalities.

This makes care and the care continuum more efficient. If you know your data in advance you can act more effectively than if you discover the situation when the patient is in front of you. I like to liken it to a plane maintaining a clear flight path. It helps us to maintain good health rather than struggle to fix it.

Measuring outcomes is critical in effective VBHC. How does Diabeter measure outcomes?

Care quality for children and young adults with type 1 diabetes is measured by the HbA1c level and the level of diabetes-related acute hospitalisations. On both counts, Diabeter routinely performs very well against international benchmarks.

We get a great deal of information on outcomes from the patient dashboard.

Strategically, there has been significant improvement in patient management. For example, we have seen streamlining in patient visits to doctors. Typically, a physician spends three-quarters of a consultation getting up to date on where the patient is in the care continuum. Through Diabeter's quarterly face-to-face intervention we have changed this to a focus on what can be achieved and how. This effectively gives the patient a healthcare goal which they appreciate. When the patient does revisit, they have usually achieved this goal.

We monitor this procedure and, if we see an improvement via the patient dashboard, we try to cancel the upcoming appointment or have a Skype update rather than a face-to-face meeting.

> “TO MOVE TOWARDS A VBHC APPROACH, BE BRAVE AND BELIEVE IN YOURSELF”

So basically we are going from routine face-to-face meetings between patients and doctors to Skype where possible. It makes care more efficient as face-to-face is more costly. This has worked out better for both patients and insurers.

How did you incentivise and continue to incentivise staff to work within a VBHC model?

It wasn't difficult. When we set up Diabeter, several nurses and dieticians followed us. Their attitude was that they were not just doing a job. They were excited about what we were doing and wanted to be part of a gold team.

Initially, we worked with one-year contracts so that both parties could assess the situation after 12 months and decide how to proceed. A long-term contract would not have worked in these circumstances.

This approach was a success and many staff are still with us. One of the most important ways we dealt with incentivising personnel was to build our own patient database system to deliver care management. Data related to patient age group and modalities are inputted along with performance of doctors and nurses. This creates a little bit of competition amongst personnel, but it is incentivising rather than demotivating.

VBHC focuses on the patient and, through that, ultimately impacts on healthcare finances through cost reductions. What sorts of cost savings has Diabeter seen because of its work?

To be honest, when we launched Diabeter, the goal was never to reduce costs. Our goal was to make care more efficient and better. We wanted to cut unnecessary visits and administration.

We took admin from nurses and transferred it to IT where possible. This has had the impact of enabling nurses to treat twice as many patients and, as staffing costs are some of the highest in healthcare, we saw an immediate reduction in expenses in this area.

Owing to the freeing up of time, effectively, in two years, we had four times the experience and implementation of expertise.

Through focusing on best care, we have achieved more with fewer personnel and reduced costs.

What advice would you give to hospitals, departments and clinicians moving towards a VBHC approach?

It's simple: be brave. Consider your direction and strategy very carefully, act accordingly and be loyal to it. Be focused and do not compromise where it matters. Above all, believe in yourself. ■

Groundbreaking Pain Management Initiatives in Europe

The Active Citizenship Network has launched a prize for good practices in pain management with the aim of showcasing successful initiatives across Europe.

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Four ground-breaking pain management initiatives have been recognised at an international event aimed at increasing awareness of the issue of patient pain and how to approach it effectively. The winners work in the categories of Clinical Practices, Patients' Empowerment, Innovation and Professional Education.

Chronic pain affects around 20 percent of the adult population in Europe yet it remains poorly managed and under-treated, affecting not only patients, but also society at large. It results in more than 500 million sick days per year in Europe, costing the European economy more than €34 billion and is responsible for nearly half of all absences from work lasting more than three days in Europe.

Pain management employs an interdisciplinary approach for easing the suffering and improving the quality of life of those living with chronic pain. The typical pain management team includes medical practitioners, pharmacists, clinical psychologists, physiotherapists, occupational therapists, physician assistants, nurse practitioners and clinical nurse specialists.

In 2014, for the first time at a European level, the issue of chronic pain was put on the agenda. It is of paramount importance that the public feels empowered to voice their support.

In 2015 after several years of work on this theme, the Active Citizenship Network (ACN), the European branch of the Italian NGO Cittadinanzattiva, started the first edition of the project known as "European Civic Prize on Chronic Pain - Collecting Good Practices", with the aim of providing evidence of existing good practices in the struggle against patient pain in several European countries.

The establishment of a "European Civic Prize on Chronic Pain", based on the selection of the practices presented by different healthcare stakeholders (patients' associations, health professionals, private and public hospitals and universities) provides an occasion for demonstrating what this community can offer in terms of experience which is useful in raising awareness about the condition, enhancing the body of knowledge of positive cases and success as well as strengthening commitment to this topic. This will be the first in a series of prizes awarded to celebrate progress in the treatment and management of chronic pain.

The project, realised with the support of Grünenthal GmbH and Pfizer Inc., gathered 30 'Good Practices' on cancer and non-cancer-related chronic pain from 11 different countries: Malta (2); UK (6); Spain (8); Portugal (2); Ireland (1); Italy (6); Germany (1); Denmark (1); Finland (1); Netherlands (1) and Russia (1). These practices were collected and published. The principal contributors were, first of all, national and European patient associations then universities and both public and private hospitals.

> "CHRONIC PAIN AFFECTS 20 PERCENT OF THE ADULT POPULATION IN EUROPE YET IT REMAINS POORLY MANAGED"

The culmination of this activity, last February, was a panel, composed of chronic pain international experts representing universities, healthcare professionals, providers' organisations and civic and patients' associations, who selected the four winners of the prize. The award ceremony was marked during the SIP - Societal Impact of Pain Symposium 2017 that was held in Malta in early June during the Maltese Presidency of the EU Council.

The Department of Physical Education and Sport, Faculty of Sport Sciences, University of Granada in Spain took the 'Clinical Practices' award. The project, named, "Physical activity in women with fibromyalgia: the al-Ándalus project" aimed to determine the role of physical activity on the development and treatment of fibromyalgia in female patients. A multidisciplinary team composed of Sport Scientists, Rheumatologists,

Winners and jury at the "European Civic Prize on Chronic Pain" award ceremony in June in Malta.

President of Malta H.E. Marie-Luise Coleiro Preca opened the Award ceremony.

Psychologists, Physiotherapists, Occupational Therapists and Biologists handles the project. A total of 646 patients with fibromyalgia and 314 non-fibromyalgia individuals participated in the project.

Beverly Collett, President of the Jury Panel, described the initiative as an "excellent well-organised collaborative project" that "incorporated sites outside of the traditional health care settings, such as private gyms and swimming pools and investigated a condition that is often neglected by healthcare professionals".

The Alleanza Cefalalgici Cluster - European Headache Alliance in Italy took the prize for Patients' Empowerment with its work on cluster headache (CH) patients.

A list of seven recommendations, or "7 Commandments", were devised by Expert Patients (EP) for physicians engaged in the cluster headache management with the purpose of improving their ability to take care of the condition. These commandments were used as a guide to propose pragmatic, patient-centred changes in healthcare services dedicated to CH patients.

"This work showed great innovation in gathering together expert patients in four countries across Europe to assist healthcare practitioners in the management of Cluster Headaches" Collett said. "It is a very well thought out submission on an uncommon, but important, painful condition. It is good to see everyone working together to highlight this condition, which, if recognised should improve the management of patients with this condition and improve their quality of life".

Collett described the winning project of the Innovation category as "truly innovative" and "very exciting". Contributed from San Raffaele Hospital in Italy and entitled "Non-pharmacological treatment of chronic pain: a multimodal approach", the project objective was the definition of an innovative neuro-rehabilitative strategy helping patients with chronic neuropathic pain to regain a correct somatotopic sensibility using a multimodal approach. The team combined virtual reality with neuropsychological support and placed the patient at the core of a multidisciplinary team composed of neurologists, neuropsychologists, neurophysiologists, neurosurgeons and physiotherapists all working in close interaction to provide patients with a personalised rehabilitative strategy.

The winner in the category of Professional Education was The Pelvic Pain Support Network (PPSN) in the UK. With a project named "Patients as Teachers in Health Professional Education", the PPSN charity has been delivering sessions on the Patient Perspective of pain to trainee doctors and nurses as part of the undergraduate curriculum at selected universities.

The objective of the work is to give the students the opportunity to learn about the personal experience of people with long-term pain regarding their encounters with health professionals. Patients, who are also experienced teachers, deliver the sessions giving students the opportunity to ask questions, delve deeper and thus gain insights at first-hand of the patient perspective.

"It's excellent that the patient and a family member have been involved as this does emphasise the family impact of pain," said Collett. "It shows good collaboration between patients, educators and clinicians".

For ACN, it is crucial to gather and share good practices, identify priorities and recommendations and to ensure the commitment of the patient associations, professionals and healthcare institutions. At the same time, it is also fundamental to raise awareness, fight stigma and not only improve quality of life for people suffering from acute and severe chronic pain but also

KEY POINTS

- ✓ Chronic pain affects around 20 percent of the adult population in Europe yet it remains poorly managed and under-treated
- ✓ In 2014, the issue of chronic pain was put on the European agenda for the first time
- ✓ In 2015, ACN started the project known as "European Civic Prize on Chronic Pain - Collecting Good Practices"
- ✓ The project gathered 30 'Best Practices' on cancer and non-cancer-related chronic pain from 11 different countries
- ✓ ACN decided to promote the first civic Hub-incubator of best practices against pain across Europe: the "Pain Euro-Mediterranean Coalition"

to reduce the socio-economic impact of chronic pain in Europe.

Building on this experience, ACN, along with the Spanish Foundation "Sine Dolore", decided to promote the first civic Hub-incubator of best practices against pain across Europe: the "Pain Euro-Mediterranean Coalition". This is effectively a platform for operators of good pain management practices.

The Coalition has the scientific support of the European Multidisciplinary Network in Pain, Research and Education / Efhre International University and 25 associations from ten countries have joined it.

The diversity of members within the coalition will strengthen collaborations among all the relevant stakeholders, thereby enriching European and national experiences, expertise, data and benchmarking on chronic pain. ■

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The Recertification Process of a Chest Pain Unit (CPU)

With chest pain a leading reason for an emergency room visit, what is new in training and recertification processes for chest pain units?

