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INTEGRATED HEALTHCARE SERVICES

ORGANISING HEALTHCARE SERVICES FOR THE 21ST CENTURY

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SUMMARY

Throughout the World there is a strong focus on and movement towards Integrated Healthcare Services (IHS) that put the citizen at the centre. Denmark is a frontrunner when it comes to IHS, however there is still a way to go. Today the focus is on breaking down the silos and building the organisational, financial and technical infrastructures to enable IHS. 2025 will bring an even stronger focus on bringing healthcare closer to the citizens. A cultural change and integration of new enabling technologies is also in the cards.

The challenges for IHS are primarily cultural and financial. Healthcare management has an important role in solving these challenges.

There are definite business opportunities for solutions that can support management, communication, collaboration and coordination across healthcare providers. However, it is important to be aware of the complexity, diversity and fragmentation of stakeholders as well as the barriers for integrating data.

SHORT DEFINITION

Inspired by The World Health Organisation, we define Integrated Healthcare Services as integration of all healthcare services provided by a collaboration between all public and private stakeholders, through cohesive service management and -delivery across healthcare sectors, departments etc. The cornerstone of the Integrated Healthcare Services is the focus on the needs, preferences, outcome and participation of the citizens, for whom the healthcare services are provided (WHO, 2017).

WHAT ARE INTEGRATED HEALTH-CARE SERVICES?

Hal Wolf describes integrated healthcare as bringing together all levels and resources of healthcare to provide cohesive services for the individual:

> *"Integrated healthcare can be done at the institutional level, it can be done at the national level, or it can be done within an individual office, but it fundamentally brings the resources, a multidisciplinary approach, utilising its best case scenario, individual patient records so that a healthcare system can look at the individual at an individual basis across the care continuum, from primary care and prevention to secondary prevention to acute care, to chronic disease management"* (Wolf, 2018).

Without the adoption of an Integrated Healthcare Services approach, healthcare will become increasingly fragmented, inefficient and unsustainable. Improvements in service delivery are necessary to enable people to access high quality healthcare services that meet their needs and expectations. Hal Wolf further argues the relevance of Integrated Healthcare Services in improving accessibility, quality and cost-efficiency:

> *"This is fundamentally the goal we see in system after system. It is causing changes in the way we offer care, it is causing changes in the way we access and utilise information, we are learning from it, we are learning how to do it more efficiently but the fundamental outcomes that we hope to achieve and continue to achieve with integrated care is simply better outcomes, lower costs, better access, and more efficiency that is built into the system overall"* (Wolf, 2018).

The emergence of Integrated Healthcare Services is a broad strategic approach that accommodates trends such as individualism, instant gratification, redefined health terminology, Health Consumerism and citizens taking a participatory role in managing own care. These trends call upon a paradigm change, which includes a redesign of the way healthcare services are delivered and managed, towards an integrated healthcare delivery system that is organised around the patient.

WHO GLOBAL STRATEGY ON PEOPLE-CENTRED AND INTEGRATED HEALTH SERVICES

The WHO has a 'Global Strategy on People-Centred and Integrated Health Services' from 2015, which focuses on *"placing people and communities at the centre of health services 2016 – 2026"* (WHO, 2017).

The strategy acknowledges the need for different paths and interventions

towards achieving people-centred and integrated healthcare services, across different countries and healthcare providers. The WHO argue that they should all adhere to a common set of principles and be:

- Comprehensive

- Equitable

- Sustainable

- Coordinated

- Continuous

- Holistic

- Preventive

- Empowering

- Goal-oriented

- Respectful

- Collaborative

- Co-produced

- Endowed with rights and responsibilities

- Governed through shared accountability

- Evidence informed

- Led by whole-system thinking

- Ethical

(WHO, 2017, pp. 10–11)

The end goal of Integrated Healthcare Services is that citizens experience relevant and cohesive healthcare services of a high and consistent quality throughout the course of their lives. The movement towards Integrated Healthcare Services is energised by the often fragmented healthcare service offers today, which are often not personalised or integrated into people's every day lives, as well as by the trend of Health Consumerism.

Peder Jest explains that Integrated Healthcare Services are good and inter-dependent relations in the healthcare sector between hospitals, GPs, municipalities and citizens, with a special emphasis on patients and citizens:

> *"Integrated Healthcare Services I think has come about because of the desire, not just in the healthcare system, not just to have people getting much better outcomes for their own personal*

"it is first the patients and the citizens, then it is the GPs and municipalities, and then if they need us it is the hospital systems. And Integrated Healthcare Services is; are you working together around the patient and using the same data, having the same way of looking at the results and the solutions and to be sure that you are all thinking in the same direction and that it is what the patients and the citizens want. That is integrated healthcare" (Jest, 2018).

The healthcare system is changing and it will continue to change into a new paradigm where the citizen will be a much more active co-producer and co-responsible of health in the future. The paradigm change includes a redesign of the way healthcare services are delivered and managed, towards an integrated healthcare delivery system. The end goal is that citizens experience relevant and cohesive healthcare services and journeys of a high and consistent quality throughout their life course.

WHY ARE INTEGRATED HEALTH-CARE SERVICES RELEVANT?

Integrated Healthcare Services as a concept is influenced by the mega-trends of urbanisation, technological advances, change in healthcare bur-den, polarisation, individualization and democratisation, amongst others.

Healthcare systems around the world currently face major challenges due to the increased life expectancy, cost of chronic diseases and multi-morbi-dities that the demographic shifts present. This places a constant pressure on the resources of the healthcare sector.

HOW ARE INTEGRATED HEALTH-CARE SERVICES ACHIEVED?

Integrating healthcare services across sectors and departments demands a strong collaboration between all stakeholders across sectors. John Christiansen employs an engine analogy to describe this collaboration:

> "I see it as a simple principle. I see it as an engine where parts must fit together, have meaning for each other without every part being able to handle or matter on its own (...) A symbiotic relationships where things matter to each other and help optimise one another. So, things that fit together like gears in a machine." (Christiansen, 2017, translated from Danish).

In a similar way, Kevin Dean compares Integrated Healthcare Services to a "a 20 layer cake which only tastes good when all of those layers have been cooked properly and put well together" (Dean, 2018).

Hal Wolf explains that in order to collaborate as a joint system the diverse individual healthcare providers will need to think and work differently:

> "... How do we get an entire system looking simultaneously and integrate its approach to care, at the individual level? So that an individual is not going from one place to another but that the physicians, the clinicians, the family are all integrated in focusing on the individual from a care standpoint. So we are beginning to see this recognition across all healthcare systems, that in order to reduce waits, to get to faster conclusions, to provide better care to the individual, we need to think and look collectively, against all of our different disciplines and try to do so in a simultaneous way, for when we are called upon in order to contribute, be able to have the benefit of the information about that person that has gone from discipline to discipline, have care pathways that are designed to cut across the multi-disciplines of care, and also have the tool sets that are available for continuity of care to exist" (Wolf, 2018).

