THE LITTLE HOSPITAL THAT COULD

THE TRANSFORMATION STORY OF ALEXANDRA HOSPITAL
The Little Hospital That Could
The Transformation Story of Alexandra Hospital
This book is dedicated to all the people who helped us transform from a small hospital to a regional healthcare system in the north of Singapore.

*Touching Lives, Pioneering Care, Making a Difference.*
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A GLORIOUS PAST
AND AN UNCERTAIN FUTURE

Chapter 1
Veranda wards provided plenty of fresh air for patients but also gave birds easy access to patients' meals.
Alexandra Hospital opened in 1938 as the British Military Hospital. Situated on a sprawling 12ha of land, it was the biggest and best of its kind in the Far East and served as the main healthcare facility in Southeast Asia for the British Army. Though it was initially built to have 356 beds, at its peak, the hospital catered to 900 patients. With the end of British colonial rule in Malaya after World War II and the independence of Singapore in 1965, the British military departed in 1971.

For a token $1 note mounted in a frame, British representatives handed the hospital over to the Singapore Government. It was converted from a military institution to a civilian hospital, officially renamed, and opened to the public on 15 September 1971.

Alexandra Hospital then was the model of a modern hospital, with well-maintained premises and comprehensive medical services—specialties included Accident & Emergency (A&E), Dental, Diagnostic Radiology, General Medicine, General Surgery, Geriatric Medicine, Obstetrics & Gynaecology (O&G), Orthopaedics, and Paediatrics. It handled 15% of all of Singapore’s hospital admissions, serving as a healthcare landmark for the Queenstown area.

Just a few years into its operations, Alexandra Hospital made the news on 12 April 1975. Wong Yoke Lin, then just 17 years old, was involved in a freak accident at her workplace—her glove and hand were caught in the machinery she was operating, which tore her arm off at the elbow. She was quickly transported to Alexandra Hospital, where four surgeons successfully reattached her severed arm in a five-hour long operation, marking Singapore’s first-ever limb reattachment.
Alexandra Hospital served as the general hospital for the western part of Singapore. This made it the nearest hospital for victims of an oil tanker explosion at Jurong Shipyard on 12 October 1978. Fifty-five severely burned casualties were rushed to Alexandra Hospital for resuscitation, and subsequently transported to the specialty burn unit at Singapore General Hospital. It became known as the Spyros disaster, after the oil tanker which exploded and claimed 76 lives.

One of the early clinical achievements of Alexandra Hospital was its diabetes specialty. At that time when the awareness of diabetes in Singapore was still low, Alexandra Hospital pioneered cutting edge practices, providing specialised treatment and more importantly, educating patients in the management of diabetes. Under the leadership of Dr Frederick Tan Bock Yam, diabetes soon developed as a subspecialty of General Medicine in the hospital. He was succeeded by Professor William Chew, who propagated diabetes research and pioneered work on insulin resistance in Singapore. He also focused on the education of doctors and thereby led the diabetes team to new heights.

In the mid-1980s, the Ministry of Health (MOH) began restructuring Singapore’s public healthcare system. It aimed to make government hospitals more efficient by granting them more autonomy and flexibility, subject to broad policy guidelines. Commercial accounting systems were introduced to increase the accuracy of operating costs and instill greater financial discipline and accountability. Funding of hospitals was based on their output rather than their submitted budgets. One by one, hospitals were reorganised, rebuilt, and moved to their new buildings.

Much like a machine being salvaged for parts, Alexandra Hospital’s specialties were transferred to hospitals that could make better use of the resources.
Many of Alexandra Hospital’s best doctors were also seconded to lead the new hospitals and national centres. In April 1990, the Obstetrics and Gynaecology Department, at that time one of the best in Singapore, was closed and transferred to Kandang Kerbau Hospital (KKH). Six years later, the Paediatric Department was also closed and transferred to KKH. Furthermore, Alexandra Hospital was also at a disadvantage due to its location. Patients were drawn to the two major hospitals that flanked Alexandra Hospital— to the east, Singapore General Hospital (SGH) which was redeveloped in 1980 and to the west, the National University Hospital, newly built in 1985. The management of the hospital was assigned to the National University of Singapore (NUS) in 1995, which made it the Alexandra campus of the NUS Medical School. However, the hospital’s decline continued.

A survey in 1999 showed that 39% of patients would not recommend it to their family members, relatives, or friends despite its fees being the lowest. Patient satisfaction was at an all-time low of 69% and some members of the public did not even know where the hospital was! By 2000, the hospital’s market share had dropped to less than one third of what it had been in 1980.

Alexandra Hospital was one of the last public hospitals to be restructured. By then, it had developed a terrible reputation as a one-star hospital for the old and the poor. This poor public perception was justified due to the rundown facilities, rudimentary equipment, and limited range of services available. The hospital was also dependent on other hospitals for help in specialties.

Due to its low hospital occupancy rate, it had the highest manpower cost per patient among all the government hospitals. Yet, at a time when rising medical costs were a concern for many Singaporeans, closing the hospital
and transferring the patients to other hospitals was not a politically acceptable option.

