SPECIAL REPORT

Care Pathway Transformation and Digital Health: The Time is Now

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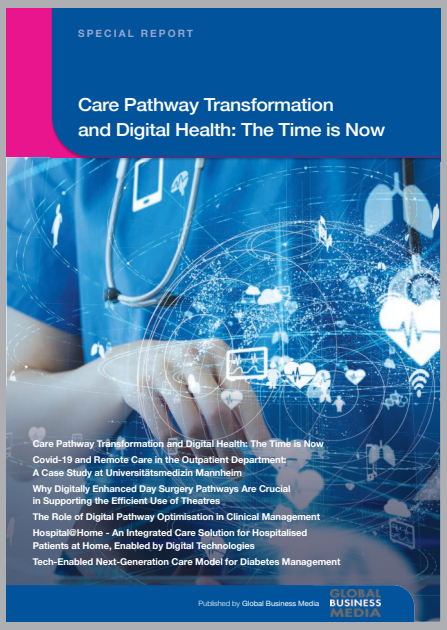

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Care Pathway Transformation and Digital Health: The Time Is Now

Foreword

The pandemic has accelerated digital health adoption and care model transformation. Providers can gain a competitive advantage by scaling innovations quickly. However, challenges include the proliferation of digital solutions and use cases, interoperability, regulatory complexities and lack of reimbursement. To overcome challenges, healthcare players need to focus on high-impact and proven use cases, embrace an agile approach to adapt to an ever-evolving landscape, deploy versatile and interoperable platforms, and develop a sustainable value-based business model.

Working with 300 providers in Europe on their transition to a 'new normal' post-Covid-19 gives Medtronic a good view of market dynamics and care model innovations that are getting rapid traction

Covid-19 Unlocked Digital Health Uptake and Care Pathway Transformation

The Covid-19 crisis has forced health systems and providers to make radical changes in how and where care is provided, accelerating shifts in care delivery models that were underway before the pandemic. Adoption of digital health, such as telemedicine or remote patient monitoring, spiked. Care pathways had to be hastily redesigned to incorporate those digital modalities as a bridge to care, and to facilitate the transition of care from saturated hospitals to alternative settings such as outpatient, digital or home.

As we enter the post-crisis phase of the pandemic, incentives for healthcare stakeholders remain strong to amplify the adoption and deployment of digital health and further transform care delivery models:

- In the short term, many health systems still have an acute supply and demand imbalance as they grapple with significant waiting lists and reduced capacity that is exacerbated by workforce shortages.
- The macro dynamics that challenged long-term health systems' capacity and sustainability pre-pandemic are unchanged (e.g. ageing population, a rise in chronic diseases, the cliff of retiring baby-boomer clinicians, rising costs, etc.).
- Barriers to change have lowered as acceptance from clinicians and patients for digital health technologies and related care model innovations has increased, and regulatory and reimbursement changes are being made that enable better access and viable business models.
- The healthcare landscape is fast-evolving, and competition is intensifying as investments in digital health have skyrocketed, digitally-enabled care models are proliferating, and both new market entrants and incumbents are actively reshaping how care is delivered and ecosystems operate.
- The players that can rapidly adopt and scale these innovations, rewiring their services and business models, can create and capture new sources of value and gain competitive advantage.

Capitalising on the Momentum and Delivering Rapid Impact

Medtronic, a leading medical technology manufacturer, has transformed itself into a solutions provider through its service arm, Integrated Health Solutions (IHS), working with hundreds of hospitals in Europe, the Middle East, and Africa. IHS blends technology, services, and insights into solutions that drive operational efficiency and augment the delivery of care to improve outcomes. Working with 300 providers in Europe on their transition to a 'new normal' post-Covid-19 gives Medtronic a good view of market dynamics and care model innovations that are getting rapid traction. Providers are experimenting with or implementing and scaling new care models using digital health modalities, with telemedicine, digital patient engagement, and remote patient monitoring (RPM) experiencing the fastest traction.

In this series, three use cases illustrate specific applications of those digital health modalities and the immediate benefits they create:

1. **University Hospital Mannheim** transformed its bariatric care pathway to remote in just four weeks during the pandemic and continues to use telehealth. Digital outpatients' visits

during the 6-month prehabilitation phase for patients undergoing bariatric surgery led to a hybrid digital/in-person care model that provides better value-based care, improved patient experience and convenience, higher workflow efficiencies, clinicians' engagement, and market/business reach.

2. Digital patient engagement and RPM solutions can optimise theatre time and expand day surgery cases, according to an article by **Professor Doug McWhinnie and Dr Ian Jackson from the IAAS**. Engaging patients in their care and monitoring them more efficiently reduces surgery cancellations and re-admissions, thereby helping hospitals tackle growing patient waitlists.
3. **Pain Relief Ireland**, a private pain clinic operating out of the Mater Private Hospital in Cork, uses a combination of digital patient engagement and RPM solutions to optimise and accelerate the perioperative care cycle, redefining the pain pathway. Patient engagement and RPM are used throughout the pathways, including the perioperative care for spinal cord stimulation implants, leading to highly effective results that reduce waiting times, administrative time, and the length of a patient's route to pain therapy.

Telehealth, digital patient engagement, and remote monitoring solutions can transform healthcare delivery, enabling patients to receive care in a more convenient and accessible manner. These solutions allow for more flexibility in how patients are informed, educated, onboarded, and serviced across the care pathway. As a result, patients can be more empowered and engaged, leading to improved communication with health care providers, timely interventions, and better outcomes and experiences.

Next-Generation, Tech-Enabled Care Models

Other innovative care models are emerging and showing their potential to unlock higher quality patient care at lower costs for health systems. We profile in this series two innovators that have deployed next-generation care models proven to deliver superior value, and that could be replicated and scaled across health systems:

1. The Hospitalisation at Home (HaH) use case features an innovative and award-winning digital hospital solution developed by Medtronic IHS and Servicio Madrileno de Salud (SERMAS), the regional health system in Madrid, Spain, and deployed at Infanta Leonor Hospital. It demonstrates how health systems and providers can use an HaH care model to deliver inpatient-level care at home with superior outcomes and cost performance, using digital and medical technologies to manage complex clinical models and patient conditions, and address changing patient circumstances in near real-time.

Many providers are starting to reshape traditional care models, leverage digital technologies, and deliver more ambulatory and home care

Providers should focus on investing in digital health technologies and ensuring they are accessible, interoperable, scalable and meet patient needs

2. The Diabeter case study illustrates how a provider can transform chronic disease management by deploying an innovative, tech-enabled care model that unlocks value by integrating digital and non-acute settings into a comprehensive, coordinated and cost-effective offering.

Both providers leverage and integrate a broad range of tech-enabled services, seamlessly blend digital and physical care, deliver care in the most cost-efficient and effective settings through real-time patient monitoring and intervention, use comprehensive data and advanced analytics to effectively personalise and target care, incorporate behavioural health to drive patient engagement, adherence and outcome, and bear risks through value-based care and population health arrangements.

Challenges to Overcome for Moving from Pilots to Scalable Transformation

Many providers are starting to reshape traditional care models, leverage digital technologies, and deliver more ambulatory and home care. However, several challenges must be addressed to scale early experiments, stitch them together across the care continuum, and realise the full potential of digital care.

Those challenges include the following:

- **Knowing where to start and charting the transformation roadmap is difficult** when the playing field is fluid and fast-evolving, with a proliferation of digital solutions and care model innovations; the basis for competition is changing faster than ever and all stages of the care pathway are ripe for disruption.
- **A broad set of capabilities is required** to effectively compete in the digital space. Costs, capital investment, access to talent, and speed-to-market considerations make it difficult for an organisation to develop alone and own the full range of those capabilities.
- **Interoperability is a significant issue** in highly fragmented healthcare with myriad point solutions, having no common data standards and structure, and often locking up data for technical or commercial reasons or concerns around privacy and data security. This makes accessing and sharing patient information difficult, hinders the establishment of seamless end-to-end patient journeys, and impacts clinicians' and patients' adoption.
- **Regulation is complex and in flux**. For example, privacy rules are spread across various acts, amendments, and directives, thus creating legal uncertainties and making it

difficult for healthcare actors to navigate and comply with regulations.

- **Evidenced value for digital and digital health solutions is often insufficient** as many tech-enabled services had been implemented hastily to guarantee access to care and with little or no effort to estimate return on digital investments.
- **Reimbursement is often lacking** for digital solutions or tech-enabled services. As a result, sustainable business models are often yet to be found, or when they exist, they are rarely transferable across health systems.