INTEGRATED HEALTHCARE SERVICES IN THE DANISH HEALTCARE SECTOR

TODAY

Denmark is consciously aiming for and working towards Integrated Healthcare Services and is a frontrunner internationally. The focus is on bringing down the silos, creating enabling organisational, financial and technical infrastructure and personalising healthcare to the benefit of the citizens.

DENMARK AS AN INTERNATIONAL FRONTRUNNER

At their core, Integrated Healthcare Services are focused on more cohesion and collaboration to provide coordinated, people-centered, end-to-end healthcare services. According to Hal Wolf Denmark is well on its way and well ahead of other countries:

> *"In the rest of the globe I think the patterns are the same it is just the difference of timing. Where Denmark started this journey 7, 8, 10 years ago, and is now in full swing towards those levels of innovation and investment, by the government and by the individual hospitals as well as the primary sector that is involved … How do we utilise the systems that are in front of us, reduce our bed days per thousand, utilise sensors that are around us, utilise innovation, begin to understand the use of EMRs at a better level, barcoding, whatever the technology may be, and then the workforce development that comes behind it, the process change etc."* (Wolf, 2018).

Hal Wolf underlines the importance of innovation and the use of technology in order to achieve integration of healthcare services. In his opinion Denmark has the strength of a collective focus on innovation, information and integration:

> *"So I would say when you think about the consciousness of the healthcare system in Denmark, the thing that distinguishes it, maybe more so than any other system, that is the collective focus on innovation, the collective focus on the improvement and the use of information, which has always stood behind it, the focus on continuing to improve the integration of care. This really is one of the world-leading healthcare systems in terms of thinking about how to innovate, how to improve, versus almost anywhere else on the globe. There are certainly pockets that also exist but it is very impressive, very impressive in Denmark"* (Wolf, 2018).

Although Denmark might be in front when it comes to the integration of healthcare services, Peder Jest underlines that we still have quite a way to go:

"When we are abroad we are very proud of talking about the Danish model. I am not so convinced that it is correct that it is really good all the way. We have the possibilities but we still have some problems" (Jest, 2018).

Peder Jest recommends that the Danish Healthcare Sector finds inspiration in the rest of the World and combines the best practice into our healthcare system (Jest, 2018).

BREAKING DOWN THE SILOS

The healthcare sector today is characterised by multiple stakeholders, which are on the one hand independent of each other and on the other interdependent on each other. Cross-sectorial cohesion and collaboration is a much-debated topic and expressions like 'breaking down the silos' and 'bridging the gaps' are all but infrequent in healthcare debates.

"Our healthcare system today in Denmark is very silo-based in its way of organising things. Different authorities. We have a centralisation, we have a subspecialisation. So it is rather fragmented" (Jylling, 2017).

The silos refer to the notion that as a general rule each sector, each organisation, each department etc. manage their own self-contained healthcare field and –services independently from other sectors, organisations and departments. The responsibility for what happens in "the gaps" between healthcare providers is as such not assigned to anyone, except the citizens/patients who are in transition. The silo thinking is a result of the way the sectors are managed, in a hierarchical structure, with management tools and financial models that do not account for the need to collaborate across sectors, but rather enforce fragmented healthcare services.

Erik Jylling is not alone in pointing out the fragmented healthcare services in Denmark. In mandagmorgen's investigation of 'the healthcare system according to Danes', where 6,000 Danes were asked about their opinion on the Danish Healthcare Sector, mandagmorgen conclude that the key issue for Danes (66 %) is cooperation between hospitals, General Practitioners and municipal care (Mandag Morgen & TrygFonden, 2016).

Providing healthcare services that fulfill the expectations of the citizens/patients will therefore require increased integration of services through collaboration and cohesiveness between healthcare sectors. In order to fully achieve Integrated Healthcare Services, it is essential that the silos will be brought down in the long term.

BUILDING AN INFRASTUCTURE

So what does it take to bridge the gaps and eventually break down the silos? According to Hal Wolf and Peder Jest, consolidating an integrated healthcare ecosystem is dependent on building an infrastructure. This infrastructure will need to be multidimensional and include organisational, financial and IT aspects (Wolf, 2018) and (Jest, 2018).

In relation to the organisational infrastructure Peder Jest argues that:

> *"The hospitals also have a very good connection with the GPs because the GPs are the gatekeepers, they are the only people that can deliver patients to the hospital. They decide. And that is a good system, I think. Not everyone can just go to the hospital, of course they can in accidents and so on but I think it is a good thing with a gatekeeper; one clever person that can decide, do you need to go to the hospital or could we use another method for this"* (Jest, 2018).

At the same time, he acknowledges that the organisational infrastructure between General Practitioners, the municipalities and the hospitals, however, still has room for improvement:

> *"The connection between the GPs, the municipalities and the hospitals, still needs to be better. We still have some problems that we do not have very good solutions for. And also giving messages back to the GP from the hospitals, they are, alone in our region, more than 650 small entities of GPs, and it is small companies in fact, and how should we deliver the same message to all these people? So we need to think differently! And we try to think differently! But I think we really have good ideas of how to work in a different way"* (Jest, 2018).

THE ORGANISATIONAL INFRASTRUCTURE

The organisational infrastructure concerns designing a cost-efficient integrated service delivery system, which provides high quality healthcare services focused on the needs and preferences of the citizens/patients. In the welcome speech at the WHINN (Week of Health Innovation) Hospital+Innovation Conference 2017, Stephanie Lose, President of the Regional Council of Southern Denmark, stated that "the patient service comes first!". The design of a patient-centred and integrated service delivery system includes cohesive patient journeys through coordinated workflows, pathways and transitions. Citizens should not need to navigate between sectors and departments, healthcare professionals should instead improve their ability to collaborate. This will require each healthcare provider to offer flexible services that are naturally integrated in the entire coordinated patient journey, e.g. move the delivery of services to the patients in their home or at other external locations like GP's or local health centers.

According to John Christiansen and Peder Jest organisational structural changes include designing the future integrated service delivery and establishing an infrastructure that will support the collaborative care services across sectors, as well as preparing the healthcare personnel for their new roles and responsibilities, as task may be allocated differently between healthcare providers than today. These changes will entail a need for cultural changes and competency development, which is supported by management through dedicated resources and openness to cooperation, collaboration, patient-centered focus and change (Jest, 2018) and (Christi-

ansen, 2017).

THE FINANCIAL STRUCTURE

As previously mentioned, promoting Integrated Healthcare Services will require a management-anchored alignment of incentives and payment structures to support a collaborative joint responsibility across healthcare providers. The new financial structure will need to encourage integration of services centred around the patient/citizen and support the changes in roles and responsibilities.

When it comes to financial management in the healthcare sector, it is important to mention that the Danish Healthcare Sector is currently experimenting with other ways of organising and financing healthcare. For example, the potential of valuebased healthcare is being investigated in Bornholm Hospital ('KORA evaluerer forsøg med værdibaseret styring på 'Udviklingshospital Bornholm' - KORA').