Eventually, it was decided that Alexandra Hospital would officially be restructured on 1 October 2000 and come under the National Healthcare Group (NHG). It was against such a backdrop that the Alexandra Hospital Transformation Story unfolded.
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CHAPTER 2

GETTING THE RIGHT PEOPLE ON THE BUS
The hospital building was run down and improving the infrastructure became a priority.
One of the most immediate challenges that Alexandra Hospital faced in its early days of transformation was manpower issues. While the initial problem was that of over-staffing due to the low patient load, the hospital now saw an exodus of staff. The new challenge was not only to bring new people onboard, but also to ensure that these were the right people, people who were willing to take on the heavy responsibility of overcoming the tough times. As part of the slow road to recovery and restructuring, a new Chief Executive Officer (CEO), Mr Liak Teng Lit, was appointed to helm the leadership.

**Manpower Challenges at the Start of Restructuring**

The hospital was bleeding financially at $2 million a month. To convey a sense of urgency and magnitude of the situation, Mr Liak illustrated it as the equivalent of burning a bungalow every month. Theoretically, the hospital could have run out of funds in less than three years.

Many of the staff were older civil servants who had either been working in the hospital for a long time, or transferred over from hospitals that had been restructured earlier because they were afraid to sign on with the newer corporatised hospitals. In this way, Alexandra Hospital had accumulated many staff who preferred the stable civil service environment for its job security and medical benefits, and were resistant to change.
Mr Liak recalled that he felt as if he were “flying a plane with a torn fuselage and engine failure” and that it “warranted an immediate landing but the only option was to keep it flying”. To illustrate his point, Mr Liak put up a cartoon of a crashing plane with a man trying to catch his hat around the hospital. He said that when people only focus on their immediate areas of interest, they miss the bigger, more urgent problem at hand, to the detriment of the organisation and ultimately themselves. Using the story of “Who Moved My Cheese?”, an allegory about how people deal with change, the staff were urged to move with the times or risk being left behind.

Forty percent of the staff left, including the entire nursing administration. Some were near retirement age and took the chance to receive a lump sum payment based on their length of service—one month's worth of their last drawn salary for every year of service. Others were apprehensive about the future of the hospital and left to work in the other restructured hospitals which had already begun to establish themselves.

Mr Liak was aware that he was also one of the reasons why staff left or joined. While he was away on an overseas conference, three poison pen letters were sent to the Ministry of Health as a result of the gulf between the new management team and those incumbent. Mr Liak was a pharmacist and this was the first time that the Ministry had appointed a non-doctor as a CEO. In addition, it was the first time that they had given the role of CEO more power than that of the Chairman, Medical Board (CMB). Mr Liak was unafraid to speak his mind, even if he had to confront doctors, and this reputation preceded him. The then Minister for Health, Mr Lim Hng Kiang, gave his unwavering support to Mr Liak. This public show of trust built confidence in the new management team and averted a breakdown of discipline.
“When people only focus on their immediate areas of interest, they miss the bigger, more urgent problem at hand, to the detriment of the organisation and ultimately themselves.”
“People always imagine it to be a lot worse than what it actually turns out to be, but those emotions are understandable. Moving faster is better than pondering. Once the pattern is clear, what one needs to do is to give direction and move full speed ahead even though people are screaming to slow down. Speed is very important, the faster the better. Results generate positive energy and excitement.”
Looking back, Mr Liak admitted that he could have been a little gentler in communication. However, he was doubtful that Alexandra Hospital would have been able to achieve its rapid transformation without such tumultuous change, “People always imagine it to be a lot worse than what it actually turns out to be, but those emotions are understandable. Moving faster is better than pondering. Once the pattern is clear, what one needs to do is to give direction and move full speed ahead even though people are screaming to slow down. Speed is very important, the faster the better. Results generate positive energy and excitement.”

Many staff who did stay on, especially the junior staff, were inspired by the fact that the new CEO and senior management had begun to engage them directly and transparently for their input in improving the hospital. The senior management were not afraid to make and take responsibility for decisions. They paid attention, engaged the staff and ensured that supervisors were well-respected on the ground.

**A New Leadership Team with Diverse Background**

Getting the right people to join the management team was also a challenge. The hardware of the hospital would only be as good as the people who operated it for the good of the patients. Hence it was imperative that people with the right attitude were hired, and then trained with the necessary skills.
Mrs Chew Kwee Tiang was Mr Liak’s colleague in the pharmacy of a previous hospital before she joined him as the Chief Operating Officer (COO) of Alexandra Hospital. Staff who worked with both of them were quick to point out their differences in mannerism and management style (one described this as “the difference between chalk and cheese”), yet noted their complementary strengths. While Mr Liak would incite people into action, Mrs Chew would adopt a more patient and nurturing approach. She was instrumental in introducing a significant number of staff to the hospital, simply because they enjoyed working with her. Yet, beneath her personable exterior was a systematic thinker. She grounded Mr Liak’s vision, making it achievable by focusing on the immediate options and processes available.

Professor C. Rajasoorya, who had been working in the Department of General Medicine in Alexandra Hospital since 1986, was appointed the CMB. He related, “I had zero experience with administration. It was like being told to do something of which I hadn’t the slightest inkling or idea to. I felt a sense of déjà vu because as I used to tell my first posting house-officers, ‘You are thrown out to sea, and if you swim ashore, you have made it.’”