The chest pain syndrome remains a single leading cause for contacting an emergency unit (Hollander, JE et al, 2016). Chest pain units (CPU) are specialised units in the emergency room that handle patients with all forms of acute chest pain and discomfort. Beginning in 2008, the German Cardiac Society has outlined the minimum standards that certified CPUs must comply with. These guidelines were updated in 2015 and also refer to the recertification/reaccreditation process for previously-certified centres (Post et al. 2015). These specific criteria relate to the training of the medical personnel, the required diagnostic tools, the timing of the diagnosis process including laboratory testing, and the transfer of patients to the catheter laboratory or intensive care medicine units. The foremost goal of the certification process is to provide a standard of care throughout the country for the management of acute chest pain and to comply with the guidelines for the management of acute coronary syndromes (unstable angina, non-ST elevation myocardial infarction [NSTEMI], and STEMI). Large cohort studies have demonstrated that patients with undiagnosed or poorly-diagnosed causes for chest pain at primary presentation are under an incremental risk for cardiovascular events in the next years (Jordan et al. 2017). The implementation of a unified standard of care including diagnostic algorithms and treatment pathways is therefore compulsory for the optimal treatment of patients as well as for the reduction of costs. In this context, the continuous evaluation of CPUs as and the recertification process therefore allow for a precise statistical evaluation of the care quality. In this article, we outline the hallmarks of a CPU in relation to personnel/teaching, diagnostic tools and pathways, infrastructure and therapeutic pathways. Finally, we will comment on the recertification process.

Personnel

The CPU is implemented in a clinic for cardiology; the supervising physician has to be board-certified for internal medicine and cardiology. Trained medical personnel must be present and a board-certified

Figure 1: Typical Chest Pain Unit First Contact Room

> “CHEST PAIN UNITS (CPU) ARE SPECIALISED UNITS IN THE EMERGENCY ROOM THAT HANDLE PATIENTS WITH ALL FORMS OF ACUTE CHEST PAIN AND DISCOMFORT”

cardiologist must be available at any time. The training requirements for chest pain unit physicians particularly refer to the diagnostic skills in emergency echocardiography and resuscitation including intubation etc. (Post et al. 2015). Although not required, however in our opinion CPU physicians should be trained in emergency echocardiography as well as in emergency ultrasound particularly for the vasculature. These skills are complemented by assessment of pacemakers and extended ECG interpretation. In order to train and teach emergency algorithms it is furthermore necessary to conduct weekly team sessions to provide the usually large team with the necessary up-to-date knowledge. This includes special sessions for life support trainings (BLS, ALS) by certified instructors. Moreover, we conduct regular morbidity and mortality conferences in order to re-assess particular cases. In order to provide optimal CPU care, it is therefore critical to provide a teaching programme for each individual physician and for the whole team. Finally, the medical programme in a CPU must be closely connected to the intensive care department, the resuscitation team and the catheter laboratory.

Infrastructure

The CPU can be located in the cardiology department or can be implemented in a general emergency room environment. At least four monitoring units must be provided.

However, given the current patient numbers in most CPUs, six to eight monitor beds will be required at most centres. At a rule, one bed per 50,000 inhabitants should be provided. It should be advised that at least some of the monitor beds can be used for patients with multi-resistant bacterial colonisation. The CPU must be in close distance to the catheter laboratory, the radiology department (X-ray and computer-tomography) and the intensive care department (all within minutes). The following diagnostic tools must be immediately available (Figure 1): ECG, transthoracic and transoesophageal echocardiography, resuscitation

devices (intubation, defibrillator), and transport units (perfusor, oxygen, respirator).

Diagnostic Approach

Every patient with chest pain is assessed by a physician together with a blood test and an initial ECG (12-channel standard ECG, posterior leads V7-V9 and the right precordial leads). The results for cardiac enzymes (high sensitive troponin) must be available within 45-60 minutes and can be complemented by point-of-care testing. This is followed by an assessment of the cardiovascular history/symptoms and a complete clinical examination. A second testing after three hours (for high sensitive troponin) must be performed for all patients with pain lasting shorter than six hours. The results can be summarised in clinical scoring system, e.g. the GRACE score using eight parameters (e.g. age, heart rate, ST-segment deviations). This will help to determine at what time interval (immediately, within two hours, within 24 or 72 hours) a patient will have to be transferred to the catheter laboratory. We have established a control system at our CPU particularly for the blood test results. After blood taking, the nurse/physician confirms that blood samples are readily transferred to the central core laboratory. Results are transmitted by telephone to the physician on call and timing is registered for every sample. We have furthermore developed a one-page CPU report including all relevant results for each patient (cardiac enzymes, symptoms, echoparameters, X-ray results, GRACE score). Following this initial assessment, the patient is either dismissed with referral for non-invasive stress testing within one to three days or treated according to the standard therapeutic algorithms that should be available in the CPU and to the complete staff. The German Cardiac Society requires therapeutic pathways for acute coronary syndromes, rhythm disorders, pacemaker/ICD malfunctioning, pulmonary embolism, aortic syndromes, heart failure, hypertensive emergencies, resuscitation, prevention and syncope.

The Recertification Process

This process follows the identical rules set out for first-time CPU evaluations. After a formal proposal to the German Cardiac Society, the CPU is evaluated by the society by local visitation. This includes the infrastructure as well as a reassessment of the required timing (laboratory testing), personnel skills and certifications, regular team meetings and morbidity and mortality conferences and the therapeutic algorithms.

> “THIS PROCEDURE SIGNIFICANTLY IMPROVES THE CARE FOR CHEST PAIN PATIENTS AS IT AUTOMATICALLY PROVIDES STANDARDISATION”

The process is finished if all requirements are fulfilled. In our opinion, this procedure significantly improves the care for chest pain patients as it automatically provides standardisation for the diagnostic and therapeutic procedures throughout the country. This also requires cardiology departments to re-evaluate their infrastructure continuously and to reassess the interrelation with the resuscitation team, the radiology department, the catheter laboratory and intensive care unit.

Adherence to guidelines in certified CPUs (Breuckmann et al. 2016a; Breuckmann et al. 2016b) significantly improves the outcome for acute chest pain patients (Varnavas et al. 2017). Particular attention must be directed to adequate scoring and risk profiling of troponin-negative and positive ACS patients in order to ensure the guideline-conforming care. ■

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Accurate **on-the-spot decision making**

when time is critical

For chest pain patients every moment counts. The sooner Acute Coronary Syndrome can be diagnosed, the sooner a patient can receive life-saving treatment or be discharged. Using just a single blood droplet from a simple finger-prick, Minicare I-20 gives lab-comparable results for cardiac troponin-I (cTnI) within 10 minutes at the point-of-care. The availability of the Minicare cTnI result in the ambulance supports decision making for referral prior to reaching the Emergency Department, allowing for better ambulance and hospital resources utilization.

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eCardiology

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What to expect from the 4th Congress on eCardiology and ehealth in Berlin. November 2017.

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As the 4th congress on eCardiology and eHealth approaches, *HealthManagement* spoke to congress director, Prof. Hugo Saner, to learn more about the congress and his thoughts on developments in ehealth and ecardiology.

The European congress on eCardiology and eHealth has the goal of connecting clinicians and technology to implement eHealth in daily practice. How has the congress made progress on this goal?

The integration of ehealth and telemedicine into clinical practice can only be successful if the major stakeholders are communicating and working closer together. With each congress edition we made a great step forward in this direction. The first congress, in Bern, Switzerland in 2014, had about 100 participants and 25 abstracts. Last year's congress in Berlin had 460 participants and close to 100 abstracts. We were really able to connect people and interests from different stakeholders. About half the delegates were doctors and researchers; close to half were from developers or from industry. We have been able to achieve our goal to focus on clinical applications and evaluation and integration of ehealth and telemedicine into the healthcare system of today.

What have been the congress highlights?

We have more and more speakers from around the world; last year we had speakers from South America, Africa and Australia. The highlight for me at the last congress was the Young Investigators Award session where we saw really excellent research. They created great enthusiasm, the room was crowded and there was a great atmosphere. The other highlight was that the general feedback of the participants was excellent. More than 80% of participants found the congress good or very good. A major asset of the congress, the one thing that makes it unique, is the combination and cross-fertilisation between two worlds, cardiology and digital technical solutions.

What are you looking forward to at the next congress?

A new format called cross-sessions. In the same session we will have representatives from industry and from medicine and health. We declare conflicts

of interest so that we are ethically correct. Other medical congresses don't do that, and we try carefully to foster this exchange between the medical world and industry with this format and aim to have good discussion between the different stakeholders.

What are the most promising ehealth/mhealth/phealth applications for cardiology?

These include prevention and lifestyle interventions. You can reach many people through smartphones with preventive messages and encourage a healthy lifestyle. There are applications for chronic disease management, including heart failure, hypertension and diabetes, and there are many ongoing studies in this area. There are applications for arrhythmia detection, including early detection of atrial fibrillation and telemonitoring of devices such as pacemakers, implantable cardioverter defibrillators (ICDs) and telerehabilitation. There is good progress and ongoing research in all these areas.

What are the challenges in ehealth/mhealth/phealth in cardiology?

The major obstacles to the integration of ehealth and telemedicine into daily clinical practice include limited large-scale evidence. We have very few large-scale studies and there is a lack of studies in particular for cost-effectiveness. There is also lack of interoperability of systems. We have in most countries an inadequate or fragmented legal framework and, most importantly, lack of reimbursement. The major problem is that the development is technology driven and comes from outside of the medical community (not bottom up). Therefore we have a huge gap between technical development and real clinical application. The congress tries to help to close this.

Some recent trials in remote monitoring in heart failure patients have had disappointing results in terms of improving patient outcomes. Please comment.

The problem is that there is a great heterogeneity of patient selection and in the surveillance method using sophisticated devices—by monitoring weight, blood pressure and electrocardiogram or by remote monitoring of these parameters as it is done in the telemedicine heart failure (HF) centre of Prof. Friedrich Koehler in Germany. I think we are looking for too sophisticated a solution. If you can monitor weight, blood pressure and heart rate and you can improve adherence to medication then you have a chance to be successful in the majority of patients. Remote Management of Heart Failure Using Implantable Electronic Devices (REM-HF) (Morgan et al. 2017) is too sophisticated for the majority of HF patients, and way too expensive. Surveillance of the key parameters is the key factor of success for a certain percentage of patients.

Big data is an important aspect of ehealth. What promising applications do you see for big data in cardiology?

There are two promising applications, in research and in personalised medicine. We have a huge amount of data in hospitals as medical records, and in labs. When we are able to connect these data then we can find out common patterns in medicine and even connect this information to genetic testing, which will then result in more personalised medicine, the two big areas for big data.

How can different disciplines work together in cardiac rehabilitation?

We founded ambulatory cardiac rehabilitation in Switzerland more than 30 years ago. When I started, we had sanatoriums and stationary rehabilitation. Today we have 64 ambulatory cardiac rehabilitation programmes, 36 ambulatory diabetes rehabilitation programmes and several ambulatory rehabilitation programmes for patients with peripheral artery disease and neurological problems. Most hospitals have the most important disciplines for cardiovascular rehabilitation including physiotherapy, exercise therapy, smoking cessation, counselling and psychological support. In cardiology and in particular in cardiovascular rehabilitation, the idea is that these disciplines should work together, because the risk factors for neurovascular, cardiovascular and peripheral artery disease are the same and need the same medication and lifestyle modification. It needs to be organised on a local level by bringing the different disciplines together. ■

The 4th European Congress on eCardiology and eHealth will be held in Berlin, Germany, from 8-10 November 2017. For more information, visit **e-cardiohealth.com**

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New Philips Technology to Empower Emergency Departments

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Philips innovation in advanced health technology is delivering next generation Minicare point-of-care-in-vitro diagnostics systems to help support improved clinical decision-making that will ultimately benefit physicians, patients and hospital systems.