In connection with valuebased healthcare, John Christiansen argues that the Danish healthcare sector of the future will focus on quality:

> "So a change of focus, from producing a lot to producing the right things, at the right time, with the right outcome. And there has been a tendency that the incentives, which have been poured down over us, have more gone in the direction of speed and increased production. Where the future will, and this is already happening, the future will bring a larger focus on delivering quality" (Christiansen, 2017).

THE TECHNICAL INFRASTRUCTURE

The aim of the technical infrastructure is to form the platforms that allow for relevant realtime access to information across healthcare stakeholders. The focus is increasingly on open platforms and interoperability as well as ensuring transparency, meanwhile ensuring data security. Hal Wolf sees potential in collaborative technologies that make information available and actionable for the relevant stakeholders (Data Analytics). He underlines the importance of achieving a complete integration of data and information:

> "Denmark has not fully achieved complete integration of data and information yet but it is working on it very tightly, so there are pockets of integrated care" (Wolf, 2018).

PERSONALISING HEALTHCARE

Healthcare services are not isolated services detached from each other or from the everyday life of a patient. The increasing people-centred focus

in healthcare includes personalising the healthcare service delivery to the personal needs and preferences of the person, as a patient and as a private person, through a holistic approach. At the same time patients are assigned an active and collaborative role, in which the healthcare providers support them in self-managing their illness. The relationship between healthcare providers and citizens/patients is increasingly characterised by co-production, in that all parties have an active role and a shared commitment and responsibility for managing the health of the citizen (Health Consumerism).

Hal Wolf argues that there is a clear focus on the patients as health consumers and improving the services for the patient:

> ” Without question I am seeing municipalities working regions, the individual hospitals, the national focus on innovation. All of this has a lot to do with integrating services, which are being brought forward for the embetterment of the citizen, for the embetterment of the consumers or the embetterment of the patient. So in Denmark in particular as I see the changes in funding mechanisms, as I see the national focus on integration and improving and facilities, behind every conversation I have heard is recognition of the expectation on the consumer level and the need of the institutions to change for the embetterment and the usability at the patient level and the consumer- and the citizen level. It is well and alive inside Denmark, and it is what gives everyone a lot of parts (to play) and moving in that direction” (Wolf, 2018).

John Christiansen also acknowledges this focus in the Danish Healthcare Sector:

> ”I now see a plan that actually indicates the possibility of creating more integration between the systems we have in the healthcare sector today, both between the municipal and the regional levels as well as the state level. A system where the patient is viewed as a significant contributor and co-responsible for managing their own health, and where we as emloyees (nurses) come into play in different ways” (Christiansen, 2017).

IN 2025

Erik Jylling believes that over the next ten years we will move closer to more systematic integrated healthcare:

> “I think we will see a much more person- or patient-centered healthcare system in 2025. I think we will see a healthcare system which much more takes its point from the patient's view, and where the patient is a much more interactive agent in his or her own personal record” (Jylling, 2017).

This is in line with the trend of Health Consumerism, which forces the healthcare sector to center around the users/patients. Erik Jylling also believes that the Danish Healthcare system will be completely digitalised in 2025, in line with the trend of Data Analytics.

Erik Jylling's predictions are backed by John Christiansen who already sees an attempt to make a plan pointing forward where both the region and municipalities will have different parts to play than they had 10 years ago in providing service and nursing to those citizens who have a specific need but also in relation to health promotion and prevention (Christiansen, 2017). John Christiansen predicts that in the future the different healthcare actors will work together in integrated collaborations around the patients and thereby create coherence and integrated care. He argues that there will be less silo-thinking and the first atempts to try to bring down the silos are already taking place in e.g. Esbjerg FAM and Esbjerg municipality, in the outpatient psychiatry or in childrens diabetes care being handled in the patients own home (Christiansen, 2017).

According to Danish Regions, Danish healthcare will gradually move in the direction of person-centred and integrated healthcare services. In their "Direction for the 'Citizens' Healthcare System'" from June 2015 it is argued, among other things, that there is a need for cultural change and for involving the users, citizens as well as healthcare personnel. The point of departure should be the needs and preferences of the citizen as well as their experiences, and they should be given the opportunity to manage as much of their own journey as they can and want to. In the end, citizens should experience holisticness and cohesiveness in their healthcare services across departments, organisations and sectors, and they should receive the support they need (Plan for borgernes sundhedsvæsen, Danske Regioner, Juni 2015).

CULTURAL CHANGE

In line with Danish Regions, Peder Jest argues that there is a need for a cultural change, and there is a need to employ Smart Health technologies to relieve the pressure on the healthcare personnel:

> "I have to say we need to have a cultural change, perhaps a cultural revolution aimed at the employees at the hospitals. Because they are working very hard today and they are very busy, and there are a lot of patients (…). And that is why these smart health technologies have to be used by the employees in the future . They (red. the personnel) dont expect it. I expect that 70% of the employees they are not thinking about the future, they are thinking about what is happening here today and they even can't imagine how it will be in 5 years from now(…) And I think a lot of things

will happen in five years. And a lot of new expectations in the next generations will show up and we have to educate the people, our employees, much more in thinking different. Making a cultural change" (Jest, 2018).

THE USE OF TECHNOLOGY

John Christiansen agrees with Peder Jest in bringing in smart health technologies to support the healthcare personnel, and he adds that we already see a tendency where citizens push new technology on the professionals and that this trend will become even more dominant in the future:

> *"We will see that patients of their own accord choose to bring in new technology (Smart Health Technology) that we as professionels are not familiar with. So, everything will happen much faster and the citizens will assume more responsibility by themselves before they even meet the healthcare sector. I think this will be a new player in the market (Health Consumerism). We already see strong tendencies in this direction today"* (Christiansen, 2017).

Erik Jylling also argues that new solutions, e.g. technologies, and digitalisation will be necessary components in integrating Danish healthcare:

> *"I see a very great future for the healthcare system, many challenges but also many solutions in the upcoming years. But it gives us the challenge that we have to use all the solutions that are out there and we have to put up demands for what kind of solutions we need and challenge companies to build those solutions for us. But I am very optimistic that it will happen and that we have the ability to digitalise the healthcare system to that extent that we could fulfill those basic goals we have for the healthcare system"* (Jylling, 2017).

There is an increasing willingness in the public sector to engage in open collaboration with private companies and other partners to solve the challenges of the healthcare sector together.

HEALTHCARE IN THE LOCAL ENVIRONMENT

Erik Jylling believes first and foremost that the patient's diagnostic, prehab and rehab will take place in or near people's own home. Secondarily, he believes that the more specialised hospital services and healthcare services will have a more supporting set up than today. And that the patients will have more abilities and possibilities to interact with the system. He argues that we will see a system that is much more differentiated and supports strong and less strong patients accordingly (Jylling, 2017).

Peder Jest backs this forecast of treatment locally:

> *"The primary trends, and perhaps not everyone will like what I say now, will be that a lot of people do not have to go to the hospital, they have to be treated at the GPs, perhaps together with some physicians from the hospitals, but they have to be treated away from the hospital ... but feel that they have the hospital near them. And a lot of people, healthy young people, have to treat themselves"* (Jest, 2018).