For the nursing team, Ms Low Beng Hoi, originally from NUH, was the first to join. She was quickly overwhelmed and had reached a point where she was going to leave if she had no help. Fortunately, Mdm Chua Gek Choo joined just in time. They worked more than two shifts every day, and Mdm Chua would lament that no one wanted to join them. As many of the older nurses had left, a lot of younger nurses were promoted overnight. They did not have much experience, but shared the vision of the new management and were willing to learn and try new things.
Heads of Department were drawn both from within the organisation and from other institutions. They were selected based on their attitudes and experience in their areas of expertise.

The new management team came from diverse backgrounds, education, and personalities. Mr Liak went by the philosophy that “If two of us think alike, one of us is redundant”. Few had any management and leadership training prior to their appointment, but most importantly they were all not afraid to speak their mind when they did not agree with decisions being made. When evaluating an applicant, it was important that they had a sense of self-awareness with the right values, passion and mission, and that they constantly strove towards achievement and continuous improvement of self. This diversity lent different perspectives to the numerous challenges that the hospital faced, yet aligned them in their goal to build a new culture that was ready for change.

**Beating Manchester United in Table Tennis**

Alexandra Hospital was late to the table, and all the other restructured hospitals had already established themselves in selected niche areas. For example, KKH specialised in women and children and NUH in teaching. Following their models was not a viable option.

Alexandra Hospital had to differentiate itself by choosing specialties that had not already been claimed by the other hospitals. So Mr Liak came up with a strategy, “The secret to beating Manchester United is not to play soccer with them, but
to challenge them to a game of table tennis.” Hence, while other hospitals focused on providing increasingly advanced and specialised services, Alexandra Hospital decided to go back to the basics, focusing not on specialty areas but on ambulatory services and outpatient care. With limited resources, it decided to first build on its existing strengths in Diabetes and Geriatric care, setting out a vision to provide healthcare that was better, faster, cheaper and safer.

Looking at an expanded view of healthcare throughout a person’s life, the team saw that there were crucial periods when they would need the services of the hospital. These could be classified into acute care, disease management and anticipatory healthcare. Within these periods, they matched the existing capabilities to niche areas that the clinical teams could bring excellence to, and these were in dental care, eye care, sports medicine, diabetes care, geriatrics and preventive health. To expand the existing range of services, other areas of clinical excellence were also beefed up, such as the Department of Otorhinolaryngology (ENT) and the Day Surgery Centre.

It was an uphill battle to recruit clinical and nursing staff due to the poor reputation of the hospital. During those difficult times, the National Healthcare Group (NHG) offered tremendous support and guidance, sharing resources and new clinical practices and standards. The leadership of NHG made sure that although Alexandra Hospital was one of the smaller hospitals in the NHG cluster, it was not forgotten. NHG Group Chief Quality Officer Associate Professor Nellie Yeo was instrumental in building the hospital’s clinical quality team, especially during the Joint Commission International (JCI) quality application process. The Health Manpower Development Programme (HMDP), which provided funding for hospitals to send staff overseas for training, was extended to doctors in Alexandra Hospital to give them opportunities to continue improving their clinical skills. Unfortunately,
some doctors left soon after returning from their HMDP attachment, citing that Alexandra Hospital did not have enough patients to practise their subspecialty on.

Dental Clinic

For two years before restructuring, the Dental Clinic had not been in operation. The original dental team seconded from the National Dental Centre had decreased significantly through attrition and the clinic eventually ceased operation. In its effort to rebuild its internal resources and capabilities, the hospital embarked on a partnership with NTUC Denticare to co-manage the clinic.

The new leadership of the Dental Clinic was brought about by a chance conversation. Dental surgeon Dr Wu Loo Cheng recalled that she came aboard in a rather accidental way. During the period of restructuring, one of her patients, a director in the Hospital Planning Department was talking about her work at Alexandra Hospital. In response, Dr Wu jokingly asked if they were hiring dental surgeons. To Dr Wu’s surprise, a meeting was quickly arranged for her to meet with CEO Mr Liak. They ended up talking for more than an hour and Mr Liak offered Dr Wu a position at the dental clinic on the spot.

As the clinic was operating in partnership with NTUC Denticare, an arrangement was made, with Dr Wu an employee of the hospital, working in the facility which was “rented out” to NTUC Denticare. Profits were split 55-45 and NTUC Denticare received the larger share. In July 2001,
Dr Wu brought along three other colleagues and with the help of several others from private practice as locums, they built the Dental Department from scratch. Taking the opportunity to be flexible and break away from established norms, they were able to offer a complete range of dental services and oral maxillofacial surgeries. These were supported by an in-house dental laboratory staffed by highly skilled technicians making dentures and fabricating prostheses to restore facial defects. Dr Wu said, “There is a strong family culture here because we are friends before colleagues, and this warmth is transmitted to and felt by our patients.”

