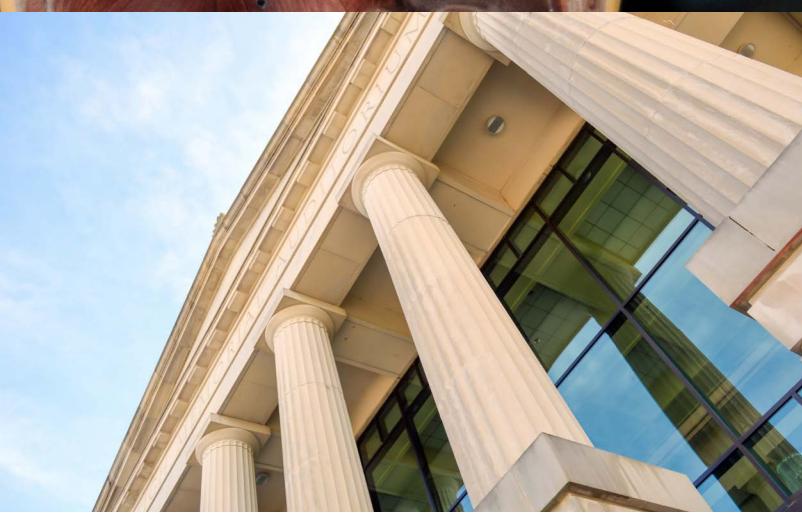
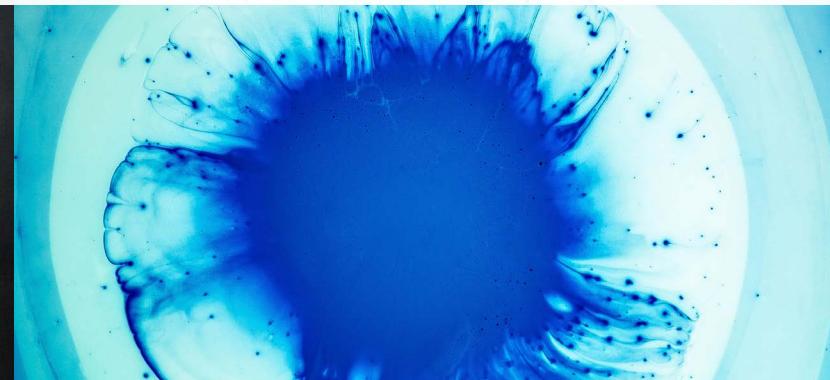
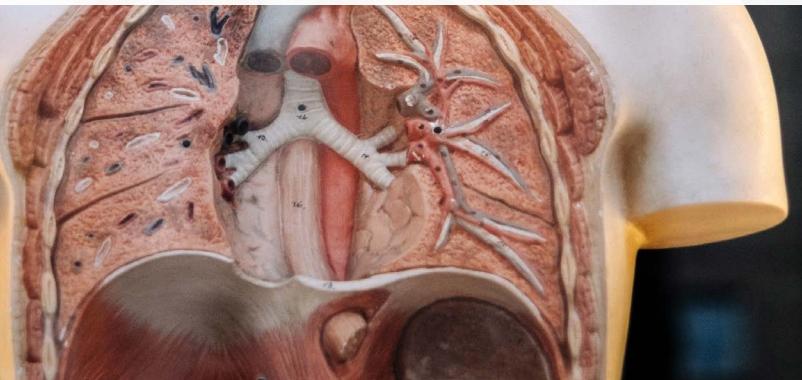


IMPACT OF DIGITAL TRANSFORMATION ON THE PATIENT LIFE CYCLE



EXECUTIVE SUMMARY

IIC Partners Life Sciences & Healthcare Practice interviewed 11 senior executives and thought leaders in the industry on the impact digital transformation is having on the patient care life cycle and leadership teams. These interviews represent global perspectives from organisations including major hospitals, digital healthcare innovators, healthcare groups, integrated health systems, a university medical center, a life sciences company, a cancer research center and a not-for-profit health system. Below is a summary of the key trends and emerging leadership roles. The full commentary from each interview session is included within this report.

Patients Take Ownership Of Health Data

A large challenge for the healthcare industry is the incompatibility between different Electronic Medical Record Systems (EMRs) across businesses. This prohibits transparency, collaboration and the easy exchange of patient data to provide accurate and complete care. According to several healthcare experts, a shift is occurring to empower patients to take ownership of their data providing them with access to their complete medical records when interacting with any healthcare provider. This ownership minimizes gaps in patient care and health coverage while reducing cost, duplication of treatments and tests and strain on industry resources. A proposed long-term strategy is for every patient to carry his or her data in the cloud that is protected and accessible by a patient's biometrics. By patients owning their health data, it provides them more control and involvement in their own care.