Peder Jest underlines the active role and responsibility of the citizens in "managing (their) own health, taking measurements. And treating yourself to some extent will be routine within the next five years" (Jest, 2018). In this connection he also argues that citizens need to be educated in managing their own health.

FOCUS ON PREVENTION

Josep Roca advocates a stronger focus on prevention, due to the potential for really generating cost-efficiency (Roca, 2017). Erik Jylling agrees:

> *"We need to help people take care of themselves and support the majority of patients through prevention and support"* (Erik Jylling, WHINN 2017).

CHALLENGES FOR INTEGRATED HEALTHCARE SERVICES

The challenges for Integrated Healthcare Services are related to culture, financial structures and financial pressure due to the changing demography. And facing these challenges will demand a management focus in the healthcare sector.

CULTURAL AND FINANCIAL BARRIERS

Erik Jylling from Danish Regions believes that our primary challenge for organising healthcare in Denmark is creating a joint focus across different healthcare providers and ensuring a continuum of care for the patient, through sharing more data across sectors, upgrading competencies and supporting prevention (Jylling, 2017). And in this connection he sees both cultural and financial barriers:

> *"The challenges are if we can overcome our traditional way of planning things. It is concerning our economy, the incentives, the way we subsidise the right service and not the service that is favourable for the single element in the system. That we can overcome our traditional way of cultural thinking concerning how we deliver service, what we define as patients' needs instead of asking the patient what they need ... So it has a lot to do with economical barriers, with cultural barriers, and another way of organising public healthcare services, integrated with social services and the labour market services so that we can get the buck for the dollar"* (Jylling, 2017).

Peder Jest adds a need for more respect to the equation:

> *"The primary challenges are how to work very close together and understand each other and respect each other, whether you are a GP, a hospital physician, a hospital system or a municipality. And I think we need a little more respect for the different ways we have to think and work"* (Jest, 2018).

John Christiansen supports this sentiment about the need for solving the tasks in collaboration and respecting each other's contributions and he adds that in order to achieve this the separate parties need to actually meet and understand what each party does (Christiansen, 2017). He also underlines:

> *"I see a need for us to somehow have an eye for how we can optimise each other rather than thinking about what the economic incentive should be"* (Christiansen, 2017).

FINANCIAL PRESSURE/THE SILVER TSUNAMI

When identifying the primary challenges for Denmark in achieving Integrated Healthcare Services, Hal Wolf adds to the cultural and financial aspe-

cts. He identifies four main challenges, which are general for most countries; 1) integration and exchange of information, 2) integration of processes and technology, 3) coherence between new facilities (e.g. hospitals) and the "silver tsunami" needs, and 4) the funding model. (Wolf, 2018).

John Christiansen from Danish Nurses Organization supports Hal Wolf's challenge in relation to the "silver tsunami" and explains:

> *"I think this is an exciting time when we are in the process of building hospitals that do not match the needs of the population but instead the population will probably need to adjust to the highly specialised hospitals that are being built, and the citizens can do more themselves in a shorter time. And it makes sense. At the same time we know that the demography will put us under pressure due to the ageing society. We may think that in the future we will be really healthy elderly citizens, the truth is probably that we will be active elderly citizens but probably not as healthy as we imagine. We will probably have more chronically ill, more multi-morbidities and everything else. And I think, especially the hospitals as a sector has neglected much of this in the way they organise their services today"* (Christiansen, 2017).

John Christiansen believes that the challenge will be to create coherence and integration in a situation of *"likely shortage of personnel resources, likely shortage of finances, likely shortage of political will to reprioritise and invest further in the public healthcare system"* (Christiansen, 2017).

In the light of this impending financial pressure, which will potentially also be affected by increasing costs due to new treatment possibilities, John Christiansen argues that the healthcare sector will be under pressure due to the numbers and compentencies of healthcare personnel and *"we need to work smarter … and utilise the technological possibilities and involve the citizens and their families in the healthcare task."* (Christiansen, 2017). Technology will particularly be relevant when the distances increase due to the centralisation of e.g. hospitals.

He argues that health promotion and prevention will be an important focus:

> *"Because if we continue to extrapolate the expenses that we have now the money will run out and the workforce will run out. So, again we come back to the need for a bigger health promotion and prevention effort. And to work smarter with the people who become ill, not just acutely but perhaps particularly the chronically ill"* (Christiansen, 2017).

MANAGEMENT FOCUS

Peder Jest underlines that the changes in the healthcare system are dependent on the mindset of the management:

> *"And I think the leadership from the healthcare sector really have to think differently from what they are doing today. They are oldfashioned too, they are thinking of the next year's budget and how to reach the black lines and not red lines so we can keep our jobs and so on but I think they have to act quite differently, in fact I think we need a revolution in the healthcare sector!"* (Jest, 2018).

OPPORTUNITIES FOR COMPANIES

Solutions that support the general development towards Integrated Healthcare Services across multiple stakeholders will be relevant and necessary for the Danish healthcare Sector of 2025 .

There are particularly opportunities for companies developing solutions that can support communication, collaboration, coordination, management and business intelligence across sectors, organisations and departments. More specifically, solutions that contribute to transparency and information sharing across healthcare providers will address essential challenges toward achieving Integrated Healthcare Services. If a solution can offer realtime data collection and meaningful visualisation, which is integrated with the relevant existing systems, they will have a definite advantage.

 Erik Jylling argues that the Danish Healthcare Sector is fairly homogenous and digitalised, which presents an opportunity for companies:

> *"Companies looking into the Danish healthcare system and looking into a system where we have the wish of being more integrated and more homogenous, across sectors, should consider that we have a very homogenous healthcare system, after all. We have well-educated citizens. We have a well-digitalised healthcare system but not as much as it could be, and as much as we wish"* (Jylling, 2017).

BARRIERS FOR COMPANIES

Although the Danish healthcare sector is moving towards providing integrated healthcare services, the healthcare sector of 2025 will still be characterised by many different stakeholders, who are used to managing their services separately from other stakeholders. Although integrated healthcare services are the joint goal, the process of getting there will not be easy. Companies developing integrated solutions for this collective healthcare sector should be aware of the diversity and fragmentation of these stakeholders and the challenges it may present to ensure motivation, involvement and ownership across many different stakeholders. Each stakeholder will also have their individual budgets, and solutions that cover multiple stakeholders need individual decisions from each stakeholder.

Integration of services across many different stakeholders with each their management and way of doing things is complex. When it comes to data integration and - sharing another aspect to be aware of is that trust in data sharing is not a given. The business models and/or legal regulations in connection with data sharing on open platforms can also be barriers for implementation of integrated data solutions.

Peder Jest underlines the cultural barrier for new ways of doing things and new solutions:

> *"Then there is the cultural barrier. Are people really trying to look into the future? Or do they think that the way we are working today is also the way we are working in five years? … I can simply say that they are thinking the way that they are doing today"*
> (Jest, 2018).