As the workload picked up and the business turned around, it was decided then that the partnership should end. Unfortunately the partnership agreement was verbal and there was no formal contract signed. This made the partnership valid for an indefinite period of time, and the hospital had to pay a penalty to break the contract.
“There is a strong family culture here because we are friends before colleagues, and this warmth is transmitted to and felt by our patients.”
Eye Clinic

The Eye Clinic similarly started off small and almost non-existent. Even the head of department appointment was part-time, and the clinic relied on visiting consultants until the first full-time medical officer joined in 2001. Subsequently, in 2002, A/Prof Au Eong Kah Guan took over as the head of department and began to build the manpower and equipment capabilities of the clinic.

The team conducted research, published papers, and collaborated with local and overseas centres as they assimilated further subspecialties and extended services to bring specialist eye care into the heartland. They adopted a wider approach to eye care, encompassing the various visual science disciplines such as optometry, orthoptics, ophthalmic imaging and ophthalmic nursing, and even worked closely with other departments such as the Dental Clinic. They visited the Aravind Eye Hospital in India, which had a model of care that was exactly what Alexandra Hospital was looking for—cataract surgeries were not glamorous, but Aravind had built a brand by perfecting them to high levels of efficiency and low cost.

Incidentally, Alexandra Hospital also became the first in Singapore to allow guide dogs for the blind on hospital premises.
Sports Medicine

An enthusiastic group of orthopaedic surgeons who were passionate about sports medicine set up the Alexandra Centre for Exercise and Sports Medicine (ACES) to provide total medical care of all types of exercising individuals, whether professional or recreational, young or old, wheelchair-bound or able-bodied.

For several consecutive years, Alexandra Hospital partnered Standard Chartered Singapore Marathon as the official medic team for the run. Besides providing ambulance and medical services, the hospital also trained volunteers in cardiopulmonary resuscitation (CPR) and other forms of first-aid. The hospital’s sports medicine team also worked closely with Singapore Sports Council to provide medical support for the national teams, including the Special Olympians.

Diabetes Centre

Poorly controlled diabetes leads to a myriad of complications such as blindness, kidney failure, heart disease, stroke, and gangrene. Diabetes care ties together many underlying areas of health and is the key to reducing these dreaded complications. A/Prof Sum Chee Fang, an endocrinologist who was practising at Gleneagles Medical Centre, saw this need and joined Alexandra Hospital in April 2001 to set up a Diabetes Centre dedicated to the holistic care of people with diabetes.
His arrival sent the signal that Alexandra Hospital was serious in developing its capabilities in diabetes care, and many good clinicians followed him to the hospital within a few months. He championed the vision that services related to diabetes care should all be housed under one centre, employing a comprehensive team approach in looking after the needs of the patient with diabetes. The Diabetes Centre also promoted clinical research to better understand diabetes and its potential treatment strategies.

Together with colleagues from other institutions, the team from Alexandra Hospital managed to convince Nanyang Polytechnic to set up a course for diabetes nurse educators, to help with the many facets of diabetes care and to educate the patients and their families on diabetes self-management. This specialised diploma for diabetes still exists today.

With the team’s efforts and purposeful focus on developing the diabetes specialty, the Diabetes Centre soon firmly established itself as a leading diabetes care provider in Singapore.

**Geriatric Centre**

Geriatric care had been a strength of Alexandra Hospital. In November 1994, the one-stop Geriatric Centre was opened with facilities for outpatient, inpatient, homebound day care and community outreach programmes. An acupuncture clinic was also opened in 1996 to provide elderly with access to Traditional Chinese Medicine that many of them were more familiar with.
In April 2001, the Health for Older Persons (HOP) Programme was launched to “help Singaporeans ease into old age” through participating actively in physical exercises, discussions and demonstrations that would mould improved lifestyle habits. The programme was targeted at all elderly people, even those who were healthy, to equip them with the skills to live confidently well into old age.

Geriatric services extended beyond patients and the elderly to empower their caregivers and their communities to take ownership and play an active part in the ageing process.

In July 2002, the hospital partnered South West Community Development Council (South West CDC) to launch an Eldercarers Programme. This programme aimed to train unemployed residents with knowledge to look after their semi-bedridden and bedridden elderly neighbours in the home. Participants learnt home-help skills such as lifting and transferring the elderly from one position to another and dressing their wounds. South West CDC assisted to match the Eldercarer to elderly residents in the community who needed these services. With these new skills, these unemployed residents could earn some money taking care of their aged neighbours.

These same skills and knowledge were also taught to family members and caregivers of elderly patients recovering from stroke or falls. “If we can teach them some simple skills like lifting the older person from the bed, the job becomes much lighter and the caregiver can focus on enjoying the time together with the older person,” shared A/Prof Pang Weng Sun, who was Head of Geriatric Medicine at Alexandra Hospital after restructuring.
Staff from the Geriatric Centre provided counselling to caregivers who were stressed by the demands of caring for the elderly. Support groups such as the Dementia Carer Support Group were set up. Carers shared the challenges they faced and found solace that they were not alone in their struggles. The therapists taught the carers how to manage the behaviour of the patients and themselves, learning that it was natural for them to feel guilty, upset or even angry. They were also taught communication techniques on how to facilitate social interaction with the patients and maximise their functional abilities in everyday activities.