Population Health Initiatives Are A Growth Area

A growth area within healthcare and life sciences is the development of population health initiatives. These pilot programs enable caregivers and organisations to identify segments of patient populations and their associated risk levels through the use of big data and predictive analytics. This allows caregivers to provide more targeted and connected treatments for patients and the digitization of data makes outcomes smarter and faster over time. The more data that is collected, the more accurately doctors can proactively manage complexities across large segments of populations. Healthcare organisations are investing in these initiatives by appointing Population Health Physician Liaison roles and Informatics Committees to better align Physicians and information.

New Technologies Are Demanding New Skillsets

As new technologies become available, the integration of connected healthcare devices and assets is critical to gathering and storing data. New digital equipment will require additional technology skillsets for caregivers to maintain and upgrade these tools, train healthcare workers on their use and integrate them

into the operations of hospitals and other clinical centers. This reduces the strain on IT support, while the deployment of cloud technologies create less reliance for on-site IT personnel. Healthcare organisations will need smart data scientists to analyze data sets to identify patterns and recommend new and different parameters to measure. Productivity and efficiency increases when the right machines are connected to the right networks and operated by highly skilled and trained individuals.

Big Data Key To Driving Telehealth Programs

Several thought leaders cite telehealth and telemedicine as a rapidly rising sector for healthcare and life sciences companies. As telemedicine and delivering care in a patient's "lifespace" continues to grow, it will serve as a more strategic function. Companies will need to consider the leadership roles necessary to support this initiative. Virtual visits by physicians allow for patients to self-report symptoms, receive in-home chemotherapy treatments and receive care in remote areas where access to healthcare is limited. As the level of interactivity between patient and caregiver rises, the boundary between EMRs and patient portals blur, requiring more robust and standardized integrations.

Culture Serves As Key To Transformation

Culture is a major challenge for digital transformation in healthcare and life sciences companies. Even if an organisation has robust systems in place, large-scale transformations for a global company will take time since cultural shifts cannot happen overnight. The rate of change at which new technologies are being developed is unprecedented. This places enormous stress on organisations and caregivers. One shared challenge is convincing and training caregivers to regularly use digital tools in their daily practice. Physicians and caregivers are overloaded and their attention is diverted by many other aspects daily. It is critical to persuade these internal stakeholders that electronic documentation is also a form of caregiving. The value of these efforts will be demonstrated by providing concrete support and insights in daily practice through predictive analytics, closing the care gap and involving patients more in their own healthcare. As digital tools become available, new challenges arise surrounding critical thinking skills and an inherent dependence on technology. Human error is a very real threat to protocols and systems supplemented by technology. Healthcare givers must continue to exercise critical thinking to uncover any errors which can result in false positives and possible malpractice.

Interviews were conducted by IIC Partners Life Sciences and Healthcare Practice members including: [de JAGER Executive Search](#) in Sydney, [Envision Partnership](#) in Dubai, [Furst Group](#) in Chicago, [Hoffman & Associates](#) in Brussels, [Holtop Ravesloot](#) in Amsterdam, [JFP Executive Search](#) in Helsinki, [MERC Partners](#) in Dublin and [Salveson Stetson Group](#) in Philadelphia. The following comments and quotations are paraphrased from prior interviews.

7 RISING LEADERSHIP DEMANDS IN HEALTHCARE AND LIFE SCIENCES

Chief Digital Officer (CDO)



Digital transformation creates an entirely new seat at the executive table that goes beyond a traditional Chief Information Officer role. The Chief Digital Officer (CDO) has oversight of operational technology (OT) including physical machines and the people needed to operate them. The CDO must have a team that can look at a system end-to-end, and make decisions in real-time, using valuable data that is collected.

Chief Medical Information Officer (CMIO)



The role of the CMIO is to bridge the gap that separates physicians and care givers from hospital IT staff and to collaborate with both groups to specify, maintain and evolve healthcare related information technologies. The CMIO requires strong communication skills, an element of empathy for users, and a strong sense of ethics and responsibility.

Population Health Liaison



The Population Health Liaison aims to align physicians with information and data to better manage community health. By building data models and leveraging teams and tools, companies can transition from a retrospective caregiving mindset to a more predictive analytical and proactive approach to patient care. In addition, the Population Health Liaison can deliver a comprehensive and in-depth knowledge of the entire health journey of a patient.

Data Protection Officer



As GDPR approaches in 2018, healthcare organisations will need to re-examine cyber security practices and protocols placing stress on IT departments. This leader will become an essential partner to mitigate the risks of cyber-attacks, properly obtain consent from patients to store personal information and ensure regulatory compliance.

B2B Relationship Builders



Digital transformation has demanded transparency between healthcare and life sciences organisations across the globe. Without one unified Electronic Medical Record System, healthcare organisations must build strong partnerships with other key industry players to promote collaboration. This role removes existing barriers between healthcare providers, insurance, innovators and more.

Chief Performance Officer



The Chief Performance Officer is responsible for bringing together system-wide services and teams such as enterprise intelligence, quality and operational performance management. By optimizing systematic operations and processes, companies can benefit from consistent reporting structures, concrete analytical findings and shared information.

Data Scientists



Often reporting to the Chief Digital Officer (CDO) or Chief Medical Information Officer (CMIO), Data Scientists mine data from health records and connected assets. These analytics provide actionable insights for the business, caregivers and health departments resulting in a more proactive approach to patient care and truly maximizing the amount of data collected.