The lack of perspective on the future ways of doing things may present a barrier for companies aiming to develop the solutions for 2025, as collaborators from the healthcare sector may need the support of solution developers in identifying new ways of working.

John Christiansen sees a potential barrier in gaining access to collaborative innovation- and test environments:

> *"One of the barriers that I have seen is that it takes relatively large companies to gain access. Sometimes it is my experience, and this may seem a bit critical, but that companies primarily meet a sales organisation when they are asked to showcase a product. While it takes a lot more work for a small company with an idea to get into a test environment where there is an actual focus on allowing access and providing citizens and personnel to test solutions"*
> (Christiansen, 2017).

Carsten Obel agrees and suggests that the healthcare sector should invest in and provide opportunities for companies to collaborate with the health-

care sector in creating better solutions:

> *"The barriers today is that we are a small country, and we have limited investment power, so we need to focus on the possibility of making testlabs that respects the autonomy and integrity of the patients and still, all the times dynamically, try to make a better and better solution. Nobody else can document things like in the Nordic countries. We should try to convince the political system, that this is something we should invest in"* (Obel, 2017).

CONSIDERATIONS FOR COMPANIES

When developing solutions for healthcare, particularly solutions that handle personal data, the following aspects will be relevant to consider.

GENERAL DATA PROTECTION REGULATION (GDPR)

In May 2018 the General Data Protection Directive from EU (GDPR) will enter into force in the EU (European Council, 2016). The purpose of the directive is to strengthen citizens' fundamental rights when it comes to data, privacy and digitalisation – but also to simplify rules for companies and thereby facilitate growth. Some of the more noteworthy changes enforced by the directive are the possibilities of issuing fines amounting to up to 4% of a company's annual turnover.

In order to adhere to the GDPR, companies may look at the Guidelines for Cybersecurity (ISO 27032).

CONSENT

The regulation regarding data subject consent has been further strengthened and clarified. Consent must be explicit and the citizen must be clearly informed of the precise and defined purpose of data collection. Furthermore the citizen has the right to revoke consent. If consent is revoked the data must be deleted and proof that it has taken place presented to the citizen. This will affect all companies handling data pertaining to the citizen's health.

DATA PORTABILITY

Data portability is a new topic introduced by the GDPR. With GDPR the citizen will have the right to data portability. This means that if you collect personal data the citizen has the right to receive the personal data concerning him or her in a structured, commonly used and machine-readable format. They also have the right to transmit those data to another organisation that collects data about the citizen. The purpose of this obligation is to limit the number of times citizens have to answer questions about the same subject matter, e.g. age, height, gender etc.

This is particularly interesting from a healthcare perspective because data might be required to be shared across different organisations in the healthcare sector to a much greater extent than they are today. This might also prove a new business opportunity for companies, since there may be a whole new market emerging for solutions to support data portability, e.g. by providing system integration or sharing information between different IT systems.

EUROPEAN MEDICAL DEVICES DIRECTIVES

In addition to the more general GDPR directive, an updated directive on Medical Devices will enter into force in the spring of 2020 and 2022. The two directives (EU) 2017/745 "MDR" & EU 2017/746 "IVDR" - (European Parliament & European Council, 2017a, 2017b) heavily regulate what is defined as medical devices, and how such devices can be tested and used within the boundaries of the EU. This is central for especially Data Analytics and Smart Health Technologies. 'Medical purpose' is defined as any type of diagnosis, prevention, monitoring or treatment or alleviation of disease or disability. The vast majority of devices which collect health information are likely to be considered medical devices, even if they do not process or analyse the data. Companies operating within the domain of health should proactively investigate compliance with these regulations and adjust development processes accordingly.

ETHICAL GUIDELINES

Bringing technology into the sphere of healthcare services brings with it relevant ethical considerations. The Health Innovation Centre of Southern Denmark has developed two videos that illustrate the expectations and challenges that may arise when new technology meets the healthcare sector. The videos focus on the perspectives of the patients at home and the clinicians working across sectors, respectively. Companies may consider these ethical aspects in their development process.

ADVICE FOR COMPANIES

ADVICE FOR INTEGRATED HEALTHCARE SOLUTIONS

Companies developing solutions for Integrated Healthcare Services in the Danish healthcare sector of 2025 should particularly consider the following:

ADAPT TO CHANGE IN TASKS AND RESPONSIBILITIES

The movement towards Integrated Health Services includes that primary and secondary care becomes more integrated; this implies that tasks will move between municipalities and regions, but also that new tasks and responsibilities emerge. Erik Jylling argues that:

> *"We have to share much more data than we do today, across sectors. And we have to upgrade competencies in different places in the healthcare system, especially in the municipality area, so that we can discover patients before they become patients, when they decline in their social status or social ability to take care of themselves"* (Jylling, 2017).

These changes may lead to a need for different solutions/products. It is therefore important that companies are aware that solutions developed for the Danish healthcare sector of 2018 may not automatically apply in a 2025 context.

DESIGN FOR THE SUPPORT SYSTEM AROUND THE PATIENT

When looking at health consumers, they usually have a large support system surrounding them; families, friends, neighbours, people they meet in their everyday lives, all of whom are often overlooked and not drawn into the value chain for healthcare. Companies can include these actors as well as the community aspect in their design process to empower not only the health consumer but also the health consumer support system, e.g. through connecting people digitally.

> *"I know that [the relatives] are critical. And I think support groups, caregivers and families are crucial in care (…) and they are very unsupported. There is no real systematic mechanism to help them, so I think their role is critical. If you look at the 8 minutes that the practitioner gets, and maybe the 10 minutes that the nurse navigator gets, the family gets the other 23 hours. And their role is around the clock, it's 3 o'clock in the morning, it's midday, it's a constant issue. So they are a critical path. And very overlooked as well, I think, and very misunderstood"* (Watts, 2017).

GENERAL ADVICE

In their prioritisation of future research and development activities, companies that develop solutions for the Danish healthcare sector of 2025 are adviced to consider how to:

- Solve the User's Needs

- Co-Create with Users and Stakeholders

- Understand and Document the Value of their Solutions

- Contribute to Implementation

SOLVE THE USERS NEEDS

"It is not technology for the technology's sake; it is for the patient's sake we are working!" (Jest, 2018).

Peder Jest underlines that serving the patients is the primary purpose for the healthcare system. The development of new solutions should be centered around the users and their needs.

UNDERSTAND THE NEEDS AND CHALLENGES OF THE USERS

The users are the experts! A common challenge for development of successful solutions is lack of knowledge about the users. Investing the time and resources in identifying and understanding the needs and challenges of the future users of your solutions may be a worthwhile investment.

Erik Jylling says:

"Just bringing in new solutions and declaring that innovation will do it is not enough for a public healthcare system. Who is against innovation? Nobody! But we need to have solutions that can help us running the system. And we have to have the ability to assess that the solutions are also in favour of being integrated in the system. So it should benefit the patient, the outcome, and it should also benefit the spendings of the public economy" (Jylling, 2017).