Modifying homes by fitting them with adaptive aids relieved caregivers of some strain by maximising patients’ functional abilities in simple daily activities. At the hospital, the Home for Independent Persons (HIP) Studio started off as a small training room for therapists to teach caregivers how to set up their houses to be elder-friendly. There was overwhelming demand and a separate IKEA-like showroom had to be added. Caregivers could also conveniently purchase the displayed equipment and adaptive aids from the hospital shop.
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PATIENTS FIRST

Chapter 3
Alexandra Hospital had a very clear principle in its transformation journey—patients should always come first. It was not enough to improve the standard of clinical services, service quality had to be improved in tandem. As such, it was necessary to clean up and renovate the areas that patients frequented, and supporting facilities which were behind the scenes. To be accountable for its economic viability, a number of performance benchmarks were identified from the best practices of various types of industries. The simple principle of “Patients first” was adopted and concrete actions were taken to walk the talk.
The team began work by reallocating the spaces so as to improve service quality. Until the new management team took over, space around the hospital was allocated based on staff convenience. The team wanted to change this to make patients' convenience the main consideration. They understood that when people stepped into the hospital, they found themselves in an unfamiliar setting, and were also often anxious about being in a place they would normally avoid visiting. The right thing to do would be to make the layout as intuitive as possible, to help people navigate the hospital smoothly.

Many sacrifices had to be made. Administrative offices that were once located in the most convenient block of the hospital made way for Specialist Outpatient Clinics to solve the problem of patients having to walk long and confusing distances to get to them. The hospital management decided to give up their prime office space and shifted instead to a vacant upper floor of the staff canteen, which faced the rubbish dump. The Diabetes Centre was relocated closest to the lobby, due to the large numbers of patients who visited it frequently.

There was also a change in car park allocation. Staff no longer enjoyed reserved lots near the clinics. Instead, patients and visitors were given priority access to the most convenient parking lots, and staff were encouraged to park near the mortuary, or under the shady trees that hosted large flocks of birds.

However, not all of the changes were popular, such as the conversion of the doctors’ lounge which was located in a standalone low-rise building near the
training centre. The team decided that such a beautiful facility should be made available to everyone by turning it into a seminar room. The doctors were initially upset that they would no longer have a place to rest during breaks in their hectic schedules but their sacrifice paid off. The new seminar room was subsequently used to host patient feedback sessions, which led to improvement in quality and service.

**Cleaning Up Behind the Scenes**

What would patients want to see, feel, smell, and hear as they enter the hospital five years into the future, and what services and facilities would they use?

The team was conscious that unseen amenities contributed to visitors’ impressions, sometimes without them even realising it. For example, hospital toilets could influence visitors’ overall perceptions of the cleanliness and service of the hospital. Something had to be done to improve the central toilet as it was located next to the pharmacy, right along the “Orchard Road” corridor—the busiest stretch in the hospital. More than a thousand people passed it daily!

Inspired by the open-concept toilets at the Singapore Zoological Gardens, the hospital management invited Mr Bernard Harrison, then CEO of Singapore Zoological Gardens, to lend a hand in giving the unsightly hospital toilet a complete “facelift”. With the clever positioning of cubicles and the use of timber slats instead of walls, the toilet became well-ventilated, brighter with natural lighting, and was transformed into a soothing environment.
The hospital’s worst problems were turned into its best showcases and the toilet was a shining example.
It was christened the “D-Stress Corner”. The renovated toilet also boasted several new features, such as automatic cleaners and nappy changing stations in both the male and female toilets.

The hospital’s worst problems were turned into its best showcases and the toilet was a shining example. It even won several awards for the hospital. A mere “facelift” was not sufficient. To ensure that it continued to be in top condition, Mr Liak personally checked the toilet every morning to see if it was clean and well-maintained, and alerted the relevant departments immediately whenever the standards fell.

The hospital kitchen was another area that needed a major overhaul. Birds had colonised the roof, termites had infested the cupboards and wooden structures, and cobwebs were hanging on the doorways. Rats and wild cats were also spotted running around the premises. The old mosaic flooring had loose tiles, with bags of rice and flour lying on the floor as there were not enough proper storage facilities. The aluminum plates made clanking noises every time the staff dished out food from the tingkat containers for the patients. Kitchen staff recorded the menu and food orders on dusty chalkboards, and the food was bland and lacked variety.

The management was still in transition at the time, and some of the old management were not supportive of the changes being made. Ms Yen Tan, the assistant manager in charge of the kitchen project at the time, recalled one particular incident involving a cupboard. They had disposed of an old cupboard over the weekend, and on the following Monday received a stern note referencing regulations that assets over a thousand dollars could not be simply disposed of, and that they would be reported to the Ministry for contravening regulations. Such incidents could seriously hinder the progress
Staff from other departments joined the kitchen clean up with teams working after hours and on days-off to get the job done.
of the project and were handled with caution. To resolve this issue, the team referenced the same set of regulations, and explained that changes had to be made to improve the current state of the kitchen as it had also failed to meet regulatory standards. Fortunately, the matter was not escalated and the cleanup efforts were allowed to continue.

Everyone had a part to play in cleaning up the messy kitchen, including staff from other departments. To speed things up and make it fun, a competition was held to see which team was best at cleaning. Efficiency was key as the team was only allowed to shut down the kitchen for two months for renovation. The work included installing new stoves, purchasing new crockery, and introducing tray line workflows. In the meantime, to ensure that the hospital patients were not affected, the hospital sought help from NUH and Changi Airport’s in-flight catering services (SATS) to continue providing meals for patients.