Keys to a Successful Digital Health Transformation

To overcome the above challenges and position themselves for success now and in the future, healthcare players need to take the following actions:

1. **Create a clear strategic path to enable digital end-to-end care journeys**. Given the breadth of opportunities for digital disruption along the care continuum, take a disciplined approach to identify the use cases with highest impact (e.g., to the outcome, cost, capacity, experience, revenue growth) and alignment with the health system's priorities; determine key assets and capabilities required; understand interdependency with other initiatives.
2. **Embrace an agile approach to execute quickly and continuously evolve to adapt to the changing competitive landscape**. Break down the transformation into bite-sized chunks that are rapidly implemented and deliver fast results; relentlessly prioritise use cases based on their potential to create value, capabilities, and change momentum; embrace an agile mindset by utilising quick prototyping, piloting, and scaling approaches; accelerate innovation by continuously scouting the market for best-practices.
3. **Strategically make "build vs. buy vs. partner" decisions to obtain and deploy the breadth of capabilities, solutions and services required to compete quickly and sustainably**. While carefully protecting distinct assets, take an open buy or partner stance to accelerate access to new capabilities and data, reduce risk and time to market, broaden the services offering across the care continuum and secure position in the ecosystem.
4. **Develop the capabilities to connect those multiple solutions and services into seamless patient journeys**. Leverage interoperability and data analytics platforms to connect disparate technology components and data sources and deliver integrated care and longitudinal patient experience.
5. **Minimise the number of solutions required, and thus complexity, by leveraging a versatile and scalable digital health platform**. Select a platform that can be adapted to various use cases and allow for different treatment protocols and care pathways to reduce the burden of integrating several solutions and enable fast deployment and scaling across the care continuum and the extension to meet future business needs.
6. **Demonstrate value for digital health and leverage it for value base contracting**. Measure the value of digital health and enabled care innovations by quantity, clinical outcomes, access and efficiency improvement, and patient/provider satisfaction; leverage those data to drive advocacy for coverage and value-based contracting

Conclusion

The window to act is now and providers have a unique opportunity to use the momentum for change created by Covid 19 to accelerate the digital transformation of care delivery. The ones able to lock-in advances made during the pandemic and fast/materially scale digital health and next-generation care models will create/gain competitive advantage. Providers should focus on investing in digital health technologies and ensuring they are accessible, interoperable, scalable and meet patient needs. However, simply recognising the need is not enough, and there are challenges to overcome, which is why there is value in partnering with a more extensive network to facilitate and accelerate a transformation journey. Through this collaboration, providers can quickly access the necessary tools and resources to successfully implement digital health care to deliver better patient outcomes and more efficient care delivery.

Frédéric Noël
Vice President of Integrated Health Solutions at Medtronic
Find out more about IHS here

Simply recognising the need is not enough, and there are challenges to overcome, which is why there is value in partnering with a more extensive network to facilitate and accelerate a transformation journey

Covid-19 and Remote Care in the Outpatient Department: A Case Study at Universitätsmedizin Mannheim

Dr. Mirko Otto, *Department of Surgery, Universitätsmedizin Mannheim*

The University Medical Centre Mannheim (UMM) faced a major challenge when the COVID-19 pandemic hit, leading to the postponement of all elective procedures in the bariatric surgery department. To minimise contact and control infection rates, the UMM bariatrics team need to establish a remote outpatient pathway quickly. The key to success was not just acquiring remote consultation IT tools, but also designing a structured, patient-centric pathway and a change management approach that engaged leadership and staff.

The UMM bariatrics team of surgeons, nurses, and receptionists had a vision for a remote-supported outpatient pathway but struggled with implementation

Introduction

The Universitätsmedizin Mannheim (UMM) is a leading university clinic in southern Germany, with over 4500 employees and 1350 beds. The bariatric surgery department is a certified reference centre of excellence, treating approximately 600 patients per year. Prior to the COVID-19 pandemic, roughly 250 patients were being treated per year and were required to undergo a multimodal evaluation of 6-12 months and have a minimum of four in-person pre-procedure consultations. However, due to the pandemic, all elective procedures were postponed, leading to a significant reduction in patient numbers.

The objectives of the remote care in the outpatient department were to establish a remote pre-surgical pathway in 4 weeks, starting with bariatrics, shifting as much care as possible to external and remote settings, creating a low/no-contact pathway using remote solutions, and creating a blueprint for rapid roll-out to all other surgical outpatient departments. The UMM bariatrics team of surgeons, nurses, and receptionists had a vision for a remote-supported outpatient pathway but struggled with implementation. With the support of the Medtronic Integrated Health Solutions (IHS) team, the new remote pathway was designed and operationalised in less than 4 weeks, with a structured approach to change and the identification of additional opportunities to shift care to external and remote settings. Ultimately, this allowed UMM to secure a patient pipeline post-COVID-19 using a low-contact, remote pathway to minimise contact and control infection rates while also providing timely access to care.

Approach and Key Findings

To overcome the COVID-19 challenges, the UMM bariatrics team of surgeons, nurses, and receptionists sought support in designing and operationalising a new remote pathway. Working with the IHS team, they developed a structured approach to change, which drove rapid implementation of the new remote pathway. The approach included:

- Re-designing the bariatric pre-surgical pathway based on clear patient journeys and needs, including systems, tools, and staff requirements.
- Defining patient routing and decision guidelines to enable all staff to operate at the top of their licence, freeing up capacity, and providing clear communication throughout the process.
- Providing professional project management with defined workstreams, actionable plans, clear deadlines, and leadership engagement to drive and accelerate the adoption of the new pathway.

The key findings of this approach were that providing remote consultations and shifting care out of the hospital was a key driver in freeing up capacity. The team also found that many organisations focus exclusively on the acquisition of remote consultation IT tools, which only comprises around 10% of the required change. The three essential pillars for success were identified as a structured, patient-centric pathway re-design, defined patient routing and decision guidelines, and a structured approach for change management.

The new remote pathway was fully operational in less than 4 weeks, resulting in improved efficiency, freed up capacity, and reduced face-to-face

consultations. The roll-out to other departments was also accelerated once the success of the bariatrics department was demonstrated. The impact on patients was improved infection risk and increased convenience through the elimination of waiting and travel times, as well as increased access through expanded capacity and remote consultation options.

Changes Delivered

The changes delivered in the remote care response at the UMM bariatrics department were the result of a structured approach to change and team co-operation. The bariatrics team had a vision for a remote-supported outpatient pathway but struggled to gain traction for implementation. The project team was able to design and operationalise a new remote pathway in less than 4 weeks. The changes delivered can be grouped into three key levers that drive success:

- Re-designed Remote Outpatient Pathway - The bariatric pre-surgical pathway was re-designed based on the clear patient journey and needs, including the systems, tools, and staff required. The team identified the teleconsultation and data transfer IT system that best fit UMM's specific needs and designed a blueprint for implementing remote outpatient pre-surgical and follow-up pathways.
- Defined Routing and Decision Guidelines - The patient routing along the new pathway was defined, and co-created tools and safeguards were put in place to enable all staff groups to operate at the top of their licence and free up capacity. Communication guidelines were set up for all process-steps with defined owners and responsibilities.
- Culture & Change Management to Guarantee Success - Professional project management was provided with defined workstreams, actionable plans, clear deadlines, and ownership. A state-of-the-art change management approach was applied to drive and accelerate adoption of the new pathway, including leadership engagement and measurement of engagement and change readiness of all team members involved. The team initiated continuous process improvement cycles to test and refine the new pathway.

The results of these changes were improved efficiency and freed up capacity, elimination of face-to-face bariatric consultations, reduced length of stay and facilitated discharge, increased referral numbers, and improved access to

The project team was able to design and operationalise a new remote pathway in less than 4 weeks

Three essential pillars were identified for success: re-designing the remote outpatient pathway, defining routing and decision guidelines, and a culture and change management approach to guarantee success

care through expanded capacity and remote consultation options. Importantly, these culture and change management elements facilitated sustainment of the changes in a post-COVID environment. Moreover, the success of the bariatrics implementation allowed for the rapid roll-out to other departments, such as colorectal and neuro. The remote pathway has become fully operational and has had a significant impact on the patients, with improved infection risk, increased convenience, and increased access to care.

Lessons Learned and Conclusions

The UMM faced a major challenge when the COVID-19 pandemic hit and all elective procedures in the bariatric surgery department had to be postponed. To minimise contact and control infection rates, UMM needed to establish a low-contact, remote pathway for their surgical patients. The objectives were to provide a remote pre-surgical pathway, shift as much care as possible to external and remote settings, and create a blueprint for rapid roll-out to all other surgical outpatient departments.

The bariatrics team at UMM, with support from IHS, successfully established a remote outpatient pathway in less than 4 weeks. Three essential pillars were identified for success: re-designing the remote outpatient pathway, defining routing and decision guidelines, and a culture and change management approach to guarantee success. The new pathway had a positive impact on both the operational efficiency of the hospital and the patients. Remote consultations reduced face-to-face appointments, improved infection control, and increased access to care.