Such devices can help deal with the biggest issue that emergency departments face on a daily basis — overcrowding. In emergency settings, accurate blood test results are required as fast as possible in order to determine the best intervention when the patient needs it the most.

These days, waiting for such test results can take up to an hour or even longer, delaying patient diagnosis and treatment initiation. This, in turn, inevitably leads to the overcrowding issue within emergency departments all over the world, and essentially affects operational efficiency.

The addition of Minicare I-20 point of care testing helps quicker on-the-spot decision-making and, as a result, faster initiation of appropriate intervention/treatment. It also has the potential to integrate the blood test-generated data into hospital and lab information systems.

Minicare I-20 enables blood testing using just a single droplet of blood. The simplification of analysis procedures without affecting the accuracy of results has been a key factor in the development of this device. Lab-comparable results are available at the patient's bedside within 10 minutes. Minicare I-20 works with Magnotech technology (magnetic nano particle technology), a Philips proprietary technology incorporating over 100 patents. The incorporated smart Magnotech technology enables rapid, reliable clinical decision-making at the point of care.

When time is critical, near-patient testing can support better patient management and improve the patient's experience. Naturally, it also helps medical specialists make accurate decisions on the spot. Minicare I-20 overall opens up opportunities for optimising clinical workflow, enhancing patient experience and improving cost control.

How efficiency can be improved

Healthcare without the development of empowering technologies would be unimaginable these days, since it no doubt plays a huge role in how experts make clinical decisions as well as its importance in providing near-patient testing. Efficiency is also key in solving the overcrowding issue in EMDs.

"Ready when you are" is Philips' motto in in-vitro diagnostics point-of-care testing. This way, we can allow on-the-spot decision making, which in case of suspected critical heart disease, involves a physical examination, a lab test and its results accessible to the doctors, as well as the performance of an ECG on-the-spot so that in 15 minutes, a decision can be made: is this a critically ill patient that we need to treat, or is this a non-critically ill patient?

The other big improvement will be when lab managers, cardiologists and physicians get much closer to the situation so that they can understand their ultimate needs. By working together, these medical experts can minimise the overcrowding issue as well as ensure that doctors have quick access to test results and can respond accordingly.

There needs to be a whole range of diagnostics point-of-care tests to support the doctor in making a critical decision in 15 minutes. This ties in with the launch of the Philips Minicare H-300 (a novel point-of-care haemostasis system to aid in the diagnosis and monitoring of coagulation abnormalities) and the Philips Minicare C-300 (delivering lab comparable results for an extensive range of chemistry parameters), and our key focus is to highlight this part of the portfolio.

With regard to the Minicare H-300, in critical care settings, such as heavy bleeding, trauma or major surgery, it can be crucial for the physician to know the accurate coagulation status of a patient. The test can deliver real-time insights in the whole blood haemostasis status of a patient, which can support and enhance the clinical decision making of physicians.

Overall, the expansion of the Philips portfolio opens up opportunities for optimising clinical workflow, enhancing the patient experience and improving cost control. When these types of products are developed, it can help save lives. The portfolio is a motivation in itself for the whole team to continue to develop innovative, advanced products. This also increases patient satisfaction since nurses can run these tests thus saving time. This is a testament to Philips'vision of improving people's lives with meaningful innovations and bringing in-vitro point-of-care testing close to the patient. And this is one of the many reasons why Philips can act fast, and engage in the aim of "touching 3 billion lives a year by 2025". ■

DISCLOSURE:
"Point of View" articles are part of the HealthManagement.org Corporate Engagement Programme

The TUBE Approach to Perioperative Point-of-Care Ultrasound

Anaesthetists working in perioperative medicine have increasingly taken a whole body approach to patient evaluation known as TUBE – Total Ultrasound Body Examination – thanks to the development of point-of-care ultrasound. Dr Christophe Aveline, Consultant Anaesthetist in critical care and surgery at the Sévigné Private hospital in Rennes, is an advocate of TUBE and works closely on its adoption with the European Society of Regional Anaesthesia (ESRA) and the French Society of Anaesthesia and Resuscitation (Société Française d'Anesthésie et de Réanimation SFAR). He discusses the importance of the TUBE approach for anaesthetists who specialise in patient care in surgical and emergency procedures, as well as intensive care.

Dr Christophe Aveline

The Sévigné Private hospital in Rennes offers oncology, haematology, surgical and emergency services for more than 20,000 patients a year, covering trauma and orthopaedics, thoracic, abdominal, urological, ophthalmic, reconstructive (breast) and ENT surgery. It has a mixed surgical and medical perioperative department, with eight beds dedicated to postoperative continuous care, plus eight in intensive care. These are almost exclusively used for patients who have undergone complex thoracic, abdominal and orthopaedic or spinal procedures, and trauma patients.

The site's team of 15 anaesthetists take daily charge of patients in the emergency department, intensive care and surgical theatres, as well as those needing perioperative consultations. We routinely use ultrasound for venous access, regional anaesthesia, and cardiac and pulmonary evaluations, performing upwards of 40 procedures every day on our point-of-care equipment; it is an essential tool for today's anaesthetist, helping them to care for patients and follow recent recommendations.

Historically, anaesthetists first began to use point-of-care ultrasound for guiding regional anaesthesia and, in the last five years, they have become knowledgeable and skilful in this different approach to performing and interpreting scans at the patients' bedside. We now use point-of-care ultrasound to answer complex questions about our patients. For example, when a patient is admitted to the emergency department with a fractured hip, the first use of ultrasound is to treat the pain with a guided femoral nerve block, then a full evaluation looks at the lungs, the heart, volaemia, and for a distended bladder. This kind of injury is often seen in older patients, who may have underlying comorbidities, such as cardiac or pulmonary problems, or are on many different treatments. Looking for major cardiorespiratory dysfunction reduces the risk of medical complications related to or aggravated by the injury, and optimises patient care under anaesthesia. Similarly, in trauma patients, point-of-care ultrasound allows us to look for intra-abdominal, retro-peritoneal and pleural effusions, or pneumothorax, to evaluate the presence of pulmonary oedema and pneumopathy. Evaluating blood volume guides vascular filling in cases of hypovolaemia. This whole body approach, known as TUBE, delivers a strategy for evaluating lesions and analgesia. Ultrasound also gives us information on the presence of a distended bladder that may need to be drained.

Guiding regional anaesthesia is a major application of point-of-care ultrasound. Other applications have also been developed, such as guiding difficult intubations, or selective intubations for thoracic surgery. In general, we only use regional anaesthesia in isolation for localised limb procedures, although it may sometimes be used to treat other surgical procedures (breast, thoracic, abdominal: thoracic and abdominal wall, epidural space, paravertebral blocks) or chronic pain in hospitalised patients following thoracotomy or other major surgery. The combined use of regional and general anaesthesia is common in thoracic and abdominal surgery, for example, for investigating the perimedullary space. This last point is important to help avoid misplacement of punctures using a 'blind' approach; ultrasound allows a reduction in the number of punctures. 65% of our patients have ambulatory surgery, the others are urgent cases or need to stay in hospital because of a major procedure, or due to the presence of several comorbidities. Long-term perineal catheter placement may be an effective strategy for testing or reducing chronic pain. Ultrasound makes it

possible to optimise the positioning of the catheter and to secure it with respect to the adjacent vascular structures.

Young doctors in training during their six month internship with our team participate in ultrasound demonstrations to improve the basic techniques learned during their university studies. Our role as experienced anaesthetists is to supervise and help them to apply this knowledge in real-life situations. Our teaching is not limited to regional anaesthesia, and includes all point-of-care procedures. We also teach them the order in which to follow a procedure so that nothing is missed or goes wrong.

The three FUJIFILM SonoSite S-Nerve™ devices are used daily and valued for their simplicity of use and quick start-up, their mobility, their robustness and their efficiency, as well as for the 2D modality, time-movements and Doppler function. We are often called to go to emergency or intensive care to evaluate a patient who is difficult to mobilise, and the devices give a real 'point-of-care' solution. They are ideally suited to the TUBE protocols we perform; we are convinced that this approach will rapidly become a medical necessity. Currently more than 50% of our patients benefit from point-of-care ultrasound as part of a general clinical evaluation. ■

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Harmonisation of Lab Medicine Across Europe

Under EU Directive 2013/55/EU, harmonisation of lab medicine across Europe could lead to an exchange and spread of skills and expertise and better patient outcomes.

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In the last few years there has been a continuous growth in the awareness of the importance of harmonisation of professional qualifications across the European Union (EU) in all medical fields. EU Directive 2013/55/EU acts as a passport for personnel seeking to work in other EU states for professions that can work to the Common Training Network.

One area where harmonisation is critical is laboratory medicine; harmonisation is a fundamental aspect of quality and its main goal is to provide a better patient outcome producing comparable laboratory information regardless of the origins of the data.

With lab medicine harmonisation firmly on the EU agenda, it featured as the topic of the opening session at EuroMedLab held in Athens in June and attended by HealthManagement.org. Speakers at the session were Wim Huisman, previous Head of the Clinical Chemistry and Haematology at Medical Centre Hoagland in Leidschendam, Ana-Maria Simundic, Professor in the Medical Department of Medical Biochemistry at Zagreb University, and Elizabeth Topic, Professor of Medical Biochemistry at the Faculty of Pharmacy and Biochemistry at the University of Zagreb and Chair of the European Federation of Clinical Chemistry and Laboratory Medicine (EFLM), Gilbert Wieringa.

Several key points came out of the EuroMedLab lab medicine harmonisation session.

Snapshot Overview

Although the focus is mainly on the standardisation of measurement procedures, the depth of harmonisation goes beyond method and analytical results: it includes all other aspects of laboratory testing (pre-analytical, analytical, and post analytical phase). It embraces various aspects of the profession: from laboratory accreditation to professional development, to the recognition of laboratory medicine specialists in Europe. Freedom of movement for workers, recognition of vocational training qualifications, diplomas and professional qualifications are fundamental to the Directive.

More widely, the Directive provides a framework on administrative cooperation, information systems, right of establishment and the single market.

Recognition of risks

If professionals are moving across the EU borders, it is essential to be able to make surrounding EU states aware that there may well be risks. Many professionals who go to work abroad are told they have to undergo an adaptation period including possible aptitude tests.