Yen shared that the kitchen’s new conveyor system of food preparation was inspired by McDonald’s. “The fact that McDonald’s french fries look and taste the same in every outlet worldwide presented a model for consistency in service. McDonald’s uses lean management to achieve high productivity, efficiency and consistency through highly standardised processes and smart use of automation.”

The kitchen’s location brought about its own problems. It was far from the wards, and food was often cold by the time it reached the patients. There was no budget for commercial-heated food trolleys, and staff racked their brains for a solution. During a visit to Apex Harmony Lodge, a home for dementia patients, they chanced upon the home’s decommissioned food trolley carts. The carts were to be discarded because they were not heat-insulated. The
The service of all meals was closely supervised to ensure patients received food that tasted good and looked appetising.

“When patients get better food, they feel happier. When they feel happier, they get well faster.”
team bought the carts at $600 each and manually fitted each trolley with $60 motors to create a homemade warming system. This resulted in warm food for the patients. Such frugal innovation became a hallmark of the hospital’s transformation.

The chefs were empowered to view the hospital meals as more than just “food for sick people”. Chef Ho Shok Fong was one of the chefs who joined in 2000. He summed up the potential of good hospital food, “When patients get better food, they feel happier. When they feel happier, they get well faster.” Instead of only offering a slice of toast with jam and eggs for breakfast, the chefs ensured that the food suited the multi-racial palette of the patients. Local delicacies such as chee cheong fun were added to the breakfast menu. More fresh food and less canned food was used. Lunches and dinners were expanded to include appetisers and desserts, and a pastry chef was hired. Special requests from terminally ill patients were accommodated as much as possible, with the help of the dietitians. Chef Ho recalled that an elderly patient specifically requested for bak kut teh, which the chefs provided, much to the delight of the patient.
Case Study Hospital in a Garden

Hospitals have always been considered miserable places to be. The Alexandra Hospital management team believed otherwise and aimed to build a “Healing Oasis” that would help patients view their situation and surroundings more positively. Of the various physical transformation projects in Alexandra Hospital, one that most members of the public still remember is the garden.

The transformation of the garden began with a very practical purpose. The hospital originally had two exits, and the bus stop outside the hospital was located in between, equidistant from each exit. This meant that patients and staff had to walk in an extended roundabout way just to get into the hospital. A “Valley Walk” was created by demolishing a section of the wall to install a gate next to the bus stop, and a direct path was built from the bus stop to the hospital.
The garden initiative was spearheaded by Ms Rosalind Tan who was an Occupational Therapist in the hospital for more than 37 years. She wanted to dedicate the transformation of the garden as her “retirement present” to the hospital. Rosalind raised this idea to Mr Liak, who immediately appointed her as the “Chief Volunteer Gardener”.

As the hospital was facing financial constraints in its early restructuring days, there was no budget for fanciful pavement decorations, so various leaves were used to create rustic leaf imprints on the plain cement paths. Handrails were later installed for safety. Everything was DIY, as Rosalind shared, “If we were to get a contractor, they would be sure to quote us a high price by using expensive stones and tiles.” The team even went to Malaysia to buy “50¢ plants” that would have been significantly more expensive if bought locally.

The garden initiative came at an opportune period when large-scale changes were taking place. There was great resistance from the more senior staff members who were used to the old ways of doing things, but they were happy to help with the gardening. Changing the mindset was very slow, but changing the infrastructure was easier. Mr Liak personally took part in the gardening activities, and many came to follow his example. As an incentive, anyone who planted a tree in the hospital was allowed to put their name on it. Staff members were delighted by this and would proudly tell people which trees were theirs.

The garden became the proverbial doormat—the change in mindset started from the openness to the garden concept and crept into the hospital culture.
Thinking bigger, Rosalind had an even loftier goal in mind. She wanted to recreate the hospital driveway along a similar concept as the bougainvillea-lined roads of Changi Airport, as the hospital driveway was “the first thing you see when you arrive and the last thing you see when you leave.” The Canna plant, with its bright orange and red flowers, was planted along the hospital driveway. This helped create a more cheery mood for people as they drove into an otherwise morbid hospital. With the help of her husband Mr Tan Wee Lee who was a retired architect, she envisioned a “Hospital-in-a-Garden”.

**Much of the transformation was experimental without fear of failure, “We just experimented along the way. Mr Liak kept telling me not to worry—if I did it wrongly I could always start again,” shared Rosalind.**

The plants became a useful means to conceal ugly infrastructure, such as the rubbish dump which was located right beside the entrance. It was less costly to grow plants than to tear down and relocate existing structures.