The roll-out to other departments was accelerated once the implementation in bariatrics was successful. Finally, the UMM is also able to expand patient access. As it is possible to have consultations remotely and reduce the required number of hospital visits, UMM programmes can be expanded to patients living at a greater distance from the hospital. Other positive impacts for patients include greater convenience and reduced risk of infection. The resulting positive patient experience also contributes to greater reputational benefits, notably the growing visibility of UMM as a clinical leader.

In summary, the key to success was not just acquiring remote consultation IT tools, but also designing a structured, patient-centric pathway and a change management approach that engaged leadership and all staff involved. The new remote pathway provided convenience and improved access to care for patients, while freeing up capacity for the hospital. The results showed that telemedicine is the future of healthcare, and the combination of telemedicine and personal contact will guarantee the best possible therapy for patients. UMM has seen an increase in patient visits and surgeries, and a streamlined hospital working environment, demonstrating how remote care can be successfully implemented in the outpatient department.

In summary, the key to success was not just acquiring remote consultation IT tools, but also designing a structured, patient-centric pathway and a change management approach that engaged leadership and all staff involved

Why Digitally Enhanced Day Surgery Pathways Are Crucial in Supporting the Efficient Use of Theatres

Dr Ian Jackson, *Clinical Safety Officer, former President of the International Association for Ambulatory Surgery (IAAS)*

Professor Douglas McWhinnie, *The University of Buckingham, President of the International Association for Ambulatory Surgery (IAAS)*

The importance of efficiently using theatre time to reduce waiting list volumes and waiting times cannot be overstated. The use of day surgery is potentially a cost-effective solution to this challenge but managing patients across the surgical pathway from pre-assessment to follow up is essential to minimise cancellations and "Did Not Attend's" (DNAs), and to optimise outcomes. Technologies such as Remote Patient Management (RPM) can help engage patients and support them throughout the surgical process, improving efficiency, outcomes and reducing cancellations.

Surgical Waiting Lists and the Importance of Theatre Time

Waiting times are currently at levels not seen since the 1990s.[1] This is without even considering 'missing patients' who may not have presented due to the pandemic. The NHS recognises the need to reduce these wait times and use staff and facilities efficiently as part of this process. However, there is no quick or easy resolution for this issue. The use of existing and traditional inpatient pathways is limited by staff and bed restrictions and creating extra evening or weekend operating sessions may be costly and unaffordable. Clearing the backlog requires alternative strategies. Increasing the rates of day surgery and developing mechanisms to protect the day surgery pathway could be one of the biggest potential accelerators, while being an efficient and cost-effective solution.

A move to rapidly expand day surgery should be considered for as many patients and procedures as possible, thus removing bed capacity as a constraint to surgical activity to support an increase in throughput.[2] When hospitals make this move, the primary constraint becomes theatre time and staffing. Operating theatres are one of the most expensive resources in the NHS, with an average cost of £16-20 per minute.[3] Managing patients across the surgical pathway is vitally essential to minimise DNAs and day of cancellations to ensure that all planned theatre time is utilised.

Why Does the NHS Lose Planned Patients and So Waste Valuable Theatre Time?

Despite careful planning, the NHS loses considerable theatre time for various reasons. The simplest is the patient failing to arrive, i.e., DNA. The DNA rate varies hugely between hospitals and specialities but can be as high as 10-15%. It is well-recognised that effective preoperative assessment to remove patients' anxieties regarding their forthcoming surgery, and using regular reminders during the preparation phase, can make a significant difference.[3] As waiting times lengthen, one must consider ways to maintain contact with patients to ensure that when given a date for surgery, they are well prepared, supported to follow any prehabilitation advice given and any queries they have are answered.

Some patients who arrive for surgery are cancelled on the day due to a change in their health status. There is little that can be done for those cancelled due to an acute infection present on the day of surgery, but these are few. In contrast, patients who are cancelled due to a failure to manage their health comorbidities should not happen. These should be identified and managed following preoperative assessment. However, much of this management is susceptible to human error, which could be minimised by introducing digital systems to identify these individuals. A bonus is the ability to easily support the patient's active

Managing patients across the surgical pathway is vitally essential to minimise DNAs and day of cancellations to ensure that all planned theatre time is utilised

involvement in their planned care, including supporting the optimisation of any comorbidities through the provision of advice at the relevant time in their pathway.

Most of these clinical cancellations occur due to the failure to identify that patients are on medication that should be stopped or modified before surgery. This group includes patients with diabetes and those on antihypertensive drugs such as ACE inhibitors and Angiotensin II blockers, anticoagulants, antiplatelet drugs, and methotrexate.

How Can Technology, Such as RPM, Help?

RPM can be a transformative technology in the surgical pathway. Patients can be provided with the right information and advice at the right time in their pathway; and through an automated and standardised mechanism (Figure 1). Through this we can optimise the preparedness of the patient, both psychologically and physically, to ensure they are surgery-ready when the date of their procedure arrives – without requiring any additional time or resource from the clinical team to manually provide the information. We can also utilise RPM solutions to undertake a digital pre-assessment and monitor patient status both pre and post procedure, including while the patient is on the waiting list to identify any potential deterioration in symptoms. Through configuring alerts, we can flag any warning signs to the clinical team to enable intervention and ensure the surgical pathway can proceed as planned – or activate a backup protocol to reschedule for another case. In this way we mitigate the risk of any wasted theatre time.

Get Ready® is a fully GDPR compliant solution which enables the remote management and engagement of patients to keep them on their care pathways outside of the hospital setting. It is a solution which has flexibility across specialties and treatment pathways; and has potential application during the full patient pathway from the point of referral. Digital content including patient information, questionnaires with in-built alerts, tasks, reminders and measurements can be designed into a pathway and scheduled around key milestones such as procedures and consultations. This digital content and the resulting pathway including the embedded milestones can be localised and bespoke for a particular hospital, department and pathway. Get Ready® can therefore be used for a variety of scenarios including regular symptom monitoring of patients under follow up or on the waiting list; and during the preparation and recovery of patients undergoing a procedure – whether that be as an inpatient or a day case. RPM, such as Get Ready®, can be an enabler to increasing the rates of day case surgery undertaken, as we look for solutions to reduce the scale of elective waiting lists through optimising the throughput of procedures. Potential application to the day case pathway includes the following advantages:

1. **Digital baseline assessment**. Highlighting patients who may have comorbidities or be on medications which need to be changed or stopped prior to surgery.
2. **Patient information and advice to prepare for surgery**. While the patient is awaiting their procedure, they can receive information about their procedure, how to prepare and practical information on where to go which is specific to their pathway and hospital.
3. **Prompts and reminders ahead of the patient's procedure date**. Reminding the patient about key advice they should have followed, where to go and when, could mitigate DNAs and last-minute cancellations.

Get Ready® is a fully GDPR compliant solution which enables the remote management and engagement of patients to keep them on their care pathways outside of the hospital setting

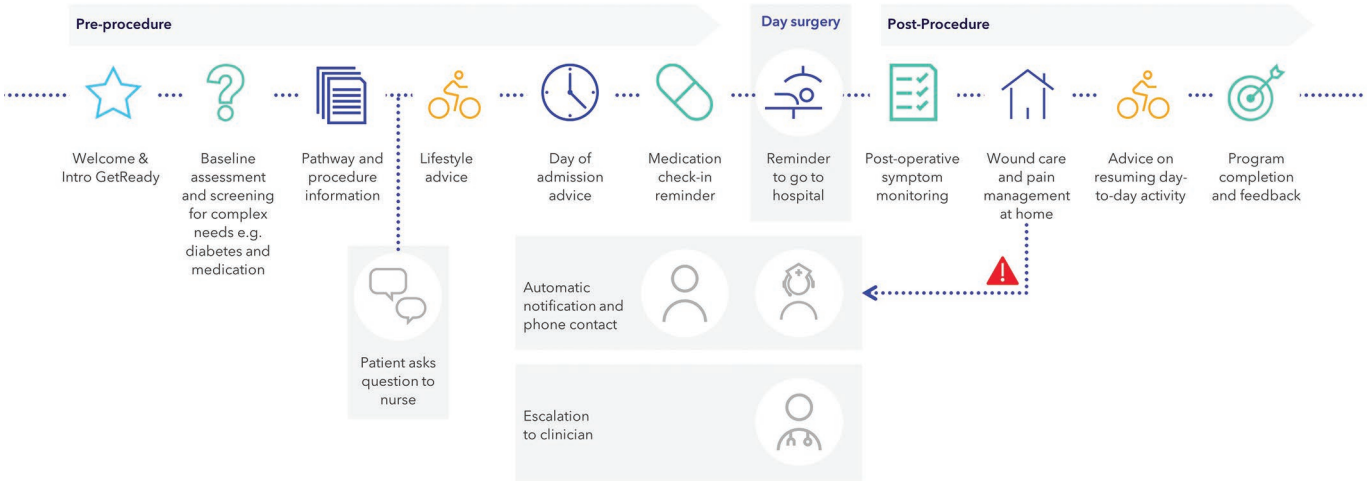

Figure 1: The day surgery pathway with support from Get Ready®, an RPM system from Medtronic.