The receiving country needs assurance from the host country that there is a minimum level of knowledge and skills that can be demonstrated. This has been recognised by the EU for many years.

Roadblocks to Increasing Professional Mobility

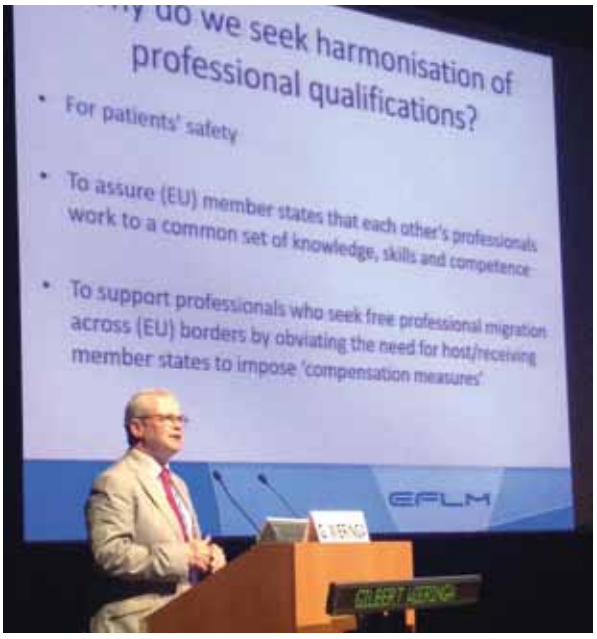
Under EU Commission Directive 2013/55/EU, the Recognition of Professional Qualifications harmonisation would extend opportunities for specialists to practice in other EU countries without having "compensation measures" imposed on them.

This involves not having to deal with re-taking local professional exams which, in turn, could lead to a more effective distribution of skills and resources across the EU. EU Commission Directive 2013/55/EU provides a passport to professional migration across EU borders for professions that can work to a Common Training Framework. This allows various EU states to identify the essential knowledge, skills and competence needed to practice at a particular level. If a training framework is clearly defined, then it can potentially be adopted by another EU community that can essentially provide a professional passport to travel. This provides an enormous opportunity for specialists in lab medicine.

Language Barriers

There is an obvious potential roadblock to effective harmonisation; language.

If a professional wants to go and work in another country, then the destination language needs to be



> "HARMONISATION ENSURES THAT LABORATORY MEDICINE IS PRACTISED TO COMMON STANDARDS, SO THAT PATIENT SAFETY IS PROTECTED"

learnt. The problem of language precludes the possibility of sharing clinical and administrative documentation easily across Europe.

Analytical tests use different methods that may not have been 'harmonised' or which may have different units of reporting. Inevitably the assumption made by clinicians is that the different numbers can be compared but this has the dangerous potential for misinterpretation of results and adverse patient outcomes.

Action Needed

The importance of harmonising the recognition of professional qualifications ensures that laboratory medicine is practised to common standards, so that patient safety is protected across any EU country. Through an understanding of the risks to patients undergoing laboratory testing, standardised operating procedures can be developed to reduce laboratory error and improve patient safety.

What was evident at this EuroMedLab session was the need to achieve a uniform accreditation system in Europe, the importance of promoting the free movement across European borders of laboratory medicine specialists assuring that competencies are practiced at an equivalent high quality level. The time frame for implementation of the directive, however, is not firm.

There is an opportunity through harmonisation to support individuals, support the community and, ultimately, raise the profile of lab medicine. It remains unclear how long the harmonisation process will take, though the key lab organisations are maintaining close contact with its leads at the EU Commission. ■

KEY POINTS

- ✓ EU Directive 2013/55/EU freedom of movement for workers, recognition of vocational training qualifications, diplomas and professional qualifications are fundamental to the Directive.
- ✓ Harmonisation is firmly on the agenda of the European Federation of Clinical Chemistry and Laboratory Medicine (EFLM)
- ✓ There is a growth in awareness in the EU of the importance of harmonisation of professional qualifications
- ✓ Harmonisation in laboratory medicine is critical
- ✓ Harmonisation could lead to beneficial skills and resources distribution around EU
- ✓ Lab medicine harmonisation embraces all aspects of the profession
- ✓ Country receiving cross-border staff needs assurance that skills are up to par
- ✓ An EU training framework could provide a universal approach to training and qualifications issue
- ✓ Non-harmonised analytical tests could lead to misinterpretation

Clinical Laboratories in Brazil

Integrated Diagnostic Centres That Favour the Patient-Centred Model of Care

Brazil has been operating fully-integrated labs for years with a model that has potential for cross-border implementation.

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Private clinical laboratories in Brazil tend to be somewhat different from their counterparts in Europe, the U.S. and Asia. In Brazil, especially in big cities and metropolitan areas such as São Paulo and Rio de Janeiro, fully-integrated diagnostic laboratories are common in the private healthcare system. These labs are composed of several patient service centres spread over the cities where not only specimens for Clinical and Anatomic Pathology tests can be collected, but also several Imaging and Radiology exams. Additionally, functional tests from different medical specialties, such as Cardiology, Gastroenterology, Gynecology, among others, can be performed by subspeciality physicians.

This model has been developed since the 1980s, when the scope of the patient centre units started to be broadened by the installation of the first radiology machines in the facilities where primarily only blood, urine and other clinical specimens were collected. Such an approach made it easier for patients to have all their tests performed in the same place which was appreciated given the urban mobility challenges that were starting to become relevant at that point. Over time, several types of functional diagnostic tests were added to the patient service centres, increasing convenience for patients for one side, and the potential for the integration of diagnostic tests from several medical specialties for the other, as physicians from different specialties were working under the same roof.

Among the main advantages of this model are multidisciplinary discussions and collaborative teamwork, allowing for the development of high-level expert physicians in several diagnostic areas. In addition, it enables the delivery of fast, high-quality and integrated diagnostic solutions that favour the patient-centred model of care. The importance of diagnostic integration has increased, with the growing complexity brought about by the technological advances in all medical specialities, in recent years. Besides physical proximity, it requires dedicated information technology resources for multisystem integration: LIS (laboratory information system), RIS (radiology information system), PACS (picture archiving and communication system), among other information technology tools. This framework facilitates meetings and discussions among experts from different diagnostic areas and platforms and diagnostic conclusions can be enriched with information about prognosis, or with suggestions about further relevant investigations to direct the treatment decisions in accordance with the most recent clinical evidence. This can then be communicated to the attending physician.

> “WE FEEL PREPARED TO DEVELOP OUR MODEL, IN SUCH A WAY THAT IT WILL POTENTIALLY BE USEFUL FOR OTHER COUNTRIES”

Over time, one-stop solution services for discrete niches of patients have been implemented, focusing on the diagnostic investigation of specific clinical conditions. Individuals with thyroid nodules, for instance, can have the ultrasound, fine needle aspiration and cytology examination by the pathologist performed at the same visit, leaving the patient centre with the final report in hands. Pregnant women have a dedicated service in some facilities, where all tests on the different phases of pregnancy can be performed at the same facility. Women with breast nodules can be submitted to a similar investigatory workflow, saving time and resulting in a conclusive diagnosis. As an additional advantage of this approach, diagnosticians have the opportunity to double check and cross validate test results. Findings from mammograms can be cross-validated with findings from breast ultrasounds, for example. Such situations have been regarded as valuable opportunities by physicians, as they provide timely and accurate feedback for continuous learning and expertise development. Integrating diagnostic data provides the consistent feedback required for the development of skilled diagnosticians, who can thereby increase the likelihood of becoming recognised experts in their fields.

More recently, the ever-increasing complex urban mobility issues of big cities in Brazil have risen in parallel with the growing complexity and growing demands for integration and interoperability of the healthcare system. Because we have been dealing with such integration for several years in Brazil, we feel well prepared to further develop our model, in such a way that it will potentially be useful for other countries. ■

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Makerspaces

An Opportunity for the Future

3D makerspaces could help hospitals to enter the world of 3D technology without needing a big budget and employing expensive specialists.

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Olaf Breuer is a television engineer living in Portugal. He is owner of a 3D printing and rapid prototyping studio and also freelances as a Pro AV expert.

We have all heard about 3D printing, and the first hospitals have already begun to integrate this technology into their everyday business.

Prostheses made of plastic compound materials are being tailor made. CT scans are printed out in 3D for educational purposes, and in preparation for complicated operations meanwhile even the first organs such as an entire ear can be printed.

Some of the applications of 3D printing are still in the beta phase. The required hardware is very expensive and needs skilled personnel However, other applications are widely accepted and used and the needed hardware is affordable.

Nevertheless, to make use of this technology we need to invest in 3D printing know-how and hardware. We do not even know the exact use and for which cases, so we need to have consultancy from a 3D expert upfront.

This is where so called "makerspaces" could play an important role for hospitals.

What is a Makerspace?

A makerspace is a unit where modern technology like 3D printing, scanning and drawing, computer numerical controlled (CNC) milling and modern robotics meet skilled people. Some makerspaces are owned by universities, some by companies and others are privately owned or non-commercial. They are already spread around the globe and every big town has at least one.

Here we have to differentiate between commercial and non-commercial makerspaces.

In contrast to commercial ones, a non-commercial makerspace would not be able to commercialise their services or handle a more intense partnership.

The basic business model works like this: as a private person you pay a monthly fee to bring your idea, your project to life with the help of skilled personnel. As a company the costs depend on many factors, but still bear no comparison to hospital in-house solutions.

Sometimes engineers, sometimes so called "makers" help you design and materialise what you need. Companies also make use of these makerspaces, often also called "hackerspaces". Today, projects and new products have to be brought to market instantly. Where only five years ago we needed two to three years from a first prototype to a product that is ready to enter the market, we are now able to do this within months. We call this rapid prototyping.

Some companies have their own makerspaces in house, mostly called industry labs. For example, IBM hosts its own industry lab in their recently opened Watson Internet of Things centre in Munich, which is one of the most innovative spaces in this area (see photo on next page). They brought together engineers and technicians from different areas of expertise to help their clients win the race against time in today´s product development business.

From my perspective, there should be a close partnership between hospitals and makerspaces as well. There are many applications where makerspaces could help a hospital to enter the world of this technology without the need for a big budget and employing expensive specialists. Makerspaces are skilled, fast and can produce unique items for reasonable prices.

The Praxis

Let me give you an example of what I am talking about: At last year`s "makerfaire" in Lisbon, Ricardo Perreira (**ricardopereira.org**) from Porto asked me to do a 3D scan of a child's forearm. The five year old boy lost his left hand in an accident and needed a prosthesis. Ricardo did a plaster cast from the forearm and I handed the data from its 3D scan back to him. Having this data available, he could adapt a 3D model of a prosthesis for the child and print it out the next day. Within two days of this exhibition the child had a tailor-made prosthesis for his forearm, leaving his father with tears in his eyes. There are lots of different 3D models of prostheses already available for download on the internet, which only need adaptation.