Even the choice of types of plants was carefully considered—hardy, lush plants that required less attention and maintenance were preferred. This led to some interesting discoveries. For example, bird’s nest ferns were planted on the ground to cover ugly roots of trees. Rosalind recalled, “At first, the idea was ridiculed. Everyone told me that bird’s nest ferns should not be on the ground, because they grow on trees. However, they served their purpose, were beautiful, inexpensive, and did not need to be pruned, so they were left on the ground. Today, I see that the National Parks Board uses bird’s nest ferns in the same way around Singapore.”
In 2002, a butterfly enthusiast Mr Khew Sin Khoon casually mentioned that the location of Alexandra Hospital was conducive for the breeding of butterflies. Mr Liak jumped at the idea immediately. The greatest challenge would be to get the butterflies to stay in the garden without building a conservatory. It was not enough to release many butterflies into the garden because the butterflies would fly away if the environment did not attract them to stay. It was also not sufficient to simply plant many flowering plants. The secret to enticing the butterflies to lay their eggs was to grow the correct, species-specific plants in the garden. With the help of Mr Khew, and fellow butterfly enthusiasts Mr Simon Chan and Mr Gan Cheong Weei, the garden came to host over a 100 species of butterflies. Among them were some of Singapore’s rarer species such as the Birdwing and Common Rose. True to the hospital’s frugal habits, the Butterfly Trail’s information signboard was decorated with fake butterflies. They were purchased and recycled from a shopping mall along Orchard Road after they were no longer needed as store decorations.

The reputation of the Butterfly Trail grew and soon members of the public, especially nature lovers, photographers, teachers and students were visiting the hospital to see the butterflies, and not the patients. One couple even got married in the gardens!

The Istana’s gardeners heard about Alexandra Hospital’s success in attracting rare butterflies and invited the butterfly enthusiasts to share some tips. The team gave the Istana some Birdwing caterpillars, and in return received a present of water lilies from the Istana gardens. The Butterfly Garden Project also earned Rosalind her unofficial title as “Madame Butterfly of Alexandra Hospital”.
Later, projects such as an eco-pond, a medicinal garden, a fragrance garden, a banana plantation, and a bird sanctuary were added. Botanist Dr Wee Yeow Chin had given a talk to the hospital on behalf of the Garden Society and shared his book, “Plants that Heal, Thrill and Kill”. With his help, the plants described in his book were found and planted to create an actual medicinal garden. This was made possible by the sponsorship of Eu Yan Sang International.

In addition to the garden, there was an open field behind the Geriatric Centre. It had been the site of a mass execution during World War II. Originally, there was a sign prohibiting trespassers, and the field remained unused, except on Alexandra Hospital’s Family Day. The management adopted an abundance mindset as there was little use in having beautiful relaxing spaces if there was nobody to appreciate them. They opened up the field for public use and made that part of the hospital livelier. Even the policemen from the nearby police station frequently used the field to play soccer.
The hospital gardens were transformed from plain grass and trees to a tropical healing environment.
Chapter Bibliography


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THE FOUR TENETS OF PROVIDING CARE

Chapter 4
From the simple principle of “Patients first” came the four tenets of providing care - “good enough for my own mother without special arrangements”, taking the initiative in “do first, seek permission later”, being humble as an organisation to “learn from everyone, follow no one”, and to “make ourselves useful” after having received much from others.
Good Enough for My Own Mother

To the new Alexandra Hospital management, the litmus test of service quality was that staff could proudly say the standard of care was good enough for their own mothers without having to make special arrangements. Then COO Mrs Chew Kwee Tiang said, “Sometimes, we may want to do things that are to our convenience. But if we turn around and say, ‘If the patient was your mother, what would you do?’, that changes the perspective.”

Taking Honest Feedback

During the first few months of transformation, the priority was to decide what to build on. The team focused on learning more about the burning issues from staff, patients, and ministry officials, and to size up the challenges and opportunities ahead. Complaints were viewed as an opportunity to improve. Beyond the usual patient feedback forms, the management team went the extra mile to actively seek out dissatisfied patients, inviting those who had written complaint letters to come for a group meeting to “scold more”. The first session started with 50 patients, who were invited to raise their various concerns. Due to its success, it eventually became a regular lunchtime focus group every last Saturday of the month.

These focus group sessions were regarded with high importance and were chaired by the hospital CEO, CMB, or COO. Other members of senior
Beyond the usual patient feedback forms, the management team went the extra mile to actively seek out dissatisfied patients, inviting those who had written complaint letters to come for a group meeting to “scold more”.
management sat in to follow up with implementation. They typically consulted five to eight patients and their families, and were attended by 20 to 25 staff. During these sessions, the rule was that only patients could talk. Staff listened and were not allowed to defend their actions. This firstly ensured that patients shared their emotions and concerns candidly, and secondly, instead of attempting to explain their actions, staff would empathise and listen to the person behind the complaint. When they saw how patients were emotionally affected as a result of some of their mistakes or gaps, they would be motivated to change. In the case of a genuine mistake or system failure by the hospital, the backbenchers consisting of nurses, clinicians, administrative and operations staff would record and act on it. Responses were expected within 30, 60, or 90-day cycles, such that when that patient came back again, they would be able to see the changes.