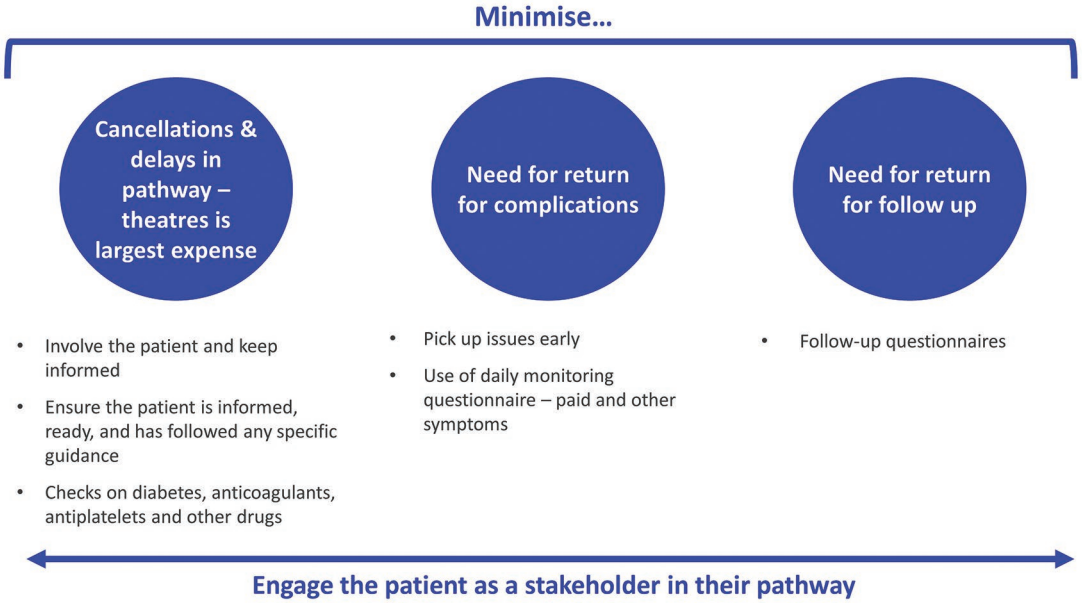

Figure 2: Advantages of using technology to engage the patient in their care.

Asking simple questions to check patients know the protocol around managing their comorbidities and medications before their procedure can also flag patients who may need additional support. Initiating this action several days before admission allows issues to be highlighted to the clinical team so they can be dealt with before the day of surgery and, in turn, avoid cancellations. As digital pathways are automated it also removes any need of the clinical team to issue prompts, reminders and advice manually and can also mitigate the volume of ad hoc queries received from patients. Furthermore, pathways can be configured at a local level to ensure that the content addresses key pain points and barriers to effective management of patients specific to the hospital, specialty and patient cohort.

With the support of RPM, such as Get Ready, the patient becomes a stakeholder in their care pathway. Maintaining this engagement can help reduce DNAs and cancellations, thus maximising the use of theatre time, as well as minimise the need for return due to complications and follow up (Diagram 2).

Continued patient support is crucial even after discharge from day surgery, as there are still ongoing needs that require attention. With the pressure on primary care, digital solutions can offer a practical approach. One such solution is routine automated questionnaires that monitor patient recovery and can track key symptoms and outcomes specific to the procedure undertaken.[4] The frequency of issuing the questionnaires and the configured alert thresholds can be locally defined by the clinical team to ensure complications are picked up early and can be dealt with remotely where possible.

The availability of information about how patients are recovering is essential for managing effective day surgery and has been shown to reduce patient self-referral to primary care.[5] There is also evidence that patients tracking their symptoms daily using an app report more across several symptoms and feel they recover better when compared to those using a paper questionnaire.[6]

Using technology, such as Get Ready®, to engage with patients and make them stakeholders in their care is essential to maximise the use of theatre resources. It can also offer valuable follow up information about patients' recovery at a time when staff are being encouraged not to review patients following surgery.

Conclusion

Efficiently using theatre time is essential to reduce surgical waiting times and expanding day surgery is a potential solution. Effective patient management is crucial to minimise cancellations and DNAs which can impact on theatre utilisation and lead to wasted resources. RPM is an efficient solution to engage patients throughout the surgical process, from pre-procedure to post procedure, reducing cancellations, optimising outcomes and providing a mechanism to support patients with more complex needs such as those with comorbidities or on medications. Digital solutions like routine questionnaires and provision of reminders can also offer continued patient support, especially after discharge from day surgery. Embracing such technology is necessary to engage and prepare patients and enhance the utilisation of clinical resources, while offering valuable follow up information about patients' recovery.

Through configuring alerts, we can flag any warning signs to the clinical team to enable intervention and ensure the surgical pathway can proceed as planned – or activate a backup protocol to reschedule for another case. In this way we mitigate the risk of any wasted theatre time

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The Role of Digital Pathway Optimisation in Clinical Management

Professor Dominic A. Hegarty. *Consultant in Pain Management & Neuromodulation, Mater Private Hospital, Cork. Clinical Director Mater Private Hospital, Cork, Ireland. President-Elect World Institute of Pain (WIP)*

The healthcare industry needs to consider new approaches to managing chronic pain patients, which should involve the use of technology to provide more efficient and standardised care. The use of digital platforms and data analytics will be key in developing new care models and tailoring solutions to improve outcomes, access to treatment, and efficiency. MedTech partners can provide the necessary innovation and expertise to deliver improved returns, but it will require engagement at the senior management level to focus on value-creation ideas that will meaningfully and measurably improve healthcare.

Introduction

Recent years have seen wide-ranging shifts in the healthcare landscape, including a growing disease burden, evolving health needs, rising consumer expectations, and an increasing emphasis on affordable and high-quality care, alongside an increased appetite for value-based models. These shifts have forced all stakeholders in the healthcare industry to consider how to become more interconnected.

Improved interconnectivity in healthcare delivery, regulation, and provider expectations will create opportunities and imperatives for incumbents and new entrants to create new approaches to delivering and financing care. Yet, while reinventing business models and building new sources of revenue is part of the industrial landscape, healthcare providers are traditionally slower to evolve.

Advancing the management of patients and their medical conditions has always proven challenging because the "one-size-fits" all solution does not exist in the clinical world. This is not a new challenge. It has never been more important for the healthcare industry to consider all the options, especially as it seeks to improve lives and livelihoods.

The New Need

Healthcare has shifted away from its post-World War II focus on contagious disease and workplace accidents, which necessitated episodic interventions. Today, the primary goal is preventing and effectively managing chronic conditions. However, productivity in healthcare is lagging behind other service industries as these goals shift. Management of chronic painful conditions is one area that has proven difficult to contain.

Chronic pain exerts a significant burden. A systematic review of UK studies reported a pooled chronic pain prevalence rate of 43·5%, with the rate of moderate-to-severe disabling pain ranging from 10·4% to 14·3%.[1] Conservative estimates suggest that in Europe, 150 million people experience pain that they would like medical help for, and 15 million report their pain as "severely distressing" and "too difficult to live with."[2] To put that in context, that represents the population of Germany and France combined.

This poses issues for the individual and their families, the healthcare systems, and society. This has meant that it falls way down the list of objectives on political agendas globally. Even if there were an open budget to address these complex issues, the sheer size of the numbers involved would make it a mammoth and probably impossible task. However, the European Union and Member States have supported the goal of tackling chronic pain and providing access to a minimum standard of care for all people with chronic pain. By treating chronic pain with the same seriousness afforded to other major conditions or diseases, the report argues that cost savings and better patient outcomes will be delivered for Europe through more efficient pain management.

A new vision needs to be considered to help address the growing numbers of individuals who are often considered too complex to treat. Clearly,

Today, the primary goal is preventing and effectively managing chronic conditions

Through digitising patient information and symptom gathering, the collection and measurement of outcomes after each procedure aids and improves the efficiency of future clinical decision-making and frees up clinical and administrative resources to carry out other tasks

the management of pain patients needs to adapt. It should not just be about adding more doctors, nurses, physiotherapists, or psychologists to the service. Instead, it should be about redefining the "traditional" management pathways by using technology to provide a more efficient and standardised structure to the issue.