CANCER RESEARCH CENTER



Ilpo Tolonen

CEO

Docrates Cancer Center
Helsinki, Finland

“

As digitalization and the digital patient data brings public and private healthcare providers closer to each other, professional B2B relationship builders are needed to improve the cooperation between the providers...

”

Interview conducted courtesy of IIC Partners member firm:

JFP Executive Search
Since 1979

Heikki Vahtera
JFP Executive Search
Helsinki, Finland
jfp.fi

How does digital transformation affect the patient care life cycle for your organisation?

Digitization dramatically increases the total amount of information available for everybody. Patients know more when they walk into a hospital for the first time and the hospital can gather past patient care data from different sources (public and private) more effectively and faster. This data will help guide the treatment process (for example: the need for further imaging, diagnosis and treatment options) more efficiently and accurately. With these new capabilities, genetic profile testing collaboration with laboratories in the USA has become faster and more accurate. This impacts the selection of different treatment options available today.

Rapid growth of genetic profiling and biobank data utilization will help specialists find and choose optimal treatment schemes for each patient. In this digital era, the sharing of new clinical study results are more readily available and can enhance treatment options earlier. During ongoing treatments, patient follow-ups can be done remotely. Study results are showing that remote monitoring of patients between hospital visits improves data flow, enhances identification of early symptoms and identifies side-effects, thus decreasing total cost and increasing average life expectancy.

How does digital transformation change the demands in existing leadership structures and what new roles arise as a result of digital transformation?

Marketing, both towards patients and healthcare professionals, is becoming more digital and marketing professionals must understand these digital opportunities. As digitization and digital patient data brings public and private healthcare providers closer together, professional B2B relationship builders are needed to improve cooperation and collaboration between providers. For example, through this digital exchange a private healthcare provider can send their patients to a Cancer Center for imaging and diagnosis and bring patients back to their clinic for surgical operation. Docrates Cancer Center is a member of an international Cancer Expert Now network which gives our center the opportunity to utilize an online global specialist network for challenging consultative situations. Telemedicine (meeting with an oncologist online) is also growing fast, thanks to digitization.

In what ways does big data impact your organisation and how can it improve the patient care experience?

When the national patient database will be available online for clinicians and researchers, laboratory tests and imaging can be optimized to start target treatments earlier thus improving long-term efficacy.

What are the largest challenges when it comes to digital transformation and patient care for your organisation?

Patient databases are currently incompatible and different data systems in public and private service providers don't talk to each other. Political decision makers and legislation must leverage the current and ongoing social and healthcare reform processes to make, improve and encourage data interchangeability. As digital transformation moves forward, a long-term goal is that every patient will carry his or her data with him or her, and that data would be protected by a fingerprint from the individual.

How does digital transformation of other key players in the healthcare system (hospitals, health insurance, pharmaceutical companies) impact your business?

Healthcare service providers are modernizing and upgrading their patient data systems without a true focus on data compatibility. Cancer Centers should receive all possible patient data as soon as possible from all of the different healthcare players. Biobank operations, which are growing rapidly in Finland, will accelerate the science behind clinical studies and inevitably the utilization of new treatment innovations. Patients should become owners of their own health and care related data that they can bring with them to healthcare providers.



INTEGRATED HEALTH SYSTEM



Brent Phillips
President & CEO

Regional Health
Rapid City, USA

“

I personally want to see more roles that look at HOW we capitalize on digital transformation – not just how to adopt it...

”

How does digital transformation affect the patient care life cycle for your organisation?

I would like to see digital transformation really shift the patient care life cycle paradigm on its head. Digital transformation can allow patients to receive care when they need it, in an environment where they need it—in their “lifespace”. This can be the home, office or even in the classroom. Reimbursement models will need to adapt to allow for this, but digital transformation in other aspects of our lives will push our patients to demand this type of care. Another example of this is the site AnyLabTestNow.com, which allows patients to order and review lab results for simple blood tests, hormone tests and genetic screening without a physician order. Why would a patient need to come to a traditional healthcare setting when these types of services are offered? We need to consider how we will tap into these new options and still provide traditional healthcare services for those that need it.

How does digital transformation change the demands in existing leadership structures and what new roles arise as a result of digital transformation?

The new role I have created at Regional Health for the Chief Performance Officer, is a great example of a leadership role developed to support the changes that digital transformation is bringing. The idea of bringing together system-wide services such as enterprise intelligence, quality and operational performance management makes so much sense. This will allow us to better connect technology to the patient care life-cycle. This next comment may be controversial, but I think the role of the CMIO and CIO will diminish and disappear over time. All caregivers need to use technology ALL of the time and this won't be seen as a unique skill set but rather mandatory. Standardization is being driven by both technology and value-based care, which will also drive less need for IT development and support. Cloud technologies will create less reliance for on-site IT personnel. I personally want to see more roles that look at HOW we capitalize on digital transformation and not just how to adopt it.