The healthcare sector is interested in solutions that match their needs and challenges.

Hal Wolf underlines: "Companies have got to figure out how to help integrate and develop innovations that are not just interesting, that can be utilised by the health systems themselves. And that is the big challenge that companies have, it is not about simply developing (...) technology. Companies that are developing

technology for technology's sake will not win!" (Wolf, 2018).

For companies it may be relevant to look into the fields of user-centred design and -innovation, anthropology and design. These fields may offer approaches and essential tools to uncovering unrecognised needs and transforming these insights into valuable solutions.

DESIGN FOR USABILITY

The technological development offers many opportunities for new solutions, and there is undoubtedly a vast national and international market for healthcare solutions (Jylling, 2017), however it is essential that companies and developers focus their efforts on developing solutions that address and solve the actual needs and challenges of the healthcare sector and their daily operations.

Hal Wolf goes as far as to say:

> *"Technology by itself without the process piece and the people piece that sits behind it, it's useless, it means nothing"* (Wolf, 2018).

When designing new technologies it will be important to accommodate the users and design for user preferences and capabilities. John Christiansen argues that:

> *"For new technologies, in the future I (nurse) will not need to educate myself for new technologies but technologies will be ready to incorporate us all, whoever I am, without needing to read piles of manuals but that it will be more intuitive"* (Christiansen, 2017).

He continues:

> *"If systems are so complicated that we have to educate ourselves to understand the systems that we use for reporting, then maybe we are not the ones who need to be educated, maybe it is the way we think systems that is not intuitive enough"* (Christiansen, 2017).

In other words, technologies should be adjusted to fit the capabilities of the users and not the other way around.

POOL MULTIDISCIPLINARY RESOURCES IN OPEN INNOVATION COLLABORATIONS

There is a general trend towards open innovation, in the acknowledgement that the benefits of pooling resources and knowledge allow 1 plus 1 to equal 3.

Peter Watts argues the importance of a multidisciplinary approach. He argues that companies … :

> *"need to get a balance of skills (…) My team is made up of technical people, medical people, financial, legal, and I think that healthcare is so complicated, it needs understanding, it needs empathy, it needs lots of different skillsets. (…) I've been in technology all of my life, and I've been very lucky to see many good things happening in that time. And I'm very aware that technology isn't the solution to anything, it's the use of it that's the value. And you need smart people to do that, and you need multi-discipline people"* (Watts, 2017).

Carsten Obel agrees that multidisciplinary collaboration is a good strategy:

> *"You should work together with people who have quite as different backgrounds as possible and engage in as many collaborative networks as possible, but still have the focus on the citizen and the value creation in focus"* (Obel, 2017).

A company should not be an island in itself but acknowledge that others may have knowledge and expertise that is worth utilising to accelerate and improve development of new innovation. Especially large corporations could benefit from collaborating with SMEs/ smaller companies to a greater extent, by e.g. auctioning their needs for small companies to develop on (Munksgaard, Johnson, & Patterson, 2015). This is both the fastest process as well as the most cost-effective in the long run. Both large and smaller companies can utilise their best skills, which are e.g. the enthusiasm and ideating skills of small, entrepreneurial companies and the grounded strategy and long experience of larger corporations, which also often have more conservative professions and less resources for experimentation and new thinking (Nissen, 2017).

Peter Watts agrees that large companies and smaller companies could benefit from collaborating:

> *"Big companies can explain their roadmap and where they are going and what they need, and the benefit to the industry is fantastic. They may have big money for R&D but they don't always have the time and they don't always have the enthusiasm that small companies have. So bringing those together I think, is a real big key, and I think the role of government is really important too"* (Watts, 2017).

MATURE SOLUTIONS THROUGH PUBLIC-PRIVATE COLLABORATION

There is a growing general interest from public partners in Scandinavia in opening up and collaborating with private partners in Public-Private Partnerships (PPPs), Public-Private Innovation Partnerships (PPIs) etc. This openness enables companies to get access to and collaborate with the public healthcare sector (Nissen, 2017). Collaboration with public partners presents a significant opportunity for private companies. However, it is important that companies are aware that the healthcare system is a 'supertanker'. Things take time; e.g. rules and regulations, particularly within public procurement, are time-consuming. Quick wins are not possible and companies should expect a long lead time from the first dialogue to a contract (Øllgaard, riis, Boding-Jensen, & Garsdal, 2016). This timespan may clash with the shortterm focus of many companies, particularly SMEs. Companies are advised to invest in the long term when collaborating with public partners.

The Capital Region of Denmark argues that bidding on a tender does not start with writing the bid. They advice companies to: *"Communicate with the municipalities leading up to a tender and influence the process. Prioritise which tenders you want to invest in"* (Øllgaard et al., 2016). The primary focus and outcome of public-private collaborations is not sales/procurement. Helle Nissen argues that from a company perspective collaborations are a long-term strategy to achieve a) insights into needs and organisational structures, b) further needs-based development of a solution, and c) networks with relevant stakeholders (Nissen, 2017), all of which can influence future sales potential for a solution.

FAIL AND LEARN EARLY THROUGH USER TESTING

Fail fast, succeed sooner! A prototype is not a tool to prove that you are right. It is a tool to help you learn. User testing is an essential part of innovation processes within healthcare. Getting new insights and knowledge about stakeholders through testing and co-creation can ensure that a solution meets the user needs and demands.

The general rule of thumb is to test early, fail fast and learn cheaply. Helle Nissen recommends that companies: *"test it! Have different kind of user groups to test it. Not only focus on one user group, but have different kind of stakeholders test the solution. And have a dialogue also with different kinds of stakeholders to understand what they value, and then you can adapt the soluti-*

on so that it fits these kinds of values among the different stakeholders" (Nissen, 2017).

Carsten Obel argues that the possibilities of testing is special and very valuable for Denmark:

> *"Testing approves that it actually works and gives an 'approved in Denmark' sign. So I think this is a great opportunity that health providers have in Denmark, because this doesn't exist in any other place in the world, except for the Nordic Countries"* (Obel, 2017).

John Christiansen believes that there are so many needs in the healthcare system that new solutions can address, however companies need to prepare to fail and learn, and they need to investigate the market:

> *"The challenges will be having the energy and courage to fail many times and having an overview of whether what one is developing is already out there"* (Christiansen, 2017).

SAVE TIME THROUGH ESTABLISHED CHANNELS

Each public region in Denmark has established a 'single-point-of-entry' for the industry (En indgang), similar to the single-point-of-entry for organising collaboration between public and private partners that many municipalities have. These access-points are specialised in public-private collaboration and matchmaking. They have insights into which departments and health professionals may be interested in collaborating within a specific field as well as access to test facilities and clinical trials, saving companies the time-consuming task of knocking on multiple doors.