The New Solution

The "ecosystem" of healthcare is a powerful force that can reshape and disrupt industry. New technologies promise available care nearby or at home, support continuous self and autonomous care, and reduce costs between supporting stakeholders. These shifts create an imperative for stakeholders to move toward an ecosystem-based model of care. Cardiology, diabetes, and renal disease are examples where the ecosystem's capability has become the "new norm." Pain management can be the next area to benefit from technology's ability to identify symptoms early, remote management, and timely, useful follow-up data while improving the experience for all healthcare stakeholders.

Organisations may need to consider different approaches to access the capabilities and expertise to succeed. For example, with Medtronic's support, we could access the Get Ready® platform and launch the beginning of the "new norm." As a pain centre that has used advanced technology (i.e., spinal cord stimulation) for many years, we were keen to redefine the pain pathway to optimise how we identified and treated individuals. Medtronic's guidance has involved pathway optimisation consulting and digital expertise, mapping of the current clinical pathway to identify opportunities for efficiency gains and improvement, leveraging digital as an enabler to this, and change management support, which has included face-to-face training and engaging the wider team to be involved in using the solution. Through digitising patient information and symptom gathering, the collection and measurement of outcomes after each procedure aids and improves the efficiency of future clinical decision-making and frees up clinical and administrative resources to carry out other tasks. This ultimately opens the possibility of growing the service further to deliver treatment to more patients.

What surprised us most was the hidden benefits. As a result of deploying the solution, patients quickly became key stakeholders in their treatment and were able to take a more active role in getting ready for their intervention and providing regular feedback on their progress. This patient empowerment and preparedness has allowed us to improve; for example, the Get Ready® platform is beginning to reduce clinic waiting times and administrative time and reduce the overall

length of a patient's route to pain therapy. The improvement in patient experience is evident. We are beginning to unlock the potential of the healthcare "ecosystem" to reshape the future.

What is Needed in 2023 and Beyond?

New technologies promise available care nearby or at home, support continuous self and autonomous care, and reduce costs between supporting stakeholders. These shifts create an imperative for stakeholders to move toward an ecosystem-based model of care. Longstanding industry inefficiencies lead to affordability, outcome and quality challenges, and poor consumer experience. However, these longstanding healthcare industry inefficiencies are not accepted anymore.

Innovation to deliver improved returns must be considered a requirement of any service in the future. The ability of technology and MedTech partners to provide this innovation and expertise is evident. The high rate of healthcare technology investment over the last decade is a testament to this. Between 2014 and 2018, there have been more than 580 healthcare technology deals in the United States, each more than $10 million, for more than $83 billion in value. They have been disproportionately focused on three main categories: patient engagement, data and analytics, and new care models.

Clinicians, by their nature, are a conservative group. The medical mantra of "first do no harm" has been engrained into the mindset. We need to encourage clinicians to come to terms with this evolution and to understand the full potential of the technology ecosystem now within our grasp.

Focusing on patient engagement data and analytics will allow the development of new care models. Using predictive indices and analytics are key assets to optimisation. Cost and quality are major battlegrounds, but data will provide the ability to tailor solutions. For example, the best outcomes from spinal cord stimulation are associated with good patient selection. Therefore, the sooner we can predict who will and won't benefit from the substantial investment, the sooner we will ensure those who need the treatment get it.

Finally, there is an appetite for considering how digital platforms can provide improvement in the healthcare space. This will need engagement at the senior management level to focus on value-creation ideas that meaningfully and measurably improve healthcare – including outcomes, access to treatment and efficiency.

All parties must be able to experiment, learn, and pivot with pace to ensure the best product and market fit that will unlock scaling. Organisations will not get it right at the outset but will develop over time. Finally, the best ecosystem will need time to evolve. Establishing dynamic performance management and measurement across time horizons, focusing on capability building, data, and milestones in the early days, and not overly indexing financial returns too soon will ensure sustainability.

Mandela was right when he said, "It always seems impossible until it is done."

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Establishing dynamic performance management and measurement across time horizons, focusing on capability building, data, and milestones in the early days, and not overly indexing financial returns too soon will ensure sustainability

Hospital@Home – An Integrated Care Solution for Hospitalised Patients at Home, Enabled by Digital Technologies

Dr. Carlos Bibiano Guillen. *Head of Emergency & Hospitalisation at Home Department, Infanta Leonor Hospital, Madrid. Associate Professor, Complutense University of Madrid, Spain*

HaH (Hospitalisation at Home) models are being developed in many countries as an alternative to conventional hospitalisation for patients with medical or surgical conditions. Medtronic's Hospital@Home solution has enabled Hospital Universitario Infanta Leonor of Madrid to provide value to both patients and professionals in a straightforward way by combining the three pillars of technology implementation in healthcare: personalised medicine, digital care process, and patient experience.

Hospitals will have to adapt to changes in the healthcare ecosystem and the future patient's expectations to achieve much more efficient and personalised care, moving to more appropriate locations, such as the patient's home

Introduction

Conventional hospitalisation is the most common admission model for patients with acute or exacerbated chronic conditions. However, there is increasing evidence that admission at home has numerous benefits from a clinical and patient experience point of view for elderly or frail patients.[1,2]

In many countries, Hospitalisation at Home (HaH) models are being developed as an alternative to conventional hospitalisation for patients with medical or surgical conditions. This allows patients to be admitted at home, receiving care and attention as if they were in hospital, but in a more comfortable and familiar environment, an influential factor in their recovery. Home care is a safe and effective alternative that can reduce costs, improve patient experience and health outcomes, and increase patient and family co-responsibility.[3,4]

Various studies have assessed patient satisfaction with home hospitalisation.[5,6] Overall, they found that patients who received medical care at home were very satisfied with their experience. Patients reported greater comfort and privacy, as well as greater involvement in the planning and control of their care. They also appreciated the greater flexibility and accessibility at home and the higher level of personalised care than with traditional hospitalisation. These results support the expansion of home hospitalisation as a viable and effective alternative to conventional hospitalisation or as a first choice for a given patient group.

The Digital Transformation of HaH

HaH has generated multiple benefits for a certain patient profile. However, what is the reason for its limited development, and can it be expanded exponentially? Or better yet, how can this modality of care benefit all patients in need?

Experts point out that one of the fundamental pillars of the hospital of the future will be the decentralisation of hospital care.[7] Hospitals will have to adapt to changes in the healthcare ecosystem and the future patient's expectations to achieve much more efficient and personalised care, moving to more appropriate locations, such as the patient's home.

Technology must be a fundamental tool to achieve these objectives. The digital transformation of HaH will allow the expansion of home care to all patients who need it safely, with excellent levels of quality and adapting care to "personalised medicine." This encompasses more than telemedicine, but rather integrating technology into medical work for a different way of doing medicine.

The HaH must be equipped with technology to monitor patients actively or passively. Through the functional evaluation of the data captured, it must be able to offer services that guarantee the continuity of the programme and make it possible

to attend to all patients who need it as efficiently as possible. The combination of technology and services is what has demonstrated that the projects are sustainable in the long term, scalable in the number of patients and pathologies, replicable in any other hospital, region or country, and resilient to different circumstances.

Hospital@Home: Disruptive Transformation

In January 2020, the HaH unit of the Hospital Universitario Infanta Leonor of Madrid (HUIL) began its digital transformation to increase the safety and complexity of patients, exploring different diseases or pathologies that until then had not had the possibility of benefiting from home care and finally taking advantage of the opportunities that technology offers us for health education or preventive medicine for our patients.

The patients seen in the HUIL's HaH need highly complex hospital care and would have to be admitted to hospital if they were not cared for at home. The most frequent pathologies are pneumonia, chronic lung disease, heart failure, skin or urinary infections, among others.

Medtronic's Hospital@Home solution was used to integrate technology into the development of the HaH model and create a "Hospital at Home" that would provide value to both the patient and the professional in a straightforward way. Medtronic's Hospital@Home solution can provide digital technologies and services that improve multidisciplinary patient care processes and ensure the correct adoption of the technological tools to be implemented, as well as the continuous maintenance of care processes. In addition, the Medtronic Support Centre assisted in programming care plans and creating patient materials integrated with the technology tools.

The Hospital@Home solution has enabled us to tailor the technology to each clinical process designed by healthcare professionals, both doctors and nurses (Figure 1). It can adapt to each patient's illness and individual characteristics so that we can customise the technology to the disease and not the other way around. Treating pneumonia is not the same as treating heart failure or cellulitis. Nor is it the same whether the patient is diabetic or hypertensive, old or young. The Hospital@Home solution we have used in our HaH has the flexibility to adapt.