In what ways does big data impact your organisation and how can it improve the patient care experience?

I am not sure that “big data” is the term I would use. However, transformation of data to information will have a huge impact—if we approach it correctly. We need to know what the right “test questions” are and focus more on our use of data. This has been a challenge in every healthcare organisation I have worked in. We need to start small, show value and process improvement through data and then expand. I think we will see more consolidation of data sources, and this will become advantageous for organisations like Regional Health. We will need to watch this space and understand how to tap into these sources. Technology that allows us to bring together disparate data is also changing and becoming less costly and more available, but there is a cultural challenge to overcome for institutions. Many people are stuck in the traditional data warehousing mentality and this can have a negative impact on transformation. Regional Health will benefit from data interoperability efforts, especially for people visiting remote areas who need our care. If we can connect with their home healthcare organisations and retrieve necessary data, this will allow for safe and efficient care delivery.

What are the largest challenges when it comes to digital transformation and patient care for your organisation?

Cost. State-of-the-art technologies are not inexpensive and changes in reimbursement are not making it easy for us to continue to invest heavily in some of the infrastructure we need. At the same time, people are reluctant to move to the cloud which also isn't necessarily inexpensive either. There is definitely a lack of skilled people available in data analytics and integration of technology. Finally, culture is a major challenge given that we haven't been early adopters to technology in general and now we are playing catch-up.

How does digital transformation of other key players in the healthcare system (hospitals, health insurance, pharmaceutical companies) impact your business?

Our competition is no longer local—it is everywhere, even international. When a patient can conduct a virtual visit in a more convenient way than they can with Regional Health how do we convince them to still come to us? There will also be technologies (e.g. remote monitoring, medical devices) that will allow for care to be delivered in different ways that we will need to evaluate for adoption. Insurance transformation (or lack thereof) is probably an area that can most negatively impact Regional Health. If we want to deliver care in different ways, but reimbursement isn't available, this will halt our ability to take advantage of these digital advances.

Interview conducted courtesy
of iic Partners member firm:

FurstGroup

Bob Clarke
Furst Group
Chicago, USA
FurstGroup.com

UNIVERSITY MEDICAL CENTER



How does digital transformation affect the patient care life cycle for your organisation?

We use EPIC software in our organisation to manage patients' electronic health records. In addition to EPIC, we have a picture archiving and communication system (PACS) for optimizing workflow and analyzing image data. Patients have online access to their own medical records using the portal, which is directly linked to EPIC.

How does digital transformation change the demands in existing leadership structures and what new roles arise as a result of digital transformation?

As a result of digital transformation and the digital revolution, we founded the Innovation Board two years ago and completely redesigned our IT department. This IT reorganisation redirected our main focus on business analytics. Company-wide digital transformation is spearheaded by the Chief Medical Information Officer (CMIO) who is a direct report to the Executive Board.

In what ways does big data impact your organisation and how can it improve the patient care experience?

Big data has a growing impact on how we organise and structure patient workflow. The department of business analytics uses data generated within the organisation to optimize workflow per department and also to tailor patient care based on specific needs and preferences of each individual patient.

What are the largest challenges when it comes to digital transformation and patient care for your organisation?

The largest challenge we face is attracting and retaining the smartest and brightest employees. In addition, there is a growing gap between the environmental speed of change and change capacity and willingness to change inside the organisation.

How does digital transformation of other key players in the healthcare system (hospitals, health insurance, pharmaceutical companies) impact your business?

Digital transformation of other key industry players has a clear impact on our organisation. Partnerships with healthtech and pharmaceutical companies today are all based on shared digital transformation programs. As a result of digital transformation, our company is shifting from a traditional hospital organisation towards a digital health enterprise.

**Interview conducted courtesy of
IIC Partners member firm:**

55 HOLTROP RAVESLOOT
executive search & consulting

Gerald Knol
Holtrop Ravesloot
Amsterdam
holtopravesloot.nl

HOSPITAL



Christine Candio
President and CEO

St. Luke's Hospital
St. Louis, USA

Chief Medical Information Officer, Population Health Physician Liaison and the Informatics Committee aim to better align the needs of physicians with information technology being delivered by the organisation...

”

Interview conducted courtesy of IIC Partners member firm:

Furst Group

Bob Clarke
Furst Group
Chicago
FurstGroup.com



How does digital transformation affect the patient care life cycle for your organisation?

Our main goal with the utilization of enhanced digitization of our healthcare data is to improve the overall health and wellness of our patients. We see this evolving as we focus our goals around the 'ownership' of the patient record, our ability to use data to find opportunities to proactively manage patient populations, and to set a strategy in place for digital outreach to our patient populations and deliver care when and where they require it. From a data ownership perspective, we are in the process of implementing an integrated Electronic Medical Record (EMR) solution, allowing for a single consolidated patient record. We are then layering on top of the EMR a patient portal which we will use to effectively communicate the overall status of a patient's health, allowing them access to their records and be able to interact with our organisation in real-time.