Mario Saleiro (**sandworx.com**) from the University of Faro obtained the CT scan data from a scan of his head, converted this data and printed out his entire set of teeth. His dentist then used this print to better understand his jawbone problem.

So the data from 3D scans can be more or less directly used to print parts from it. This can also be done in translucent materials.

Image credit: Olaf Breuer

IBM Watson Internet of Things centre, Munich, Germany

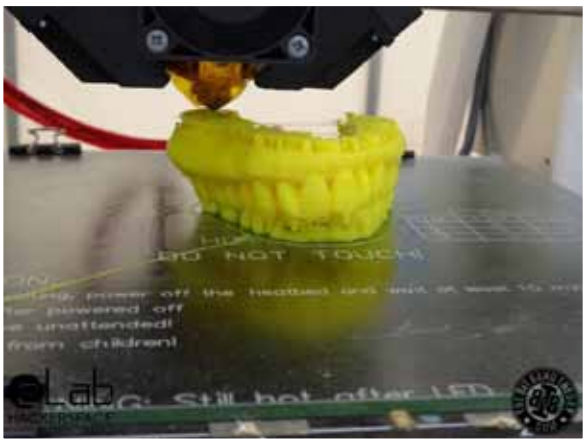

Image credit: Mario Saleiro

Teeth printout helped the dentist understand a jawbone problem

> "CREATE A WIN-WIN-WIN SITUATION FOR YOUR HOSPITAL"

Can These Parts Break?

A question often asked is how strong can a 3D printed part be. This depends on the quality of the print, its material and on the type of 3D printer used. There are plastic materials like ABS, PLA or PETG for example. Their Rockwell hardness and flexibility is all different and it is hard to compare it to an injection moulded part. The main difference is that usually 3D printed parts are not printed in full material. They normally have a structure inside like a honeycomb, which makes them very lightweight and strong.

There are also compound materials: combinations of plastic and reinforcing materials such as carbon fibre, for example. With these compounds, extraordinary strength can be achieved. A lot depends on layer bonding and thus arranging layers in the correct direction of the main forces. Liquid resins and powders are also available with different properties. A perfect choice of the right material is key.

What Types of 3D Printers are Usually Found in Makerspaces ?

The four main types of 3D printers we can find in makerspaces are:

1. Fused deposition modelling (FDM) printers, which melt a plastic wire to build layer upon layer
2. Stereolithography (SLA) printers, which cure liquid resin to build the layers
3. Selective Layer Sintering (SLS) printers that use a powder to build layers, and
4. Syringe printers, which dose a liquid-type material that hardens in free air or in an oven

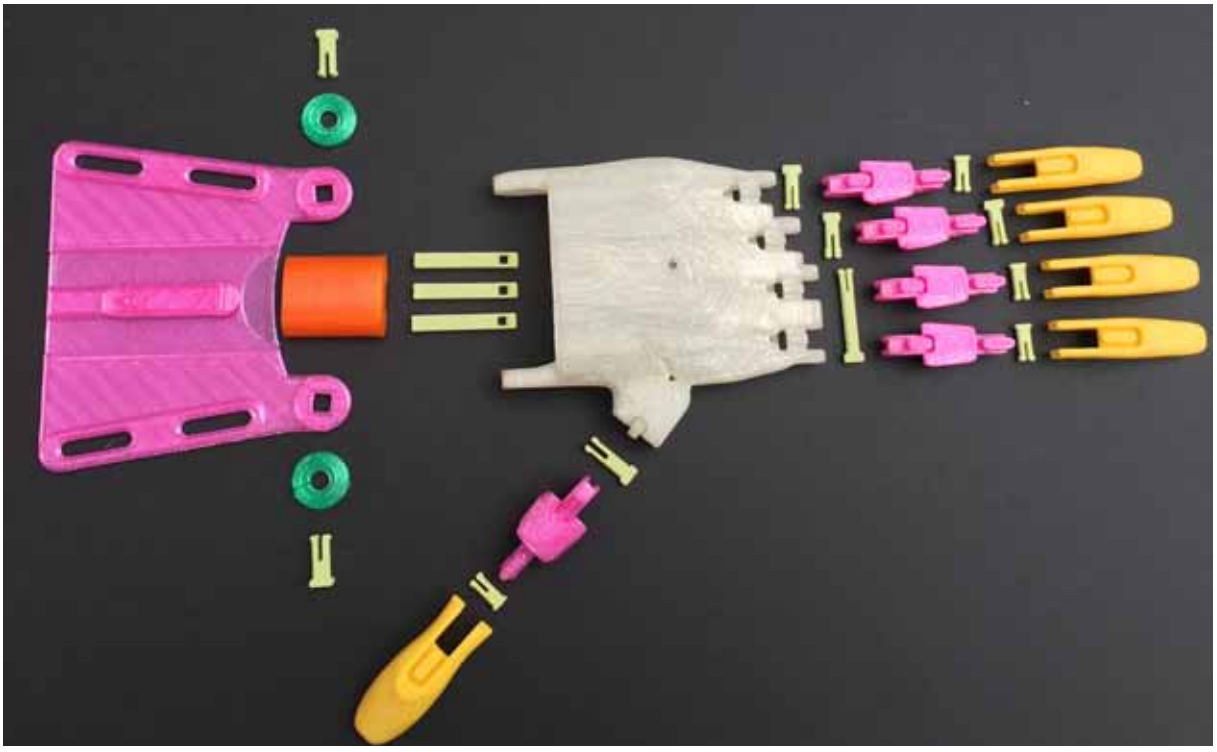

Image credit: e-nable.fr

3D printed hand prostheses

For prostheses we usually use FDM printers as the end products have the most strength, though having typically visible layers. For models used for education or research background one would use SLA printers with transparent resin, which results in a nearly transparent result, though not as strong as FDM.

SLS printers are the most expensive. They can transform powder containing different materials into extremely strong parts. The cheaper printers can only melt materials with a lower melting point, leaving a slightly rough surface without any visible layer, whereas the best ones can even use powder-containing metals.

KEY POINTS

- ✓ Makerspaces are physical units where modern technology like 3D printing, scanning and drawing, computer numerical controlled (CNC) milling and modern robotics meet skilled people
- ✓ Makerspaces can be commercial or non-commerical, and most large towns have one
- ✓ Makerspaces can enable hospitals to print in 3D without needing a big budget or expensive specialists
- ✓ Practical examples are given of use in healthcare
- ✓ Materials used and printer types are explained

Conclusion

Not only will doctors love these new opportunities, technical maintenance teams will do so too. Broken mechanical parts that are hard to get or take a very long time to be delivered or those which are extremely expensive can be reproduced with the help of a makerspace. Small problem solvers can be designed to help improve everyday business.

In many parts of the world prostheses are very expensive for the patient, and when it comes to children, these technical aids have to be replaced several times during their childhood. In makerspaces the costs for such tasks like scanning and printing are in the range of tens or hundreds, but not thousands of euros or dollars.

Private individuals are beginning to discover these spaces for themselves, but it would be much more efficient and professional if a surgeon could give guidelines to the architect of a plastic hand.

The main potential of 3D printing lies in the vast variety of things you can do with it. Go forward, explore them and create a win-win-win situation for your hospital, makerspaces and, not to forget, in the end for the patients themselves. ■

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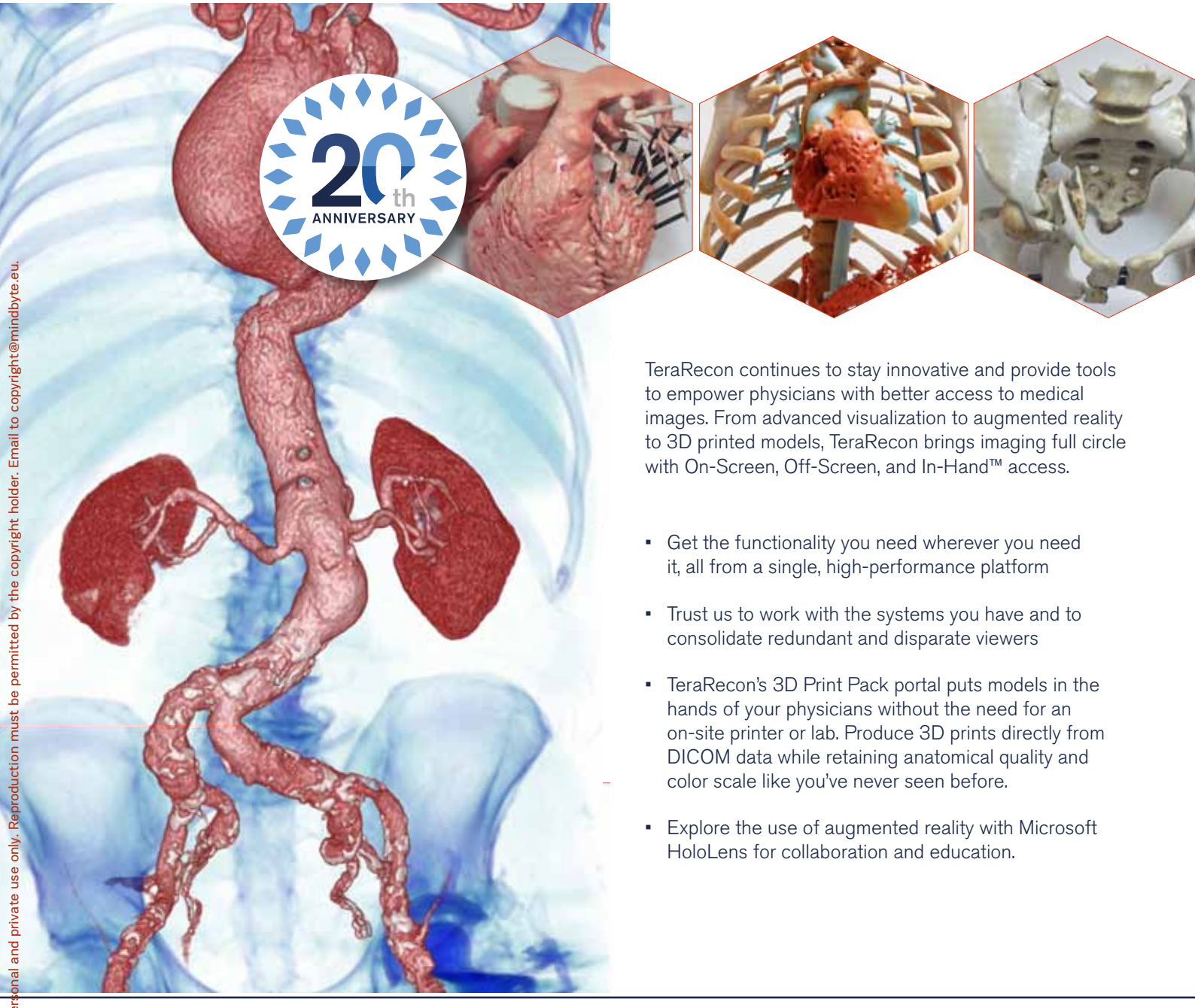

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The Need for Clinical Audits in Diagnostic Radiology

Clinical audits will be mandatory for radiology departments in the EU from February 2018, but they do not need to be boring, complex or cumbersome.