UNDERSTAND AND DOCUMENT THE VALUE OF SOLUTIONS

> *"Some firms get to know how the system actually works and they get to know that in the healthcare system there are lot of different actors who influence the decision to buy a new innovative solution. So some of the firms who succeed to commercialise solutions across hospitals and regions, they actually take into account that there are a lot of different stakeholders at different levels within the healthcare system, and they use that when they promote their innovative solutions. So that they remember to take into account the different needs and the different values which different actors want to have taken into account"* (Nissen, 2017).

Selling solutions to the public sector can be a lengthy and complex process due to the stakeholder complexity and procurement processes. It is important to understand the value of a solution for the relevant stakeholders, and to document this value.

ENSURE BUSINESS MODEL AGILITY AND ADAPT TO DIVERSE CONTEXTS

It is important to be aware of the direction that incentive- and payment structures are moving in Denmark and how it will affect your solution. Company business models should contain the flexibility and agility to incorporate this development. This agility is even more necessary for companies aiming to bring their solutions to international markets where the financial structures are considerably different.

Erik Jylling argues the relevance of ensuring scalability of your solution:

> *"They have to take into account that the product should be scalable, and the product should bring us not only new products but it should bring us solutions that helps us solve the big fundamental structural problems that we see in the healthcare system, not only in Denmark but internationally, today and especially in the years to come"* (Jylling, 2017).

As previously described in Fail and Learn Early through User Testing there are many opportunities for testing solutions in a Danish context. It is, however, important to be aware that testing a solution in e.g. one hospital department with a few healthcare personnel representatives is unlikely to cover the organisational diversity across all Danish hospitals. Even less so across international hospitals.

Companies should develop solutions that incorporate appropriate flexibility to accommodate the diversity of organisational needs, nationally as well as internationally. According to Helle Nissen some *"firms as a strategy choose to engage in new collaborations (Public-private partnerships) in order to improve their product or in order to adapt it to a specific context"* (Nissen, 2017). She argues that:

> *"Firms have to interact with these different actors in some sort of way in order to adapt the development of their solutions, so they fit with the different kinds of users in the healthcare system"* (Nissen, 2017).

PROVE AND DOCUMENT THE VALUE

Helle Nissen underlines the importance of understanding your stakeholders and procurement processes (Nissen, 2017). Healthcare budgets are under increasing pressure and the healthcare sector is interested in the proven value and effect of solutions.

Erik Jylling argues that:

> *"companies that are concerned about developing new solutions for the Danish healthcare system should take into account that the economical pressure for public economy now and in the years to come will be quite substantial"* (Erik Jylling, 2017).

He underlines that the healthcare sector *"have to have the ability to assess that the solutions are also in favour of being integrated in the system. So it should benefit the patient, the outcome, and it should also benefit the spendings of the public economy"* (Jylling, 2017).

This necessitates not only an understanding of the value of the solution but also evidence of this value.

Business cases and technology assessments are often required prior to a sale to a public partner. Business case processes can be both time- and resource consuming. Therefore it is relevant to consider to what extent the results, criteria, quality and validity of business case results are transferrable to other settings and customers. Companies should take into account that a public partner will usually have a primary interest in business case results for their own specific context, so it will, as a general rule, be the responsibility of the company to ensure the focus on transferability of results.

UTILISE POLITICAL DIRECTIONS AND FUNDING OPPORTUNITIES

The Danish healthcare sector is mainly governed by politicians. Continuously assessing and following the political and public opinion, which is dynamic, may enable companies to utilise e.g. political waves to strategically time initiatives and communication in favour of the solution. It is also relevant to keep an eye on and utilise the many funding possibilities for innovation.

CONTRIBUTE TO IMPLEMENTATION

It is crucial to be aware of the importance of implementing solutions. Peder Jest underlines:

> *"You can invent anything and you can find evidence for everything but if you cannot implement it, it doesn't matter"* (Jest, 2018).

Like many others, Hal Wolf argues that implementation is much harder than the actual technology development:

> *"Well, I think the implementation of any technology at the hospital level, moving into the next generation of healthcare, just like in any industry, always comes down to three basic things; it's people it's process and it's technology! (...) the technology inevitably is the easiest part. It is changing the processes necessary to take care, or utilise the technologies, and then the cultural components of how to integrate them into daily work habits, and our expectations"* (Wolf, 2018).

Solutions that support the healthcare sector and contribute to implementation may have an advantage.

SUPPORT AND CO-CREATE IMPLEMENTATION PROCESSES

Jørgen Løkkegaard, CEO, The Danish Technological institute and Innovation Manager in Patient@home states in Mandagmorgen:

> *"Our experience is that technology represents only 20 % of the task with successful implementation, while the culture of technology accounts for 80 %"* (Jørgen Løkkegaard i Mandag Morgen nr. 35, 9.10.2017).

It is a common challenge in the public sector that some new solutions, which have been procured to save time and increase quality, are not fully implemented or adopted. This affects both the public sector, who do not fully realise the intended benefits of the solution, and the company, for whom the case becomes a poor reference.

It is clear that implementation is important and difficult (Wolf, 2018). Companies that are able and willing to support the public sector and co-create a strong implementation process for their solution are more likely to achieve a mutually beneficial outcome for all stakeholders.

DESIGN THE FULL SOLUTION

> *"Technology overall is never the answer! In any situation. In any industry. In any moment in time. You know, technology is a component of a full answer"* (Wolf, 2018).

Hal Wolf makes it crystal clear that technology is just one part of the puzzle; a much bigger part of that puzzle is the full service design. According to Hal Wolf the value of new solutions diminishes if the processes and culture are not changed (Wolf, 2018). According to Christian Bason, CEO at Danish Design Center, in order to succeed companies must challenge their assumptions regarding their company and solution and take their point of

departure in the user perspective as a motivating force for change (Bason, 2017).

Service design is active planning and organisation of people, infrastructure, communications, media and services. Service design contributes to good coherent service experiences. It helps to read, understand and identify users' needs and expectations so that you have a solid foundation for developing new workflows, services and products that actually work. Service design puts the user at the centre and gives you a fresh look into your own organisation, its habits and challenges (Schneider & Stickdorn).

Designing the full solution is therefore about combining the technology and service components into an integrated solution, and Hal Wolf underlines that what matters is integration of a technology into the daily operations and workflows:

> *"There are thousands of technologies available, they mean nothing until you load them into your own domain and begin to use them as a part of how you deliver care"* (Wolf, 2018).

VALUES AND RISKS OF INTEGRATED HEALTHCARE SERVICES

VALUES

Integrated Healthcare Services may add value for the citizens, healthcare personnel, healthcare sector and society as a whole in relation to cohesion, efficiency, reliability, transparency, information, coordination and flexibility.

MORE COHESION

Integrated healthcare services may lead to more cohesive patient journeys across the healthcare sector. For the patients and relatives this may give an experience of professional transitions where they do not need to explain the same things again and again. For the healthcare personnel the increased cohesion of services may improve communication and comfort in transferring and receiving patients, while reducing errors and misunderstandings. Erik Jylling predicts:

> *"I think, if we succeed, the healthcare personnel would experience that the work they do is much more relevant (…) I think they will experience a system where they are not obliged to use a lot of their working hours to document, because that will be automated, they will have much more focus on the treatment and the services around it"* (Jylling, 2017).