The long term goal of this use of technology is to remove the historic silos of data and transition the ownership of those records to the patient to better manage their own health. In addition to the single EMR platform, we are implementing a robust data analytics and population health solution that will enable us to identify populations of patients and their associated risk level. By using this data, we can proactively focus on patients that are at high or rising risks to better manage and identify care opportunities.

How does digital transformation change the demands in existing leadership structures and what new roles arise as a result of digital transformation?

From an organisational perspective, digital transformation has required us to evaluate our organisational structure and leadership education. Over the past few years we have identified positions and committees such as a Chief Medical Information Officer, Population Health Physician Liaison and the Informatics Committee. These aim to better align the needs of physicians with information technology being delivered by the organisation. We have also created new leadership areas such as a population health department. As our strategy begins to take place around telehealth, we will need to consider the leadership necessary to support this initiative as well.

What are the largest challenges when it comes to digital transformation and patient care for your organisation?

There are a number of challenges when considering and implementing these new technologies. The largest opportunity that we are currently managing is our ability to keep up with the 'rate of change' with these technology solutions. Although the amount of data and the capabilities and utilization of that data is bringing a tremendous amount of opportunities to the healthcare industry, these solutions are being developed faster than many organisations can implement them. When considering this and the ever changing regulatory environment, this constant and rapid rate of change on many healthcare providers, especially the physician community, can cause a tremendous amount of stress and burnout. It has been very important for us to build a strong relationship with the physician community that includes their involvement in the process from strategic planning to solution implementation. These solutions need to be carefully rolled out in a mindful way that takes into consideration the impact on our healthcare providers, their workflows, and our patients.

How does digital transformation of other key players in the healthcare system (hospitals, health insurance, pharmaceutical companies) impact your business?

The ability to have data transparency across all sectors/players in the healthcare industry is critical for our organisation and our patients. The capabilities to data mine clinical activities within our single EMR is very beneficial, but still leaves the overall patient health profile incomplete. Without access to insurance and claims data, any services provided outside of our system are not acknowledged, and will possibly falsely show as a gap in patient care or opportunity. Without the data from pharmacy beneficiary managers and pharmaceutical companies, we will not have access to medications that patients may be paying out of pocket for, again falsely showing gaps in medication compliance. These false positives will be a drain on our healthcare resources and frustrating for patients. It is critical for our organisation and as an industry that we continue to push for data transparency and standards.

LIFE SCIENCES COMPANY



Pieter Nuboer

Vice President APAC -
Animal Nutrition & Health

Royal DSM
Singapore

How does digital transformation affect the patient care life cycle for your organisation?

Our business sees three strategic drivers that influence the business strategies over the next business cycle including:

- ▶ Climate & Energy
- ▶ Health & Wellness
- ▶ Global Shifts & Digitization

Regarding the use of new technology impacting society and behaviours, our organisation is intensifying the use of big data to tailor local solutions and business models. We are taking every opportunity to be better connected across businesses and reduce replication and redundancy where possible. This enhances our ability to accelerate the speed of service in different parts of the world.

How does digital transformation change the demands in existing leadership structures and what new roles arise as a result of digital transformation?

Our global approach towards information services is clearly changing. We have seen this in terms of a new structure and new roles. The strategic importance of digitizing is now increasingly at the forefront in terms of designing future readiness. Prior to this shift, one could argue the way we thought was more a consequence of the past.

In what ways does big data impact your organisation and how can it improve the patient care experience?

Big data allows us to become more customer and consumer insights driven. This yields a more outside-in rather than inside-out perspective and, as a result, we see scope for new digital platforms to allow us to connect with customers and consumers. We are increasingly recognizing the need for enhancing diversity of thoughts and skills to design and capitalise on new links between customers through digital platforms. Many of these skills needed are new to us.

What are the largest challenges when it comes to digital transformation and patient care for your organisation?

Having the right skills internally to manage digital transformation. Our company has robust systems and a strong culture, yet large-scale transformations in a global company will take time as does changing a culture shift around digitization. The accelerating speed of change that is occurring in this digital space is both fascinating and scary. We need new ways of thinking and challenging our status quo. For example, our sales forces in countries across the globe will tremendously benefit from the shared knowledge and insights captured and generated by big data.

How does digital transformation of other key players in the healthcare system (hospitals, health insurance, pharmaceutical companies) impact your business?

What we do know is that more and more customers and other stakeholders in the healthcare system are equally or better informed as information is in abundance. It's how we use these insights and the speed at which we can make informed decisions, that will be critical.

“

Interview conducted courtesy
of IIC Partners member firm:

deJAGER
EXECUTIVE SEARCH

Jochen de JAGER
de JAGER Executive Search
Sydney
dejager.com.au

HEALTHCARE GROUP



Richard Jones
Group CEO
St. Vincent's Healthcare Group
London



Dermot Cullinan
CIO
St. Vincent's Healthcare Group
Dublin

How does digital transformation affect the patient care life cycle for your organisation?

Healthcare informatics is shifting from a paper/analogue to digital format. This covers all aspects of the patient journey including referrals, order-comms, reports, images and records.