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Despite the fact that clinical auditing has existed for many years, the need for auditing has recently become more important. Organisations such as the European Society of Radiology (ESR), the European Commission (EC) and the International Atomic Energy Agency (IAEA) all agree on the increasing necessity of clinical audits. Legislative pressure is even more pronounced than ever: from February 2018 onwards, clinical audits will be mandatory for every European radiology department.

Upcoming Legislation

The European Council has adopted the EURATOM directive, which lays down basic safety standards for protection against the dangers arising from exposure conditions (Council Directive 2013/59/EURATOM). The establishment of quality assurance and audit programmes and inspections by the competent authorities are necessary to ensure that medical exposure is delivered under good radiation protection. The deadline is 6 February 2018; by then every member state should have defined how to perform clinical audits in radiology.

For that purpose, the European Commission (EC) published *European Commission Guidelines for Clinical Audit for Medical Radiological Practices* (European Commission 2009).

According to this document the definition is:

Clinical audit is a systematic examination or review of medical radiological procedures. It seeks to improve the quality and the outcome of patient care through structured review whereby radiological practices, procedures, and results are examined against agreed standards for good medical radiological procedures. Modifications of the practices are implemented where indicated and new standards applied if necessary.

A clinical audit should follow generally accepted rules and standards, the document explains. It should be systematic and involve continued activity, whereby the recommendations given in audit reports are actually implemented. Audits need to be carried out by auditors with extensive knowledge and experience of the radiological practices to be audited. The general objectives of a clinical audit should be to improve the quality of patient care, promote the effective use of resources, enhance the provision and organisation of clinical services and finally to organise professional education and training. The European guidelines also say that the detailed objectives of clinical audit should be defined related to the standards of good practice and that they need to address practical clinical work by different professionals. They should combine both *internal* and *external* assessments. For internal audits, the management of the department should set the objectives of audits. For small units the internal audit could take the form of self-assessment rather than an actual audit. For external audits, the objectives should be agreed between the auditing organisation and the healthcare unit to be audited. The objectives should be based on the audit programmes by national coordinating organisations.

> “THE FOCUS IN CLINICAL AUDITS IS, AS A PEER REVIEW ACTIVITY, ALWAYS ON THE CLINICAL ISSUES”

As it is not necessary to reinvent the wheel, the publication refers to an existing IAEA audit programme: *Comprehensive Clinical Audits of Diagnostic Radiology Practices: A Tool for Quality Improvement: Quality Assurance Audit For Diagnostic Radiology Improvement and Learning (QUAADRIL)* (International Atomic Energy Authority 2010).

QUAADRIL is well in line with the European guidelines on clinical audit, and it states:

By comparing the practice of the service against the standards of good practice, clinical audits can inform the staff of the healthcare service, as well as all other stakeholders, about the essential elements of quality and the weak points of the overall clinical service. The audits will indicate areas for improvement and provide reassurance on issues such as safety and efficacy, all of which are essential to creating an environment of continuous development.

It is a practical manual of how and what to audit, which covers the structure, processes and outcome of

a radiology department. It includes chapters on: quality management procedures and infrastructure; patient-related procedures; technical procedures, and education, training and research.

European Society of Radiology Proposal

Despite the clear value of clinical audits, some radiology departments consider audits boring, counter-productive and complex. Many organisations consider QUAADRIL as too challenging. Therefore, the ESR is proposing a phased approach. Last year, as a first step, they published the *ESR Clinical Standards and Audit Templates.*

The ESR believes that all radiology departments should have a clinical audit programme in order to assure users of the quality of the service and to promote continual quality improvement. To support departments in establishing an effective programme, the ESR suggests that areas for clinical audit should be categorised into three broad headings:

1. Level 1 Basic Audits - These audits should be the starting point for any audit programme and are focused on ensuring the safety of the patient.
2. Level 2 General Service Audits - These audits should be performed in addition to the Level 1 Audits once the programme is established.
3. Level 3 Focused Audits – These audits would form part of a final comprehensive programme in departments seeking true excellence in service provision.

Reality Check

Qaelum NV, a spin-off company from Leuven University, Belgium, received a grant from the Flemish government in order to validate a software solution allowing radiology departments to perform their own internal clinical audits, as suggested by the EC guidelines. Therefore, with a team we conducted voluntary and non-binding clinical audits according to the QUAADRIL scheme. Members of the team had experience in the field of radiology: a classic team includes a radiologist, a radiology technologist, a medical physicist and a quality specialist.

Voluntary clinical audits have now been conducted in different European countries in both university and general hospitals (25 audits in the period 2015-2016). The participating hospitals, on the one hand, were open and welcomed the project, but on the other hand they were somewhat afraid, since they didn't know exactly what to expect. The overall initial perception of an audit is, or was, that it is very labour-intensive, a lot of people need to be involved and it costs a lot of money and precious time. In addition, during our clinical audits we noticed that many hospitals were in the middle of simultaneous accreditations or certifications.

However, although clinical audit is different from other quality assessment systems, the overall perception of

European Commission Guidelines on Clinical Audit

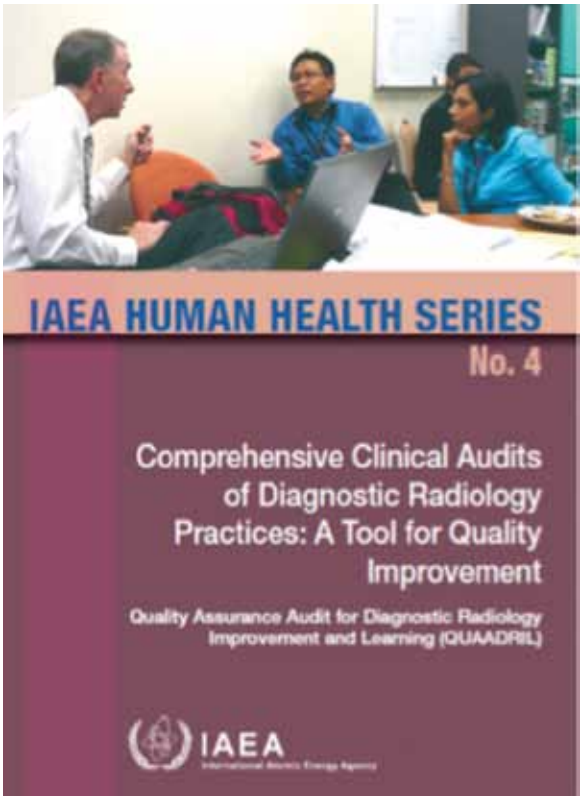
the people on the floor was a kind of déja vu. While the practical procedures can be partly similar, there are clear differences in the focus of the evaluation and in the consequences of the results of the observations.

Quality audits for certification check the conformity of the local quality system to the given quality standard, and do not directly ensure good quality of the practices in terms of clinical judgments. Audits for accreditation come closest to the objectives of clinical auditing, but they are limited to standard procedures where definite standards are available. Clinical audit should be considered as supplementing and not duplicating the other efforts. The focus in clinical audits is, as a peer review activity, always on the clinical issues of the service, where comparisons with clinical good practice are relevant, and the results are recommendations with no inherent obligation on their implementation.

The goal of the Qaelum solution is to take away this burden and to reduce unnecessary overlaps with different audit and accreditation systems. This is possible by the following:

1. Automating the collection of data in a reliable fashion
2. Combining the available scattered data in one place to simplify the execution of a clinical audit
3. Reducing the associated costs, time and manpower increases the reliability of the collected data and also increases the potentially positive outcome of an actual clinical audit.

As a result, after the audit visit, the initial perception of an audit being boring, cumbersome and time-consuming disappeared in the majority of the audited



IAEA Publication on Clinical Audits of Diagnostic Radiology

ESR Clinical Standards and Audit Templates

radiology departments. By adapting the right strategy, supported by an appropriate software solution, a full audit can be performed in 2 to 3 days with a small audit team of 2 people. In some cases, radiology departments can even audit themselves without any outside support.

Another positive finding of the clinical audits is that the overall quality of radiology departments in Europe, when compared to good practice, as defined by the different auditing and accreditation bodies, had, on average, an >80% compliance.

Conclusion

By auditing ourselves (internal audit), we become aware of how our departments are performing and how well and safely we are looking after our patients. Audit allows us to check on how we are compliant to existing good practice. It gives us information as to where improvements should be made. Through re-audit we can then check that the anticipated improvement has actually been achieved.

In the end, clinical audits can show the world how good our radiology departments really are. ■

KEY POINTS

- ✓ From February 2018 clinical audits will be mandatory for European radiology departments
- ✓ Publications from the European Commission, International Atomic Agency Authority and the European Society of Radiology provide information on how to perform clinical audits
- ✓ The ESR proposes a phased approach with 3 levels of clinical audit
- ✓ Qaelum NV led a project to validate a software solution for radiology departments to carry out internal clinical audits
- ✓ Clinical audits can show the world how good our radiology departments really are

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National Teleradiology System of Turkey

Motivation, Technology, Realisation, and Beyond

Outlines the development of the national teleradiology system of the Ministry of Health of Turkey, and details the motivation behind the solution, technology used, challenges faced, achievements, and future work that will be done.

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Within the Turkish Ministry of Health, the national teleradiology system is a patient-centric collaboration platform, which allows data sharing, consulting and communication among professionals. The system interconnects the radiology departments of all 647 public hospitals nationwide.

Motivation

Turkey has a population of around 80 million. 100 million radiology exams are performed annually. The radiology services provided in the public hospitals are provided free of charge to patients via the social security system.

Radiology exams are not only expensive, but they may also be harmful to patients, especially when radiation exposure is involved. Patients failing to convey their radiological data from one hospital to the other can face repetitive exams. Analysis has shown that 7% of the population go through radiological exams in multiple hospitals (Central Data Base of Association of Public Hospitals, Northern Anatolian Region of Istanbul - questioned and accessed March 2014). Furthermore, patient historical data is crucial for diagnosis, especially for chronic diseases.

Radiology services not only involve medical imaging but also reporting by radiologists. As in many other countries, the number of radiologists in Turkey is not increasing proportionally with the expanding population and demand for radiology exams. Furthermore, there is an uneven distribution throughout Turkey of the number of patients per radiologist, which results in varying reporting times and quality of service. For instance, the average reporting time for one hospital can be 2 days while it may be up to 7 days in another hospital, depending on the patient load.