The multidisciplinary team of professionals at the HaH assigns each patient a personalised care plan for their illness, which includes an assessment of the situation through questionnaires, monitoring of vital signs using sensors (such as a pulse oximeter, glucometer, blood pressure monitor, scales and thermometer) and health education with recommendations to improve short and medium-term health and ensure proper adherence to treatment.

This approach allows us to remotely monitor patients' health status several times a day. The patient receives notifications to complete the questionnaire, and the sensors record the indicated vital signs set by the healthcare staff. The vital signs and patient questionnaire responses are monitored using kits that include a tablet or app that the patient downloads to their mobile devices. These kits are designed to operate autonomously and have adequate connectivity to transmit data to the hospital without relying on the communications infrastructure available in the patient's home. This ensures real-time, remote monitoring, allowing healthcare professionals to intervene promptly in any situation that requires immediate attention.

The collected information is stored and organised on a platform, used to stratify patients according to decision algorithms previously established by healthcare professionals, and integrated into the technology platform by

Medtronic's Hospital@Home solution was used to integrate technology into the development of the HaH model and create a "Hospital at Home" that would provide value to both the patient and the professional in a straightforward way

Hospital Universitario Infanta Leonor (Madrid)

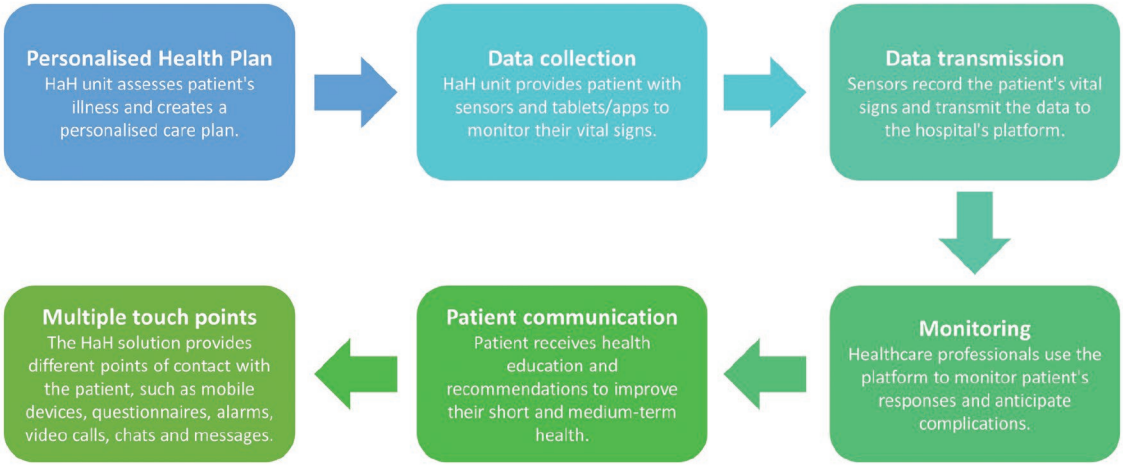

Figure 1: HaH Solution at Hospital Universitario Infanta Leonor of Madrid.

Home hospitalisation (HaH) has demonstrated numerous benefits for patients with acute or exacerbated chronic conditions, especially elderly or frail patients

Medtronic's Hospital@Home solution. As a result, healthcare professionals can monitor patients' responses from the hospital, allowing them to anticipate complications or positively reinforce those that are progressing well.

In addition, the solution offers different forms of relationship with the patient, such as mobile devices, questionnaires, alarms, video calls, chats, and messages, all integrated into a single solution.

The Future Includes a 'Hospital Without Walls'

From January 2020 to December 2021, the Hospital@Home solution was implemented as part of a European project called "Better@ Home", funded by the European Commission's European Institute of Innovation and Technology (EIT) Health. It was awarded multiple accolades for its transformative capacity. Due to the excellent initial results, the Infanta Leonor Hospital decided to include the solution in its Hospital Strategic Plan in April 2022 as part of its commitment to a future of a hospital without walls.

More than 1000 patients have benefitted from this solution, with significant clinical and management outcomes. More than 15 clinical programmes have been developed, resulting in a decrease of more than 30% in face-to-face medical visits without compromising the safety of home care (with a reduction in readmissions of more than 7%) and patient satisfaction levels of around 97%.

This project integrates the benefits of home hospitalisation with the Hospital@Home solution, allowing us to combine the three pillars on which the implementation of technology in the healthcare world should be based: personalised medicine, the digital care process with clinical value for the healthcare professional, and the patient experience as the central axis of the process.

Conclusion

Home hospitalisation (HaH) has demonstrated numerous benefits for patients with acute or exacerbated chronic conditions, especially elderly or frail patients. The decentralisation of hospital care, with the help of technology, allows for more efficient and personalised care, moving to more appropriate locations, such as the patient's home. Medtronic's Hospital@Home solution has been successfully implemented at the Hospital Universitario Infanta Leonor of Madrid, resulting in significant clinical and management outcomes, demonstrating the potential for HaH to provide safe, effective, and patient-centred care, paving the way for a future of a 'hospital without walls.'

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Tech-Enabled Next-Generation Care Model for Diabetes Management

Frédéric Noël, *Vice President of Integrated Health Solutions at Medtronic*

Diabeter is a diabetes specialist centre in the Netherlands that provides individualised care for thousands of patients using a holistic management solution focused on patient outcomes and cost reduction. Their unique model integrates physical and digital services to empower patients and their care teams through the intensive use of devices, data and digital connectivity.

The Diabeter Clinic Model

Diabeter is one of Europe's largest diabetes specialist centres that provide comprehensive and individualised care for children and adults with type 1 diabetes. It manages several thousand patients, with round-the-clock care and access to services, across its five clinics in the Netherlands. Additionally, Diabeter offers and integrates a complete continuum of physical and digital services creating a differentiated patient-centric experience. Uniquely tech-enabled, its model uses the power of devices, data, and digital connectivity to facilitate better self-management, strengthen interactions with care teams, and improve outcomes and quality of life for people with diabetes.

With its holistic diabetes management solution focused on patient outcomes and cost reduction, and delivering superior value for patients and health systems, Diabeter is an award-winning, internationally recognised example of a value-based healthcare delivery organisation that reflects Porter's value agenda and demonstrates best practices against each of the six tenets of value-based health care (VBHC).[1-4] For example:

- **Integration of care**. Clinics are each organised as integrated practice units (Figure 1).
- **Bundled payments**. Payment is via bundled payments for the full care cycle, mostly with value-based arrangements. As an illustration, in 2019, Diabeter closed a ground-breaking 10-year VBHC partnership

Diabeter is one of Europe's largest diabetes specialist centres that provide comprehensive and individualised care for children and adults with type 1 diabetes

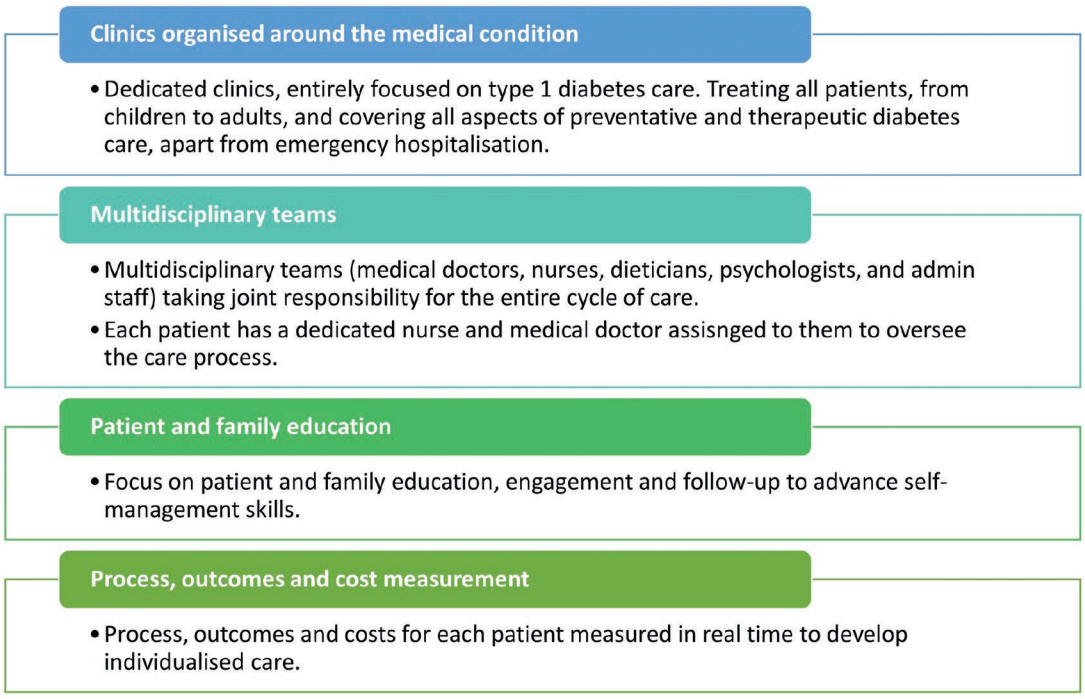


Figure 1: Diabeter and Integrated Practice Unit Principles.