St. Vincent's Healthcare Group is investing in building better digital capability. However, system-wide change is slow and is constrained by the pace of public health infrastructure, investment and funding.

How does digital transformation change the demands in existing leadership structures and what new roles arise as a result of digital transformation?

Information Communication Technology (ICT) is shifting from a support function to a strategic function. Data analysis is becoming part of the healthcare decision-making process – for example, bioinformatics using gene sequencing data to support personalised medicine. This is calling for a whole new professional skillset as part of the multi-disciplinary clinical team.

This all places heavy demand on managing the information system networks and infrastructure across healthcare organisations. This is an emerging capability that needs to be resourced and coordinated, but the current cross-organisational governance arrangements do not always support this.

In what ways does big data impact your organisation and how can it improve the patient care experience?

In theory, digital transformation impacts our organisation in the following ways:

- ▶ Speed up referrals
- ▶ Manage demand
- ▶ Clinical decision-support
- ▶ Reduce inappropriate referrals or repeats tests
- ▶ Planning
- ▶ Quality assurance
- ▶ Patient access to medical records
- ▶ Patient choice and informed consent

What are the largest challenges when it comes to digital transformation and patient care for your organisation?

Challenges are to secure and implement a comprehensive electronic patient record. This will not only provide efficient and effective patient care, it will reduce risk and maximise hospital resources. Failure to implement this will remove a key cornerstone to the digital transformation of patient care. The challenges to achieving this is that these systems require enormous investment, staff and infrastructure to the extent that it is not possible for hospitals to generate funding without substantial support and a mandate to implement at a national level. There are competing national and local projects which create challenges for us in driving large-scale hospital and group initiatives in a timely fashion.

How does digital transformation of other key players in the healthcare system (hospitals, health insurance, pharmaceutical companies) impact your business?

There are significant opportunities to be gained by digital transformation across the entire health chain. However to leverage these benefits requires collaboration and a data framework that does not presently exist. This is beginning to change and we are working on a pilot Population Health initiative. This has tremendous potential to deliver an in-depth overview of the entire health journey of our patients. It will allow us to move our knowledge far beyond the walls of our individual health institutions. We can then build information models and leverage tools to move from retrospective data reviews to predictive analysis and planning.

Interview conducted courtesy
of iic Partners member firm:



John Glenny
MERC Partners
Dublin
Merc.ie

DIGITAL INNOVATOR



Nabil Habayeb
President & CEO MENAT
General Electric
Dubai



Ali Saleh
GM & CCO MENAT & SSA
GE Digital
Dubai

“

Now, the “Chief Digital Officer” (CDO) role has to take all of this into account, while emphasizing the critical dimension operational technology plays in our world...

”

Interview conducted courtesy of IIC Partners member firm:



*Nairouz Bader
Envision Partnership
Dubai
envisionpartnership.com*

How does digital transformation affect the patient care life cycle for your organisation?

Digitization is now part of everything that we do. Much like how the smartphone transformed the way we communicate, digital transformation on an industrial level, including healthcare, will affect each and every stage of the patient journey. It means embracing the machine as an integral part of the healthcare team by automating routine procedures and processes so clinicians can focus on the most complex and critically ill patients. By using deep learning platforms to provide actionable tools at the point of care, clinicians can more efficiently and effectively diagnose and treat patients. Automating billing, documentation and regulatory processes allows for clinicians to focus on meeting every patient's needs. This represents a major shift towards value-based healthcare.

How does digital transformation change the demands in existing leadership structures and what new roles arise as a result of digital transformation?

Digital transformation creates an entirely new seat at the executive table that goes beyond a traditional “Chief Information Officer” role. Information Technology (or IT), is what CIOs focused on in the past. Their responsibilities included email, web platforms, computers, network connections, enterprise resource planning systems (ERPs) etc. Now, the “Chief Digital Officer” (CDO) role has to take all of this into account, while also emphasizing the critical dimension Operational Technology (OT) plays in our world. OT includes the physical machines and the people needed to operate them. In healthcare we're talking about MRIs, CTs etc., and the people who must have the skills to run the machines and analyze the data that is produced. Today's CDO must have a team that can look at a system end-to-end, and make decisions in real-time using valuable data that is collected. Productivity and efficiency will increase when the right machines are connected to the right networks and operated by the right people with the right analytics capabilities. It is the CDO and his or her team to ensure all of this is seamlessly in place, and often, we've found that these are new roles within an organisation.

In what ways does big data impact your organisation and how can it improve the patient care experience?

Data has the power to improve health outcomes. This data, collected from the Industrial Internet of Things (IIoT), plays a major role in population health management that can allow the patient care experience to be more predictive, targeted, and connected. When you look at the patient journey from primary care into different specializations, data can give you better insights and treatment options. And the key is that digitization also makes outcomes smarter with time – the more data we have, the more accurately doctors can use it and identify problems across large segments of the population.

What are the biggest challenges when it comes to digital transformation and patient care for your organisation?