Radiology covers a wide range of imaging technologies and involves all parts of the human body. In some countries radiology is divided into subspecialities such as neuroradiology, paediatric radiology etc. Such specialisation, however, can only be obtained in major public hospitals. For a radiologist working in a small-scale hospital, complex cases such as cancer may require consultation with specific specialists.

From the Ministry's perspective, the monitoring of radiology departments in terms of performance and quality of service is a major concern. This not only requires the collection of data and tools for analysis, but also review and audit.

The teleradiology system is designed in such a way that it should:

- Enable physicians to access their patient's history outside of their hospital
- Enable distribution of reporting load among radiologists
- Enable tele-consultation by real-time sharing of information between radiologists
- Provide decision-making tools for continuous improvement of radiology services nationwide

Technology

The system consists of the following modules:

- central repository
- central registry
- central radiology information system
- web-based image viewer
- web-based reporting module
- web-based quality assessment module
- web-based monitoring system (dashboard)
- teleradiology integration unit
- image streaming module
- teleconsultation module

For image sharing, the system extends the the Integrating the Healthcare Enterprise Cross-enterprise Document Sharing for Imaging (IHE XDS-I.b) topology. A central repository collects the metadata of studies from the Picture Archiving and Communication Systems (PACS) and then registers these records to a central registry using National Identification Numbers as the patient identifier key. In order to enable integration of non-XDS-compliant PACS systems, a middleware solution, called the Teleradiology Integration Unit (TIU), is used. TIUs are

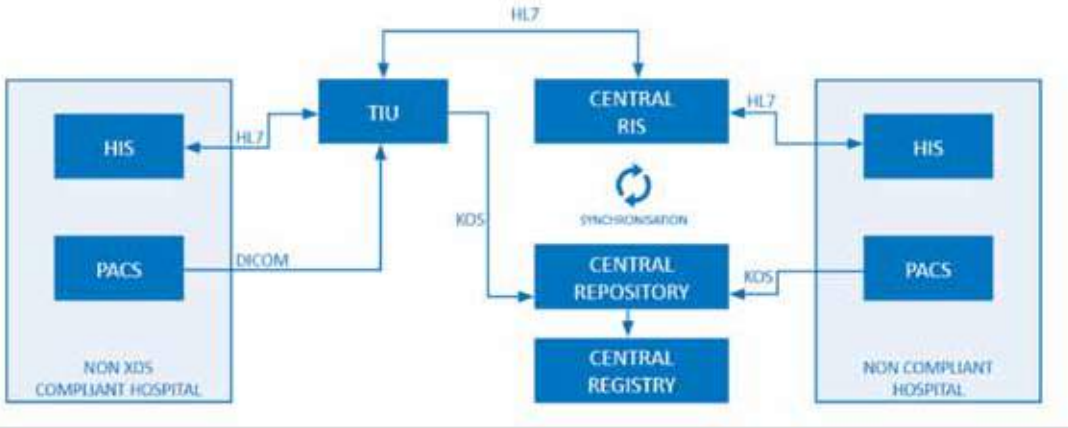

Figure 1. Data Collection Topology
HIS Health Information System

capable of receiving the whole examination data from the PACS systems by using Digital Imaging and Communications in Medicine (DICOM) communication standards and then by providing the metadata to the central repository. The system also collects dose information of computed tomography (CT), x-ray angiography (XA) and digital radiography (DR) studies for the monitoring and comparison of effective dose levels in hospitals. The topology is shown in **Figure 1**.

Image access is available via a web viewer hosted in the central servers. Users can query the records through the web interface and then retrieve images directly from the hospital or TIU using state-of-the-art data streaming technology. The central registry allows one-click nationwide access to all of a patient's radiological information and images. The interface is shown in **Figure 2**.

A central Radiology Information System (RIS) is provided for teleradiology reporting. This system receives Health Level 7 (HL7) orders from the Health Information Systems (HIS) throughout the country, so work lists can be generated to help radiologists perform reporting tasks. All reports generated in the system are automatically delivered back to the source HIS using HL7 messages. The doctors can use teleconsultation through the system by means of videoconferencing and screen sharing (**Figure 3**). The system also provides advanced worklist options for image and report auditing.

A decision support system is also supplied within the project. This system enables doctors and managers to monitor the real-time data flow, number of registered studies and orders, effective dose levels, slice counts

> "MORE THAN 100 MILLION ORDERS AND 15 MILLION REPORTS ARE NOW REGISTERED IN THE CENTRAL RADIOLOGY SYSTEM"

Figure 2. Web Interface of the Application

Figure 3. Doctors Performing Teleconsultation

Figure 4. Dashboard for Tracking Exam Counts

of multislice modalities (magnetic resonance [MR], CT) and average reporting times etc. Information can not only be presented in charts, but it can also be grouped by all levels down to hospital level. A typical dashboard is shown in **Figure 4**.

Realisation

The pilot phase of the project was conducted in Istanbul between 2013 and 2014, which involved the implementation of a central registry enabling sharing of images among 13 public hospitals as well as a central RIS that allowed remote reporting between those hospitals. During this phase, more than 5 million studies were registered and more than 1 million reports were successfully delivered. The nationwide expansion of the project started in late 2014, and in the first six months more than half of the public hospitals nationwide had been connected, so by the end of 2015 coverage had reached 98%. The pilot phase of radiological image quality control started in 13 hospitals in late 2015 and the image quality of more than 1 million studies was examined by radiologists. In 2017, work on the central quality control and management system, through peer review, continues, in association with the Turkish Society of Radiology.

Challenges

Integration with around 100 different hospital information systems and 40 different PACS systems was a big challenge. Eighty-nine TIUs had to be installed for the integration of all 647 hospitals nationwide. The management of these TIUs requires a lot of hard work. Nevertheless, as more PACS systems implement XDS-I.b-compatible solutions, the number of TIUs required will decrease considerably.

Achievements

The Turkish teleradiology system currently covers 647 public hospitals. More than 100 million orders and 15 million reports are now registered in the central radiology system. The number of studies registered in the central repository exceeds 50 million as of January 2017. The system holds radiological information of circa 30 million individual patients.

1.2 million individual patients have accessed 3.7 million personal radiology images via the e-Nabız system

A radiological reporting service can now be provided to rural hospitals despite a shortage of radiologists. Discrepancies in effective patient dose levels are now revealed and necessary actions can be put in place.

The Ministry of Health is working closely with the Turkish Society of Radiology in defining best practice and standards, and local companies now handle system implementation and maintenance.

Future Work

Our aim is to increase our research into dose monitoring in order to reduce patients' exposure to radiation. The historical dose information of patients will be available to ordering physicians as part of the system to check imaging order appropriateness, which is currently in the pilot phase.

We are expanding the image quality review coverage in order to standardise medical imaging services throughout the country. This will ease the radiologists' reporting tasks by enabling the same quality of images from different hospitals.

We are utilising NoSQL database engines to enable big data analysis and research in the future.

We are developing structured reporting templates in conjunction with the Turkish Society of Radiology, which will enable the delivery of standard reports, regardless of the reading radiologist.

Automatic translation of these reports into any language will also be available, and we are currently investigating deep learning techniques for automatic analysis of images for diseases such as lung cancer. ■

KEY POINTS

- ✓ Teleradiology
- ✓ Interoperability
- ✓ Health informatics standards

16 November 2017

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4th EUROPEAN HOSPITAL CONFERENCE

Chances and Challenges of E-Health

The 4th EUROPEAN HOSPITAL CONFERENCE (EHC) takes place as part of MEDICA 2017 and the 40th German Hospital Day on 16 November 2017 in the Congress Center Düsseldorf East (CCD East). The EHC will address different political, medical and economic topics from across all of Europe. The event is dedicated to the topic "Chances and Challenges of E-Health".

Andrzej Rys, Director General of the Directorate SANTE of the European Commission, will present the European Commission's "E-Health Action Plan 2012 – 2020". High-ranking speakers from the European Hospital and Healthcare Federation (HOPE), the European Association of Hospital Managers (EAHM) and the Association of European Hospital Physicians (AEMH) will give lively comments on that.

Beyond this, national E-Health-Concepts from Denmark, Germany, Sweden and Switzerland will be presented, followed by concrete examples of implementation of individual E-Health-Solutions in Hospitals.

Approximately 120 top decision-makers from Europe's hospitals are expected to attend. All presentations will be translated simultaneously into English, French and German. Conference time: 10:00 – 16:30.

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Trump on Drugs

Part 2

Trump gives in to pharma, No price controls!

President Trump can do serious damage to the pharmaceutical price gougers if he wants to, and will be cheered on by everyone who is not on the payroll of the pharmaceutical industry, and even some of them as well. A suitably aggressive beginning would be to select the 10 most outrageous incidences of excessive pricing ... go after the worst offenders ... and warn others who might want to make price gouging their business model ... President Trump ran as an economic populist who would take on industry on behalf of the people. Here the people clearly want something done. All it really takes is a chief executive who has the courage that he claims (Wu 2017, p.A23).

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Up to 80% of Americans believe drug prices are unreasonably high (Silverman 2016). Trump hollered about "drug price gouging" during his campaign (Jopson 2017), and promised to negotiate prices for the federal government to "save billions": one estimate was for Medicare to save $16 billion a year (Pianin 2017). Trump's rhetoric cooled after White House meetings with pharma CEOs. His administration's proposals now sound like a "wish list' from the industry (Edney and Sink 2017).

Industry and the Price Explosion

The global pharmaceutical industry is expected to hit $1.5 trillion by 2021, up $370 billion from 2016, primarily fuelled by new medicines that will be sold chiefly in developed countries. Two thousand two hundred and forty drugs are in the pipeline (McKee 2016), each expected to be highly priced, and several being extraordinarily high priced. Lack of lower priced drugs and shortages of crucial ones have historically thwarted treatments and forced clinicians to choose more expensive substitutes (Loftus 2017).

Pharmaceutical firms have historically been very powerful in the political realm, and are now more active at the state level. The industry spent $246 million on lobbying last year, and upped spending considerably in the first quarter of this year (Shanken 2017).

Rising drug prices came under greater scrutiny in the media following exorbitant jumps of more than a dozen entities during the 2016 Presidential campaign. All four candidates responded to the citizen outrage (Garde 2017), Trump being the most vociferous.

The Centers for Medicare and Medicaid Services have never negotiated with drug makers; after FDA approval, the market bears whatever firms want to charge (from the pockets of taxpayers and patients). There are no price caps on even the very highest-priced specialty medicines. Yet the federal government remains the largest purchaser of drugs in the world—for Medicare and Medicaid, for the Veterans Administration, military, and public sector providers like municipal hospitals and community health centres.