EFFICIENT AND APPROPRIATE TREATMENT

Cohesive processes may lead to faster diagnosis, which can in turn lead to timely and efficient treatment, the right treatment at the right time, and to faster recovery. This enables the citizens and their relatives to return to their everyday lives faster. Kevin Dean elaborates on the value of a person-centred, timely and more efficient diagnosis and treatment but also advocates the complexity and challenge of redesigning the system: Erik Jylling says:

> *"The value we will get if we bring them all together is immense, but so is the complexity of doing it. The value will come from having prevention and preventive actions start early enough to have an impact. Through prove to how processes are designed, so that you do not just suddenly turn up in a doctor's surgery suffering from terminal cancer. Be tested early enough to give cheap treatments which are going to help you at a lower cost. To have a long, healthy, productive and an economically sustainable combination of treatment and life. That is where the real value is"* (Dean, 2018).

John Christiansen and Peder Jest argue that being able to deliver efficient and appropriate treatment for each patient at the right time may lead to higher motivation and job satisfaction for the healthcare personnel (Christiansen, 2017; Jest, 2018).

The healthcare sector and society as a whole benefit from more efficient and higher quality healthcare services.

RELIABILITY

With cohesive services and journeys there may be less risk of falling between two stools in the gaps between the healthcare providers. The patients and their relatives can feel confident that they are taken care of throughout the entire chain of healthcare services.

At the same time, Integrated Healthcare Services and joint solutions better enable the collective healthcare sector to handle complex patients, who need care across many healthcare providers. The services for complex patients will be both more efficient and of higher quality. And the expenses of joint solutions can be shared between the sectors.

TRANSPARENCY, INFORMATION AND COORDINATION

Cohesive services include a transparent overview of what, when and where across healthcare providers, so that citizens always know where in the process they are and what the next step is. This may lead to security and comfort for patients and their relatives. At the same time, the accessibility of information across healthcare processes may lead to appropriate care and more time for patient care, as the healthcare personnel have relevant information available when they need it.

FLEXIBILITY

Generally person-centred and integrated healthcare services may improve the quality of healthcare services for the citizens and ensure more personalised and flexible services. The individual citizen and their needs and preferences are the point of departure for the services. Erik Jylling argues:

> *"I think the integrated healthcare services will add the value to the citizens that they experience a much more, what we call a hand-hold initiative, concerning the single citizen. They will have offers that are much more focused on their needs and their wishes to the services than we see today ... I think we will see a healthcare system which much more takes its point from the patient's view, and where the patient is a much more interactive agent in his or her own personal record"* (Jylling, 2017).

Peder Jest argues that increased outpatient treatment will provide flexibility and accommodate citizens' preferences to be treated closer to their own home and incorporated with their everyday lives (Jest, 2018). There is a general focus on helping a patient to return to their home, life and work as soon as possible. This is both a priority for most patients, for the healthcare system and for society as a whole.

RISKS

However there are also potential risks to consider.

NEED FOR INVESTMENT

The main risk for the healthcare sector and society as a whole is having the resources to invest in creating these fundamental changes in healthcare. John Christiansen underlines the need to be willing to invest in changing the healthcare system:

> *"I think finances will still play a major role … the will to actually pay what it costs. The will to invest. I think we have to acknowledge that we have to invest in something, then see the gains, before actually checking it off the list"* (Christiansen, 2017).

Peder Jest underlines the need for a revolution in healthcare, which demands investment and management focus:

> *"And I think the leadership from the healthcare sector really have to think differently from what they are doing today. They are oldfashioned too, they are thinking of the next year's budget and how to reach the black lines and not red lines so we can keep our jobs and so on but I think they have to act quite differently, in fact I think we need a revolution in the healthcare sector"* (Jest, 2018).

He argues that the politicians and patients are faster when it comes to changing their mindset, and the healthcare managers need to make sure that they are in front when it comes to new ways of doing things. For example, he would like to see the healthcare managers investing more in technology *"as a tool to do it better for the patient"* (Jest, 2018).

PREPARING THE HEALTHCARE PERSONNEL

> *"But the challenge will be making the available resources cover the demands that society poses but also the expectations from the citizens and their families"* (Christiansen, 2017).

John Christiansen predicts a potential risk that the healthcare personnel have not been given adequate support to prepare for the future demands. They need support for education, cultural change and different mindsets:

"One of the challenges for our profession (nurses) will be working on our mindset on how to deliver nursing care and how we will do that in 8 years time (2025). This is not very long from now, it is 3 sets of educated nurses. So, in principle it is tomorrow. However, seeing the patient as an active teammate, which we are already tallking about today and have done for many years. We also talk about rehabilitation and utilising people's self-care capacity. But the challenge will be making the available resources cover the demands that society poses but also the expectations from the citizens and their families. Therefore, I think that the patients will also be more their own man/woman, and at big part of our role will be to help the citizen and patient make the right choices" (Christiansen, 2017)

Peder Jest backs the concern about the importance of educating and preparing the healthcare personnel for their future role. He argues the need for a cultural change (Jest, 2018).

AVAILABILITY OF HEALTHCARE PERSONNEL

John Christiansen argues that there will be a shortage of healthcare personnel in the future. At the same time the way that the healthcare personnel perform their tasks will change significantly with the technological possibilities and expectations of availability (Christiansen, 2017).

The increased flexibility and accessibility of healthcare services whenever wherever has implications for the expectations for the healthcare personnel, how they deliver their services and their availability, e.g.:

"We are also beginning to discuss the borderless work. How should we view our work? Will it be 8 to 4 or what will the availability (of tablets etc.) mean when I am the contact person and in communication with patients practically 24/7. What does it mean to be an employee and available? This will be the big question; what will I accept as an employee? And of course also, how should I be acknowledged for this?" (Christiansen, 2017)

CASE:

DEVELOPING HOSPITAL BORNHOLM

Under the name 'Udviklingshospital Bornholm' the Capital Region of Denmark have exempted Bornholm Hospital from the region's rate management model from 2016 to 2018. The purpose is to gain experiences with new management- and funding models. The theory of 'Valuebased Healthcare' forms the basis.

In valuebased healthcare the management is focused on the value for patients rather than e.g. activity-based results. The hospital organises itself with a point of departure in the patient needs and coordinated patient journeys.

Bornholm Hospital focuses on eight initiatives:

- Better use of diagnostics

- Better overviews for the patients

- Use of the patients' own health information (PRO)

- Joint responsibility for admission and discharge of elderly patients between hospitals, municipalities and GPs

- Joint and flexible outpatient clinics

- Following patient preferences towards the end of their lives

- Culture, frames and competencies

- New types of visitation for acute patients

Bornholm Hospital will gain experience and document the effect of new management and funding models, which the Capital Region can use in potentially scaling these new ways of managing healthcare throughout the region.

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