I'd say there are three main steps to full digitization, and some of these can be challenging to implement across large organisations. The first is connectivity – digital solutions are only as effective as the data they are able to pull. Ensuring your assets are connected (even when they come from different manufacturers or systems) is critical. Then it's time to get insights. Make sure data is collected in a standardized way so that it can be easily and effectively analyzed. This requires smart data scientists who are also industry experts. They are able to see patterns and recommend new and different parameters to measure. The final stage of digitization is when an organisation is ready to optimize. With this phase, it is critical to ensure a secure implementation and to protect data. Health records and information are incredibly sensitive and personal so organisations must ensure compliance with regulatory bodies while remaining collaborative to provide the best patient care.

How does digital transformation of other key players in the healthcare system (hospitals, health insurance, pharmaceutical and medical devices companies) impact your business?

In healthcare, the ecosystem is robust and each player is very important. When these key players also begin to look at digital transformation, it creates a catalyst for the industry to see how they can benefit. It acts as an accelerator for us and our partners, and helps the causes for standardization and agreement. Everyone must be aligned in the best interest of the patient.

HOSPITAL



François Roucoux

Chief Medical Information Officer

*Grand Hôpital de Charleroi
(GHDC)
Belgium*

“

The emerging role that immediately comes to my mind is Chief Medical Information Officer (CMIO).

The role of the CMIO is to bridge the gap that separates physicians and care givers from hospital IT staff...

”

**Interview conducted courtesy of
IIC Partners member firm:**

HOFFMAN 
AND ASSOCIATES

*Michel Grisay
Hoffman & Associates
Brussels
hoffman-associates.be*

How does digital transformation affects the patient care life cycle for your organisation?

Current digital transformations touch principal coordination, continuity of care and communication between healthcare teams. In this area, the national initiative for medical data sharing brings the exchange of patient information between hospitals and the first line of care. Patients will soon be able to contribute to the enrichment of their records and to review the full content. These advances are only made possible by obtaining the patient's informed consent for making their health data available in digital form. From a patient perspective, the most visible impacts of digital transformation is the interaction between hospitals and the outside world.

Few Belgian hospitals have deployed robust patient portals that extend beyond simple administrative features and facilitate a high level of interactivity between care providers. Nevertheless, a series of pilot projects are emerging that address patient education, remote patient monitoring and self-monitoring. At our hospital, we have developed projects related to telemonitoring patients in their own homes with self-reporting of symptoms and in-home chemotherapy. The classic pitfall that arises is the complexity of integrating these new technologies with our electronic patient record. As we raise the level of interactivity, the boundary between the medical record and the patient portal blur and the level of required integration increases.

How does digital transformation change the demands in existing leadership structures and what new roles arise as a result of digital transformation?

The emerging role that immediately comes to my mind is Chief Medical Information Officer (CMIO). The role of the CMIO is to bridge the gap that separates physicians and care givers from hospital IT staff. As CMIO, I collaborate with both groups to specify, maintain and evolve our healthcare related information technologies. On one hand, the CMIO evaluates and prioritizes problems encountered by caregivers and trains caregivers on the function and evolution of our systems. On the other hand, the role is focused on the future and innovation. I supervise several innovative projects including developing a tool that coordinates multidisciplinary teams for home hospitalization through advanced workflow management, geolocation and logistical optimization of care tours. It's exciting because these projects involve techniques that are barely out of research labs. In addition, the CMIO requires strong communication skills, an element of empathy for users and a strong sense of ethics and responsibility.

In May 2018, the European Union's new General Data Protection Regulation (GDPR) will go into effect. This regulation will put a high pressure on our IT department. A newly emerging role to help navigate this new regulation is the Data Protection Officer (DPO). This leader will become an essential partner and responsible to ensure that we mitigate the risk of cyber-attacks and properly obtain consent from patients to store their personal information.

What are the largest challenges when it comes to digital transformation and patient care for your organisation?

The main challenge is to convince and train our caregivers to regularly use these digital tools in their daily practice by inputting correct and complete data. Doctors and caregivers are chronically overloaded and their attention is diverted by many other aspects throughout the day. It is critical we persuade these individuals that electronical documentation of care is also caring. This will be achieved by demonstrating the value of these efforts to caregivers by providing concrete support and insights in their daily practice. Progress also has yet to be made in this area in terms of usability and ergonomics of software programs.

How does digital transformation of other key players in the healthcare system (hospitals, health insurance, pharmaceutical companies) impact your business?

Our connection to biopharmaceutical companies and networks allows us to receive queries to participate in new clinical studies. We match these queries with potential candidates through automated analysis of electronic medical records. All precautions are taken to preserve anonymity and confidentiality of patient data. Only general patient headcounts leave our hospital on the network and medical data remains well protected on our own private servers. These mechanisms will gain significant importance in the future because they provide patients, particularly cancer patients, access to advanced treatments developed around the world. One challenge we face is the interoperability between these different systems. We are constantly being asked to interface with new systems and this requires a constant effort by our IT teams.