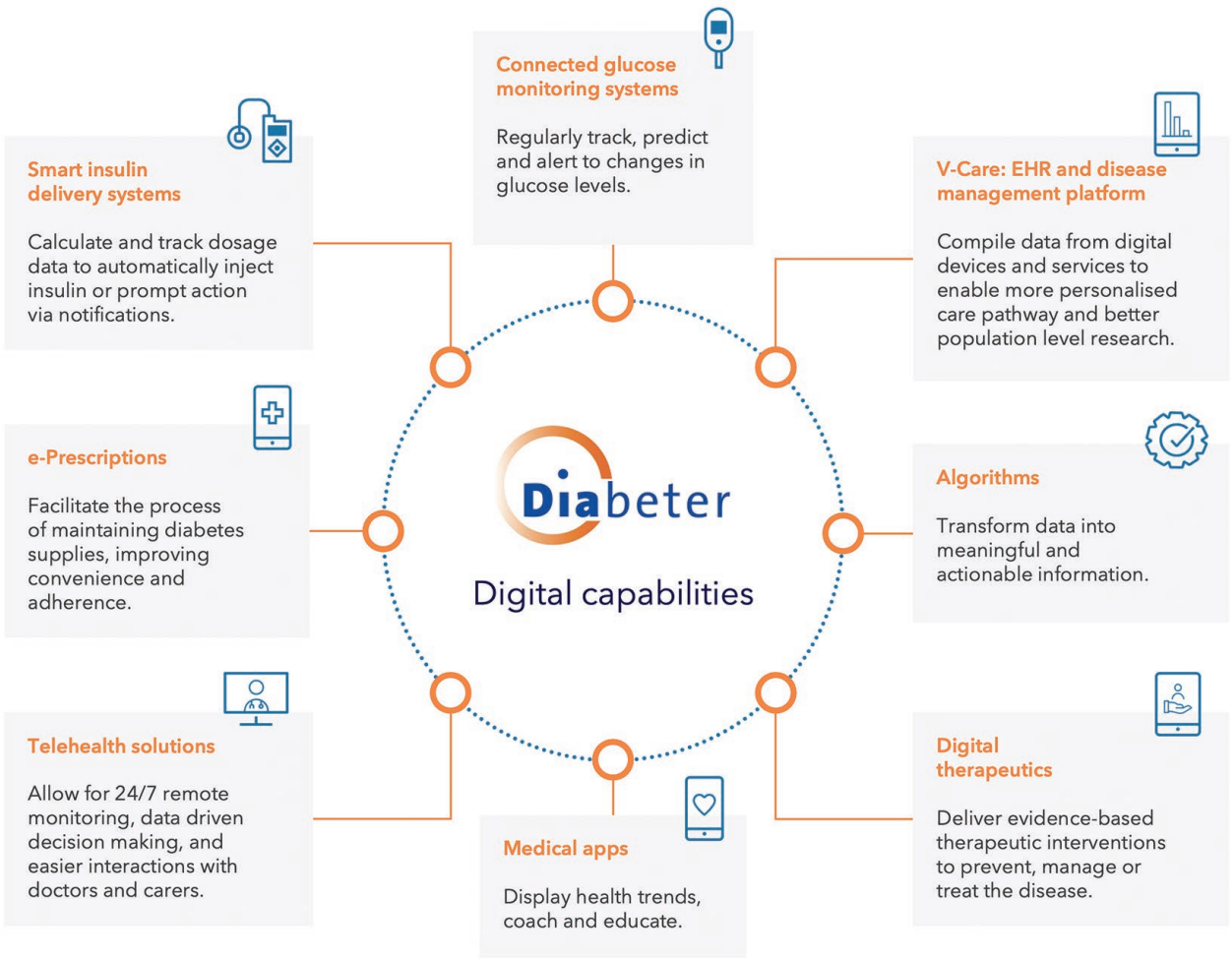


Figure 2: Diabeter's Technology and Digital Health Ecosystem.

with Zilveren Kruis, the largest insurance company in the Netherlands. This is the first value-based agreement worldwide that includes short- and long-term complications for type 1 diabetes. The partnership is based on a shared ambition of a complication-free life for type 1 patients now and in the future at a minimal cost.

- **Expanding services**. Diabeter is expanding its services outside the Netherlands with new clinics in Saudi Arabia and Spain.
- **Enabling technology**. Diabeter extensively uses an enabling information technology platform to deliver and continuously advance high-value care.

Diabeter's Technology and Digital Health Ecosystem

Diabeter leverages and integrates a broad set of technologies and digital health tools to reshape how diabetes care is delivered and empower patients and their care teams to better manage the condition through informed, data-driven decision-making. This scalable technology ecosystem is built upon Diabeter's proprietary "Cloud care" patient engagement and remote monitoring platform, and "V-Care" Electronic Health Record (EHR) and disease management platform (Figure 2)

Examples of how Diabeter leverages and integrates those technologies include:

- **Connected devices**. Continuous monitoring and real-time data collection and sharing are integral to the Diabeter model. Many of its patients use technologies such as continuous glucose monitoring devices, insulin pumps and closed-loop systems, enabling their vital signs to be tracked in real-time, glycaemic control to improve, and the burden of their disease to decrease. Diabeter achieves high uptake of these technologies, and usage adherence, through tailored training, education and treatment approaches, enabling optimal use and cost-effectiveness.
- **V-Care: EHR and disease management platform**. V-Care, Diabeter's EHR and disease management platform, automatically integrates that device data, as well as data collected at every touchpoint (e.g., in-clinic or virtual consultations, patient app interactions, lab testing, e-store ordering). Combining and overlaying traditional clinical data with real-time biometric and behavioural data enables Diabeter to generate new insights, augment

clinical decision-making, optimise workflows, and improve patients' empowerment. V-care emphasises the patient's plan for health rather than just the patient's medical record since the EHR not only records the patient's experience but also helps the clinician plan a course of action to empower the patient and improve health, leveraging a library of care plans and ability to personalise those through advanced algorithms and analytics.

- **Algorithms and analytics**. Aggregating, analysing, and putting V-Care's comprehensive data set through a robust analytics engine allows Diabeter to identify risk factors quickly, stratify its patient population and implement more targeted interventions and highly individualised treatment plans. Advanced analytics and predictive modelling are used to enhance all aspects of Diabeter's care, e.g., care coordination, resource planning and allocation, workforce engagement, patient empowerment, supply chain, and outcomes-based reimbursement (Figure 3).
- **Digital therapeutics**. Diabeter actively combines patient data and behavioural science to help patients adopt and sustain healthy behaviours, leveraging a patient app and applying digital therapeutics across multiple points of intervention along the patient journey. Those include, for example, monitoring (Figure 3), medication management through reminders and tracking adherence, personalised education, behavioural engagement and online counselling with a multidisciplinary care team, and real-time custom health recommendations.
- **Telehealth**. Diabeter fully leverages telehealth to provide an omnichannel care model that delivers large portions of care virtually. It offers 24/7 patient monitoring and on-demand virtual urgent care. It also blends in-clinic consultations with virtual visits, improving patient and caregiver experience, access, and continuity of care. This digitally enabled continuity of care is crucial in diabetes, a disease of surveillance, allowing most of the condition monitoring and care to happen outside of traditional clinical settings.
- **Connected community**. Diabeter supports and coordinates a "community platform" to allow Diabeter's patients and/or family members to interact. Those connections and experience sharing between people living with diabetes create a strong sense of support and show added value for disease self-management.
- **Diabstore / e-store**. To simplify the distribution of medical consumables and medicines, Diabeter developed the Diabstore, an independent but closely connected store that serves as a distribution channel for reimbursed items. Products are either picked up after a visit or ordered online by patients for home delivery. As V-Care is also used for the prescription of medical devices and consumables, all patient consumption data are linked to real use and outcomes as well as analysed to inform patient care and education needs.