High and constantly climbing drug prices are a pressing issue for patients and families, who face higher out-of-pocket expenditures. Large employers, who have historically negotiated generous drug benefits for workers' insurance, find outlays very difficult to curtail. Alliances to negotiate deals are being formed so employers can directly manage employee healthcare, including choices for the best drugs and what physicians to use for costly conditions (What are the most... 2017). Unlike other nations, pharmacoeconomic studies to justify costs and assess efficacy are not required by the government.

> "TOUGH STANDS AGAINST DRUG COMPANIES DO NOT SEEM TO BE THE AGENDA OF THE TRUMP ADMINISTRATION"

Implications of Drug Cost Escalation

Expensive drugs dramatically impact hospital costs. Community hospitals saw their average annual drug spend increase by 23.4% between 2013 and 2015 (Van Dyke 2017). Four commonly used meds in hospitals increased from 479% to 1261% (NORC 2016). Teaching hospitals have sicker patients with more serious conditions; their drug outlays are even more expensive with budget enlargement for pharmacy services and pharmaceuticals, pushing them to more than one-quarter of their total revenues.

Manufacturers of generics have also incrementally raised prices, often without production cost increases, but because they can get away with it. A Government Accounting Office investigation found that "from early

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2010 to mid-2015, more than 20% of generic drugs had undergone price increases over 100%" (Morgenson 2017). Such price hikes are a concern, since 90% of all prescriptions are generic, influenced chiefly by pharmacy benefit managers (PBM) formula management schemes.

Certain drug stores and pharmacy benefit managers rake off an additional margin of costs and profits for every prescription filled. Both gain on script volume with higher margins from generic dispensing over negotiated brands from manufacturers, who rebate for "preferred" PBM formulary status (Silverman 2017).

The $419.4 billion in U.S. ambulatory prescription sales have seen climbs of nearly 12% or more in recent years, with projections up to 13% in the near future (Schumock 2016). For years pharmaceutical costs have risen at higher percentages than percentages for physicians and hospitals.

To the degree that specific costly drugs are proven to enhance patients' clinical outcomes (Belk 2017), expenditure might seem reasonable; however, the FDA does not require head-to-head comparisons of new drugs against the most effective entities on the market, but foolishly maintains the "gold standard" based on only two company-chosen placebo trials. Price increases to enhance company profits are unjustified on audited upped production costs and do not benefit the overall healthcare system established through health services research (Belk 2017; Huskamp 2017; Banka et al. 2013). Industry may claim that high prices and profits are necessary incentives to fund R&D, but drug promotion expenses for many firms far exceed annual research outlays (Anderson 2014).

It is well documented that overprescribing (Forgacs and Loganayagan 2008; Cahir et al. 2014) and inappropriate prescribing (Manasee 1989; Moriarty et al. 2016) characterise the huge drug expenditures in the U.S. Failure to achieve patient adherence to treatment regimens swells use in downstream care and costs (Hughes 2001; Iuga and McGuire 2014), as with lack of prevention and earlier interventions (Dietz et al. 2016; Goetzel 2009). A startling 187 million in U.S do not take their medications as prescribed (Go figure 2017). While managed care pharmacists have evolved tools and techniques to restrain the cost explosion, their overall impact, beyond generic substitutions, has not been substantial.

Given Trump relenting to save consumers and the federal government "the billions of dollars" he promised, instead Congressional Republicans propose to slash $830 billion from Medicaid's poor, sick, disabled, aged and women and children to get "savings" (Mazzolini 2017). The medical marketplace will never resolve access inequities of this scale. Nevertheless, the industry's corporate parties oppose any loss to their incomes from drastic federal cuts.

Specialty Drugs Well Beyond Control

The major driver of drug expenditures remains new and existing specialty drugs for complex, chronic and rare diseases, rising in an ageing population. These drugs carry price tags in the five to six-figure range per patient year, and require extensive monitoring for their use, storage, dispensing and administration. Together specialty drugs are estimated to cost nearly 40% of the total national drugs spend.

Specialty pharmacies handle these prescriptions and provide concomitant patient services; however, volume is their corporate objective. In today's more value-based, outcomes-driven system, specialty pharmacies may eventually be led to demonstrate effectiveness given cost pressures from payers (Hafner 2017). It is hoped that some cost containment may come from improved clinical management with better collaboration between clinicians and pharmacists. Their use spurred 38.8% over a four-year period, according to PBM Prime Therapeutics, exploding its payments by 102.7%.

So What Can be Done?

In light of the ageing population, improving prescribing will not do much to quell expenditure. Tougher assessment of drug comparative effectiveness and monitoring care programmes may only work on the margins of the annual jump in projected use.

What about the hope for brand name specialty drugs losing patent so increasing competition from generic biosimilars? Regulations over biosimilars have faced many delays, with only one entity on the market by early 2017. Others are approved, but not launched, with seven biosimilars pending approval. Brand manufacturers stiffly fight any generic reviews by the FDA that cut into their very lucrative holds on the market with their 20-year long-established brands.

In cancer drug development, "all the competition isn't really bringing down the price yet." (Tharaldson, quoted in Joszt 2017). More breakthrough therapies (22 in the near term pipeline) will likely stay very expensive and be cumulative to the cost spiral in oncology. Bundling costs for reimbursement may be a trend, but this remains to be seen as to acceptability and cost control by the Accountable Care Organizations.

Strategies for pricing controls hold the greatest potential for containing escalation of future outlays (Tolch 2017), unless the Republicans get their way by slashing huge swaths of Americans from health coverage! Yet an untamed medical marketplace will propel vested interests to just raise prices to make up for reduced revenues.

Conclusion

There appears to be no end to very expensive pharmaceuticals for Americans. Drugs may remain the fastest growth in the medical consumer price index given new entrants and prices increases. Trump's Executive Order on drug pricing (Trump 2017) was essentially an industry wish list (Kaplan and Thomas 2017). Many of his reversals from the campaign reflect business influence (Stokols and Bender 2017). Whether FDA Commissioner Scott Gottlieb succeeds to "promote competition" through faster generic approvals remains to be seen (Wechsler 2017; Johnson 2017). However, his past close ties to industry do not portend toughness on pricing (Thomas 2017). Tough stands against drug companies do not seem to be the agenda of the Trump administration.

The repeal of the Affordable Care Act (ACA) has revealed a poverty of analysis by the Republicans, let alone their lack of detailed understanding of our rather complex dynamic healthcare system. The American Health Care Act and the Better Care Reconciliation Act have both failed now with Trump and key Republicans talking about "repeal and delay," to dismantle the ACA without any replacement. The individual insurance market is in chaos. The Health Insurance Exchanges are not finding firms offering coverage. Available insurance policies have skyrocketing premiums, copayments and deductibles, with resultant consumer anger boiling over at congressional town meetings. Twenty million plus people may be destined to lose their coverage with the end of Medicaid expansion and ObamaCare signups under Trump's next foray of repeal with no replacement (Kristof 2017; Thrush 2017).

Widespread provider uncertainty severely weakens the healthcare infrastructure, particularly in rural areas and in larger cities serving the most vulnerable. Republicans have revealed their disdain for the poor, sick, disabled, aged, women and children in their proposals to strip away coverage.

The takeaway public policy lesson is that it is very difficult to remove benefits given, so price controls, if not by Trump on drugs, will likely be imposed on doctors and hospitals as an alternative direction. Marketplace medicine has become so infested that health policy mostly strengthens this direction without much effort at its disentanglement (Salmon 1990). Providers and insurance companies are conflicted with the pharmaceutical industry, which now seems less threatened. Beyond the legislative proposals are huge Trump budget cuts to biomedical research and the Centers for Disease Control and Prevention, National Institutes for Health and many other social programmes (Yong 2017) that will impact patients and physician practices.

> "IT APPEARS AS THOUGH THERE WILL BE NO END TO VERY EXPENSIVE PHARMACEUTICALS FOR THE AMERICAN PEOPLE"

First and foremost, cuts to ObamaCare and Medicaid recipients will create havoc for the system (some $830 billion out), so physician practices, hospitals, besides patients themselves, will lose financial access: providers will confront ethical dilemmas in discharging current patients who lose coverage. The predicted costs under either the congressional or Senate bills would send costs soaring (Abelson 2017). It appears as though a bipartisan approach might be the only possibility; but on what can the divided parties agree? Will Congress step up to drug price control, or will it be left to the states? (Mershon 2017a; Mershon 2017b; Greene et al. 2017; Chacro 2017). And where will the medical profession make its stand on these crucial issues in health and drug policy?

KEY POINTS

- ✓ The Trump administration faces multiple challenges to its standing in the nation, as well as the world
- ✓ Trump and the Republicans have discredited themselves in the American Health Care Act, which backpedalled Trump's campaign promises and seeks to remove 23 million from coverage
- ✓ The pharmaceutical industry, among other vested interests that significantly benefited under Obamacare, has been left out of policy deliberations as costs rise and system uncertainly mounts
- ✓ Pharmaceutical costs continue to burden patients and families, along with employers and government, particularly specialty drugs, with hope of remediation

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REFERENCES

For full references, please email edito@healthmanagement.org or visit the website

"Never give up."

ANGELA MAAS

PROFESSOR OF WOMEN'S CARDIAC HEALTH DEPARTMENT OF CARDIOLOGY - RADBOUD UNIVERSITY MEDICAL CENTER NIJMEGEN, THE NETHERLANDS

What is your top management tip?

Don't forget your personal life, because although ambition is important there is always a personal life behind. What I know from my own past is that if you get more and more rigid because people don't accept what you are doing, you may be too hard. Therefore you need to also culture your soft skills, to be human when you are also a pioneer.

"If you don't have data, you cannot manage it."

HENRIK KEHLET

HEAD OF SECTION FOR SURGICAL PATHOPHYSIOLOGY - RIGSHOSPITALET COPENHAGEN, DENMARK

What would you single out as a career highlight?

Probably the publication in the Lancet, in 1995 about 8 patients. That was the big eye opener for people. It was not high science, because it was only a few patients, but we showed that length of stay after colonic cancer surgery in patients more than 80 years old could be reduced from about 12-14 days as usual to about 2-3 days. It was a giant change. It was too big a change, therefore people didn't believe it, but it turned out to be true. "

"Anyone who thinks robots will take over from humans has not met humans."

EDEWEDE ORIWOH

INDEPENDENT CYBER-PHYSICAL SECURITY RESEARCHER

What would you single out as a career highlight?

Achieving my PhD degree and having the opportunity, for the first time, to be present at a premiere of one of my compositions in July 2017 at the London South Bank Centre.

"Be passionate about what you stand for and humble in leading people."

ANDRÉ HEINZ

GLOBAL HEAD OF HUMAN RESOURCES - SIEMENS HEALTHINEERS

What would you single out as a career highlight?

Besides the opportunity to contribute to the mission and development of Siemens Healthineers I am grateful for having worked as a hospital janitor at age 15 because it taught me respect for employees at all levels and for having worked at the World Bank as it gave me a geo-political perspective.

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