NOT-FOR-PROFIT HEALTH SYSTEM



John J. Lynch, III
President and CEO

Main Line Health
Radnor, USA

“

At the lower and middle levels, digital equipment and tools for healthcare require staff to maintain and upgrade them, train healthcare workers on their use and integrate them into the operations of hospitals and other clinical centers...

”

Interview conducted courtesy of
IIC Partners member firm:

Salveson Stetson Group

John Salveson
Salveson Stetson Group
Philadelphia
ssgsearch.com

How does digital transformation affect the patient care life cycle for your organisation?

Digital transformation will improve patient safety and quality of care. This is because it will allow for faster, more accurate communication across medical providers and platforms.

How does digital transformation change the demands in existing leadership structures and what new roles arise because of digital transformation?

Digital transformation impacts human resources needs at all levels of the organisation. At the leadership level, a senior executive charged with data security and protection against cyber security breaches is becoming a requirement. At the lower and middle levels, new digital equipment and tools require staff to maintain and upgrade them, train healthcare workers on their use and integrate them into the operations of hospitals and other clinical centers. Employers are most likely to use outside consulting resources to develop and execute on digital transformation projects.

In what ways does big data impact your organisation and how can it improve the patient care experience?

It will help promote standard treatment protocols across treatment providers, based on the most updated medical research and best practices. This will reduce errors in diagnosis and treatment and can also provide much more information on patients to be used to assess treatment options. Telemedicine also will help patients who are in remote locations or have trouble directly accessing medical care. Telemedicine is real and is here to stay.

What are the largest challenges when it comes to digital transformation and patient care for your organisation?

There are many risks associated with having so much patient data. In addition when hospitals and caregivers become too dependent on digital resources, they flounder when those resources are unavailable – either unexpectedly (due to a crash or outage of some sort) or even on a planned basis. Digital tools cannot replace human judgement and critical thinking. This is a bit of a “Catch 22”.

In the past, healthcare workers followed protocols based on their own critical thinking and observation powers to follow procedures and safeguard patients. As more digital tools come into play, healthcare workers may use their critical thinking less. Using bar codes to administer drugs to patients helps with safety, however human error is still a very real possibility. For example, someone at the pharmacy makes a mistake by putting the wrong pill in the wrong bag with the wrong barcode. You can follow all the procedures, but at some point, a nurse may have to look at the pill they are about to administer and notice it's round – rather than square like the pills administered previously of the same drug. Will caregivers pay attention to uncover this error or will they just rely on technology for these protocols without introducing any critical thinking?

How does digital transformation of other key players in the healthcare system (hospitals, health insurance, pharmaceutical companies) impact your business?

Certainly, healthcare organisations need to keep up with the latest technology to be competitive. They also should implement digital solutions so they can communicate and share data with health insurers, other treatment providers, etc. This creates significant expense and is not optional. They also run into problems sometimes if they are trying to share data with an entity that has not kept up with digital technology. This creates problems with sending and storing information securely.

IIC Partners Life Sciences & Healthcare Expertise

Life Sciences and Healthcare companies face continual transformation, spurred by complex issues such as industry consolidation, cyber security, compliance, emerging markets and economic uncertainty. An unprecedented shift from payment models based on volume to those centered on outcomes deeply affects consumers, governments, industry experts, stakeholders as well as leaders and practitioners across the life sciences and healthcare industry. Our Life Sciences and Healthcare executive search expertise coverage areas include:

- ▶ Biotechnology
- ▶ Pharmaceuticals
- ▶ Managed Care
- ▶ Employee and Physician Engagement
- ▶ Medical Devices
- ▶ Products
- ▶ Hospice
- ▶ Consumer Health
- ▶ Healthcare
- ▶ Healthcare Providers
- ▶ Academic Medicine
- ▶ Physician Alignment
- ▶ Payer
- ▶ Hospitals & Physicians

LIFE SCIENCES & HEALTHCARE GLOBAL REACH



About IIC Partners

IIC Partners (www.IICPartners.com) is one of the top 10 executive search organisations in the world. The network of "Independent International Consultants" is made up of 43 independently owned and managed executive search firms representing 52 offices in 34 countries, all considered to be leaders in the geographic and industry markets they serve.

**LEARN MORE AT
IICPARTNERS.COM**

● Life Sciences & Healthcare Expert

Amsterdam	Columbus
Bangkok	Copenhagen
Beijing	Curitiba
Bogota	Dallas
Brussels	Detroit
Bucharest	Dubai
Buenos Aires	Dublin
Calgary	Dusseldorf
Cape Town	Edmonton
Caracas	Frankfurt
Chicago	Hamburg

● IIC Partners Office

Helsinki	Moscow	Stockholm
Hong Kong	New Delhi	Sydney
Houston	New York	Toronto
Johannesburg	Oslo	Vienna
Lima	Paris	Warsaw
London	Philadelphia	Washington D.C.
Luxembourg	Rio de Janeiro	Zurich
Madrid	Rome	
Milan	Sao Paulo	
Montreal	Santiago	
Moscow	Sofia	