Fuelling Research and Innovations in Diabetes Care

The above technology and digital assets, combined with an integrated care delivery

Diabeter leverages and integrates a broad set of technologies and digital health tools to reshape how diabetes care is delivered and empower patients and their care teams to better manage the condition through informed, data-driven decision-making

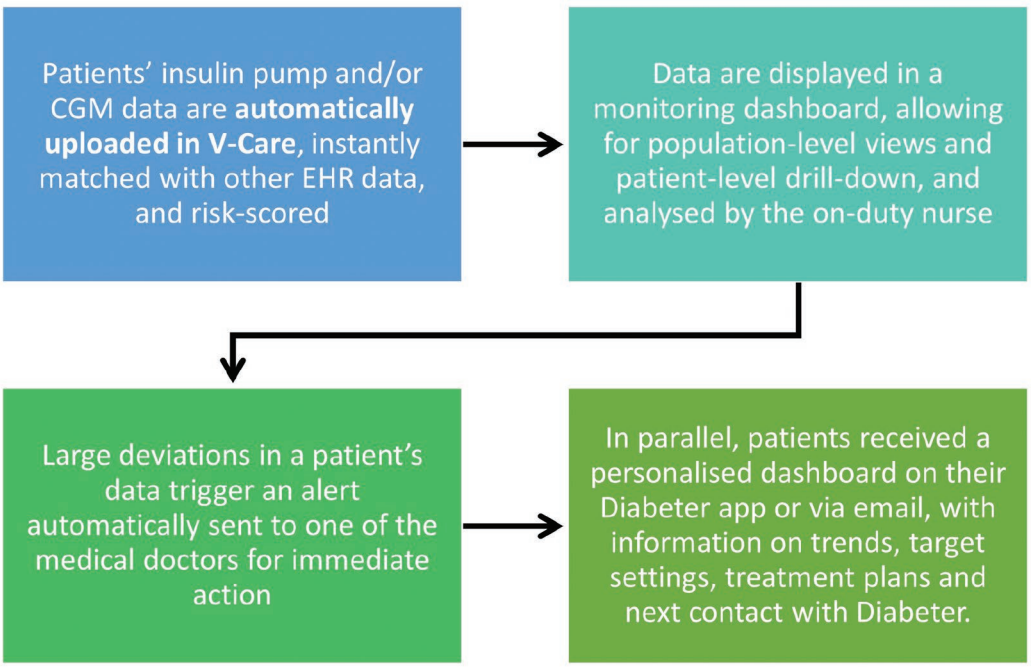
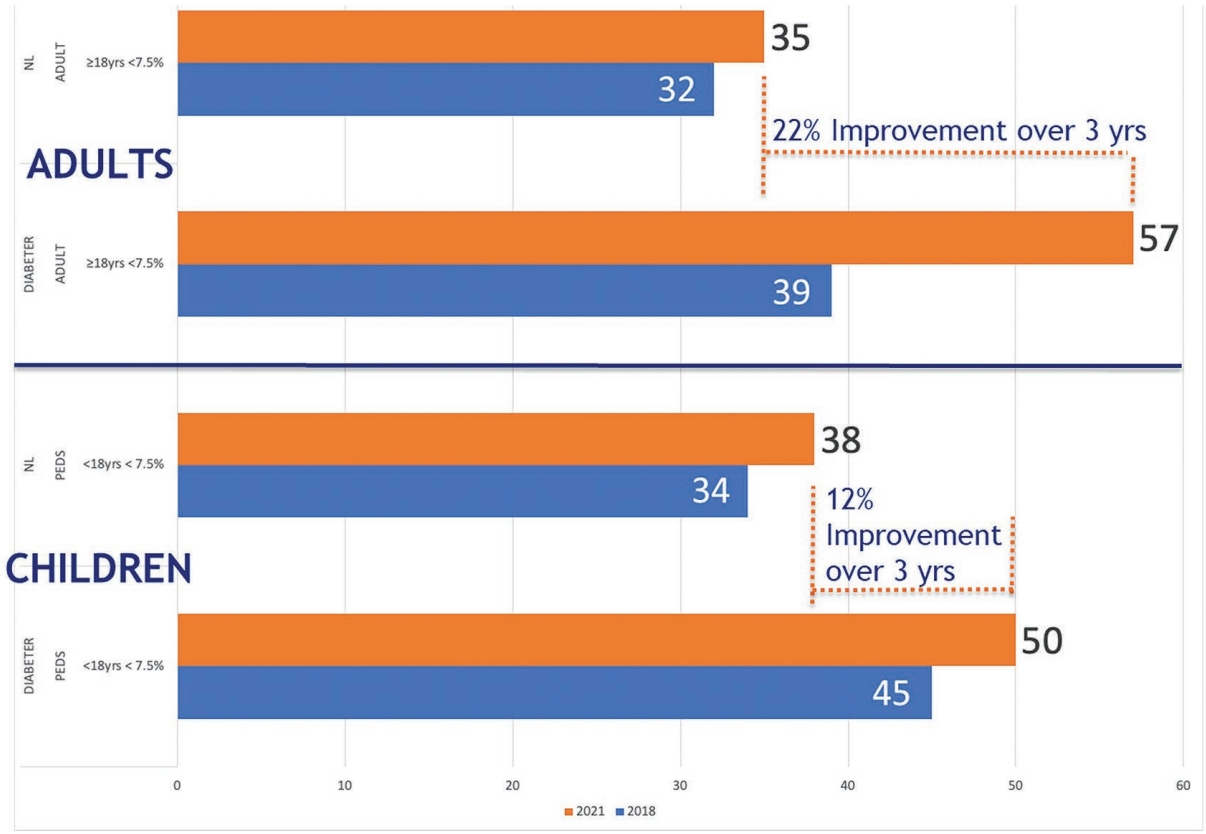


Figure 3: Analytics-powered continuous patient monitoring.



Comparison of outcomes between Diabeter and other Dutch clinics reporting to the National Vektis Institute.
: Percentage of patients reporting HbA1c below 7.5% / 58 mmol/mol in 2018 (blue) and 2021 (orange).

Diabeter supports and coordinates a "community platform" to allow Diabeter's patients and/or family members to interact

model, high patient volumes and a focus on collecting data at every touchpoint of the patient journey, enable Diabeter to build large, reliable, longitudinal and interconnected data sets.

Collecting and continuously assimilating vast amounts of health-relevant data from medical devices, patient apps, online and offline consultations and lab testing, and combining them with more structured data such as electronic health records and e-store and pharmacy purchases, provides high-quality multidimensional data and real-word evidence essential to advance disease understanding and therapy development.

Diabeter leverages those assets to feed its extensive scientific research programme as a Dutch national diabetes centre and an EU "Centre of Reference", with a research focus on technology developments, improved detection, prevention and treatment of diabetes and cures for the disease.

Delivering Superior Value for All Stakeholders

Diabeter stitches together all the above capabilities and care modalities to deliver and continuously advance an innovative, tech-enabled, clinically integrated, patient-centric diabetes management solution that delivers superior value for all stakeholders.

- Superior clinical outcomes for patients despite being an academic referral centre, thus attracting more complex cases. These exceptional results are validated by HbA1c levels data published by The Dutch National Health Care Institute, Zorginstituut Nederland, for Dutch diabetes clinics (Figure 4).
  - o 51% of Diabeter's paediatric patients have HbA1c levels below the 7.5% (58 mmol/mol) target, as defined by the International Society for Paediatric and Adolescent Diabetes (ISPAD), compared to only 38% of the Dutch paediatric population[a].
    - Only 9% of those patients have HbA1c levels that are higher than 85 mmol/mol, positioning Diabeter among the top clinics in the Netherlands.
  - o 57% of Diabeter's adult patients have HbA1c levels below the 7.5% (58 mmol/mol) target, compared to only 35% of the Dutch adult population.
    - Only 4% of those patients have HbA1c levels that are higher than 85 mmol/mol, positioning Diabeter among the top clinics in the Netherlands.
- Lower costs for the health system, resulting from those superior outcomes, as data published by this institute show that Diabeter patients have 3% hospitalisation rates versus an average of 8% in the Netherlands.

[a] Based on Diabeter 2021 dataset. VEKTIS/Zorginzicht public dataset

- Excellent patient experience, as demonstrated by a 9.5/10 patient satisfaction rating on the Dutch patient federation rating barometer, Zorgkaart Nederland and 90% of patients reporting improvements in their care with Diabeter. High employee satisfaction and a 30-50% higher staff efficiency, empowering Diabeter clinicians to remain concentrated on the full spectrum of patient needs and leading the group to consistently outpace the national averages for outcome data.

Conclusion

The Diabeter Clinic model represents a unique and comprehensive approach to diabetes management, integrating technology and data-driven decision-making to empower patients and caregivers and deliver superior value for all stakeholders. With its scalable and patient-centric ecosystem, Diabeter achieves high clinical outcomes, lower healthcare costs, and excellent patient and employee satisfaction. Moreover, the model demonstrates best practices against each of the six tenets of value-based healthcare delivery, reflecting Porter's value agenda. With its expanding international presence and emphasis on continuous innovation, the Diabeter Clinic model represents a promising solution for addressing the growing prevalence and complexity of diabetes management worldwide.

Diabeter achieves high clinical outcomes, lower healthcare costs, and excellent patient and employee satisfaction

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