Putting Patients First

Transforming Singapore's Healthcare System

By harnessing technologies that put patients at the heart of services, Singapore's healthcare providers can increase efficiencies and deliver better care.

Singapore's healthcare sector has reached an inflection point. Since 2006, the country's population has grown by 25 per cent[1] and it is estimated that by 2030, one in five Singaporeans will be aged over 65.[2] These changing demographics are set to lead to a significant increase in the demand for healthcare services, as people live longer while potentially managing an array of chronic conditions. What's more, healthcare organisations are under pressure to deliver this growing volume of services while reducing costs and relying on the resources already at their disposal – all without sacrificing quality.

This is not the only challenge the sector faces. Technology is transforming the way that services are delivered, giving rise to consumer experiences that are increasingly personalised, convenient and on-demand. As their affluence levels rise, Singaporeans' expectations about the way they should receive services in every area – including healthcare – have never been greater.

Despite healthcare providers working hard to improve operational efficiency and the quality of their services, their efforts often focus solely on the institution. They seldom consider the need to also address the broader patient experience, which means that for many, healthcare delivery models are not able to satisfy fast-evolving consumer and industry expectations.

It's time for a new strategy that maximises value for patients and providers alike.

Executing such a strategy involves transforming healthcare organisations so that the patient experience is at the heart of all offerings. It involves establishing a methodology and a platform that ensure a patient-centric approach is embedded organisation-wide – across cultures and structures, workforces and supply chains, processes and timelines.

To enable success, we discuss three vital factors healthcare providers need to consider:

1. **How to define a patient-centric approach;**
2. **How new technologies can bring this approach to life; and**
3. **How analytics can help deliver real change.**

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3 practices healthcare providers can adopt to better engage the patient:

Be patient-centric
'Always on' healthcare consumers seek seamless, personalised care experiences. Use everything you know about their needs to ensure a patient-centric approach.

Embed smart solutions
Incorporating advanced technologies into workflows makes it much easier to build patient-centric offerings.

Get more from your data
Applying analytics tools on your data can help you gain insights on how to improve operational efficiency and patient experience.

Design care experiences from the patient's perspective

A useful way to start defining patient-centric care experiences is for healthcare institutions to identify the common pain points patients face at the different 'touchpoints' or service stations that they encounter whenever they visit a healthcare institution. One good way of gathering this information is via patient feedback channels. Feedback can then be reviewed and improvements considered to address patients' concerns.

Embedded in this approach is the idea that care should be personalised, involving each patient as a participant in their own care.

Personalisation requires healthcare institutions to "know their patients" better. Institutions may need to start maintaining more detailed profiles that include information about every interaction they have with patients, thus building up a picture of the relationship as a whole. This will help providers anticipate patients' needs throughout their care journey – from the very first contact with doctors to the point of discharge from the hospital and the management of chronic conditions in patients' homes.

The design of a holistic patient experience must also consider the wider wellbeing of the patient and whether their expectations are met during and after treatment. For example, people often view visits to healthcare institutions in a negative light, anticipating long waiting times and a lack of clarity about what might be going to happen. Ensuring patients have an easy-to-understand itinerary for their healthcare visit, giving clear details of where they will need to be and when, goes a long way to addressing anxieties and lessening any "fear of the unknown".

The National Heart Centre Singapore (NHCS), a member of the SingHealth group, offers an example of patient-centric approach in action. **'1 Queue 1 Bill'** is an initiative conceived by SingHealth, in which NCS had worked together with Integrated Health Information Systems (IHiS) to implement the solution. The **'1 Queue 1 Bill'** initiative simplifies the outpatient journey by providing NHCS' patients with a clear visit itinerary and a single queue number to be used throughout the visit. By eliminating the need to register at different service stations at NHCS, the solution reduces waiting time and delivers a better patient experience.

Enable a patient-centric approach through technology

As patients transition from being passive healthcare recipients to being active, value-seeking, digitally savvy consumers, the healthcare sector will need to incorporate digital tools and technologies into their workflows. Advanced technology makes holistic patient-centric delivery models more feasible; organisations that invest in it can deliver high-quality experiences anytime and anywhere a patient can access a digital service or platform – within a healthcare institution or on-the-go.

Asia-Pacific's high rates of smartphone penetration[3] make mobile an obvious platform for enabling a more seamless patient experience. For example, home monitoring and tracking applications used with strategically placed sensors can reduce the need for hospitalisation by continuously measuring patients' health, sending data to care providers.

Videoconferencing is another tool available via smartphone, allowing patients to interact with medical personnel without needing to set foot in a hospital or clinic. As a result, patients gain more control over their healthcare and an increased ability to manage their expectations.

"Advanced technology makes holistic patient-centric delivery more feasible."

Technologies also underpin sophisticated integrated health ecosystems, which facilitate collaborative, multidisciplinary and cross-organisational healthcare processes. NCS is the IT partner to SingHealth for one such outpatient administration and management system. Based on a platform that enables communication among healthcare professionals, it increases efficiency and convenience for patients as they register, make appointments and pay.

# Harness analytics to gain valuable insights and improve outcomes

As the use of advanced technologies becomes more widespread, healthcare institutions are generating massive amounts of raw data from multiple IT sources – anything from smart devices and monitors to instruments and equipment.

Due to its sheer volume and diversity, this data often goes unanalysed. However, by using data analytics to find patterns, providers can more quickly understand the factors affecting their operations and patient populations, thus deriving valuable insights

which can help them address problem areas and improve outcomes.

For example, analytics can be used to gauge patient demand. Patterns in patient flows to clinics can be identified and forecasted so healthcare institutions can better schedule their resources and ensure adequate staffing during peak periods. At the same time, analytics tools can be used in real time to integrate and translate datasets from remote monitoring, allowing providers to anticipate the need for interventions and revise care plans accordingly.

Advanced analytics and artificial intelligence can also take over routine tasks. This frees up valuable institutional resources and increases the productivity of a provider's workforce without the need to hire more staff.
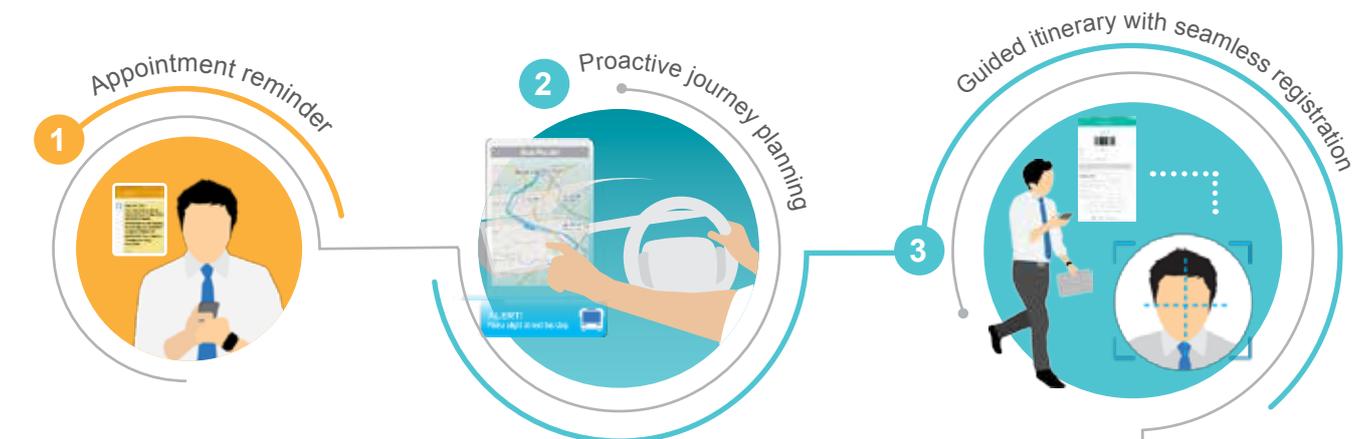
A holistic outpatient experience in action

1. Healthcare app **reminds John of his appointment prior to his visit.**
2. On the day of the visit, the app **suggests optimal public transport options,** based on real-time traffic conditions.

3. As he enters the healthcare institution premises, the app **displays a visit itinerary, directs him to the appointed lab** where he registers via **facial recognition**.
4. After completing his blood test, the app **directs him to the clinic for a consultation with the doctor.**

5. The app **displays the estimated time** at which his prescription will be **ready for collection at the pharmacy.**
6. John **pays his bill, gives feedback on his experience and books his next appointment - all via the app.**

Fit for the FUTURE

In NCS' view, ensuring that the patient experience is at the heart of all offerings is the key to success in a rapidly changing healthcare sector. The winners in this new era will be those institutions that grasp how technology can help them achieve this, along with improving their operational excellence through increased efficiency and productivity and reducing costs.

Will **yours** be one of them?

ncs
making IT happen

For the past three decades, NCS has worked closely with healthcare providers in Singapore to evolve and enhance their service offerings and operational efficiency. With experience in contributing to the modernisation of Singapore's healthcare sector, NCS is ideally placed to understand healthcare organisations' needs and address their challenges. NCS' goal is to continue to bring together the best of technology, data and experience design to deliver patient-centric, values-based healthcare offerings in Singapore.

NCS is a member of the Singtel Group and the leading information, communications and technology (ICT) service provider, with a presence in over 20 countries. NCS delivers end-to-end ICT solutions to help governments and enterprises realise business value through digital transformation and the innovative use of technology. Its unique delivery capabilities include consulting, applications development, systems integration, outsourcing, infrastructure management and portal solutions. It also provides mobility, social networking, business analytics and cloud computing services.

*For more information, email us at **reachus@ncs.com.sg** or visit **www.ncs.com.sg/healthcare.***

[1] Ministry of Health (2012), *Committee of Supply Speech,* https://www.moh.gov.sg/content/moh_web/home/pressRoom/speeches_d/2012/moh_2012_committeeofsupplyspeechhealthcare2020improvingaccessibi.html.

[2] NCS (2016)*, Technology Extends Care Beyond Hospital Walls,* www.ncs.com.sg/thought-leadership?p_p_id=thghtldspportlet_WAR_corpwebportalportlet&p_p_lifecycle=1&p_p_state=normal&p_p_mode=view&p_p_col_id=column-1&p_p_col_count=1&_thghtldspportlet_WAR_corpwebportalportlet_thghtLdspArticleId=1502&_thghtldspportlet_WAR_corpwebportalportlet_javax.portlet.action=viewDetail

[3] Emarketer (2015), 'Asia-Pacific Boasts More Than 1 Billion Smartphone Users,' *https://www.emarketer.com/Article/Asia-Pacific-Boasts-More-Than-1-Billion-Smartphone-Users/1012984*