Some patients expressed worry when their medical histories were not completely recorded, or when their requests were not heard. One complained, “Don’t you people talk to one another?” Another mentioned that his confidence dropped every time he was “poked” with a needle, as it was obvious to him that they were struggling to access his vein. Some mentioned that the nurses only smiled when they were in a good mood. Others wanted to be called “by my name rather than my bed number or diagnosis”. They also mentioned “cost-effective care”, stating that they were not asking for fees to be cheaper, but rather, “when I do a test and pay for it, I would want to know the results.” Such feedback showed that patients wanted to be diagnosed, treated, and advised on their medical conditions. They expected the hospital to deliver consistent, good quality care and services, respect their dignity, be transparent with information, facilitate access to integrated care and services, and provide cost-effective care.
Implementing, Monitoring and Sustaining

To tackle the glaring lapses in service quality, a Quality Steering Committee (QSC) of senior management, clinical heads, and administrators was set up. They acted as a formal performance management system to identify problems and potential solutions in a structured and strategic manner, and to ensure that the solutions were implemented, monitored, and sustained.

From the beginning, the focus on scientific methods of data analysis was greatly emphasised. Ms Cheong Choy Fong, then Director of Human Resource Development who spearheaded the quality service improvement project, explained, “Data is used to convince the staff of the existence of the service gaps and encourage them to come on board to be part of the improvement process. Staff might not see the need for improvement if they are just told what to do, but with the hard evidence of data they would not be able to deny the need for change.” To achieve this, the team engaged General Electric to train 15 hospital staff as Six Sigma Green Belts in the Six Sigma framework, and the Balanced Scorecard was rolled out and implemented in 2001.
"Staff might not see the need for improvement if they are just told what to do, but with the hard evidence of data they would not be able to deny the need for change."
One of the issues identified by the Six Sigma team was the long waiting time at Specialist Outpatient Clinics (SOCs). Patients did not mind waiting, but to wait for more than three hours, only to see the doctor for five to ten minutes was just not acceptable. Not only did this result in customer dissatisfaction and lower referrals, it also led to staff being constantly rebuked by irate patients, resulting in low morale and high turnover.

Due to budget constraints, the solution could not come from taking the easy way out and increasing the number of doctors and nurses. So, the focus turned to increasing productivity and effectiveness by streamlining processes.
The project team examined the flow of a patient step-by-step from registration to consultation, and discovered that a key time-waster was multiple layers of queues. Patients, on arrival, queued to get a queue number to be registered, then on registration they would receive another queue number and be asked to wait for their turn outside their designated consultation room. Further analysis revealed that 70% of these patients had come for follow-up appointments.

The self-registration concept was born. Patients who had been to the clinic before could now register themselves by scanning their appointment cards directly at a self-registration kiosk.

This was a novel idea in the early 2000s. The turnaround time at the SOCs was cut down drastically, and waiting time for repeat patients was reduced to within an hour. As repeat patients made up the majority, this new process also freed up manpower to give more attention to new patients.

When new patients came in with referral letters, they were ushered by patient greeters directly to the registration counter, where they could drop their referral letter into a tray and wait to be called. Eventually, as patients became more familiar with the registration process, the hospital could re-deploy the patient greeters for other purposes.

By July 2002, 53% of the patients left within the hour compared to 36% in 2001, despite an increase from 5,334 to 8,165 patients on average each month.
Another obstacle tackled by the Six Sigma process was the patient billing cycle, one of the frequent complaints during the feedback sessions. Patients received an interim bill when they were discharged, but had to wait for weeks before receiving their actual medical bills. By then, they could not remember what services they had used, making it difficult for them to verify the accuracy of their bills. There were often many errors. All this resulted in angry patients refusing to pay their bills. The long wait for the refund of their $600 admission deposit exacerbated the issue.

The delays and inaccuracies were mainly caused by shoddy documentation of consumables, lack of communication between the wards and operating theatre, and time wasted duplicating work or deciphering illegible handwriting. The whole process had to be streamlined.
In the revised process, the Patient Service Associate (PSA) would key in the diagnostic code, and the doctors themselves would input their remarks directly into the electronic system. Cases were segregated to fast-track those that did not require subsidy claims, such as those paid by credit card or by foreigners. Strategies to maximise efficient submission of Medisave information to the Central Provident Fund (CPF) Board before the closing time of 3pm were also adopted.

The cumulative effect of eliminating these redundancies directly reduced bad debt by $400,000 per year, and reduced the billing cycle from 16 days to 6.7 days within a span of just four months, and subsequently to 5.7 days.

Although there was much initial tension between the administrators and clinicians, more staff found the Six Sigma process helpful in improving their level of service, and they were receiving much better feedback from their patients. They were more willing to come on board and even initiated projects on their own. These included improving the accuracy of medicine dispensation, and shortening the turnaround time of operating theatres and X-ray services. A staff suggestion scheme was developed to pick up new areas of opportunity.

Suddenly, there were many new projects, Key Performance Indicators (KPIs) and targets, and Balanced Scorecards. Every inch of success was celebrated to encourage the staff to keep up the good work. It was called “Sounding the Gong”. Every time a new unit was set up, the hospital would have a symbolic
ribbon- and cake-cutting ceremony to celebrate its success of achieving yet another milestone.

Once improvements were made, they were International Organization for Standardization (ISO) documented. Within eight months, Alexandra Hospital achieved ISO 9001:2000 and ISO 14001 certifications. A huge celebration was organised to acknowledge staff contributions. Subsequently, the hospital also achieved ISO 18001 certification.

The strive for excellence soon became ingrained in all departments. In 2002, the hospital went on to win the People Developer Standards Award, Singapore Quality Class, PS21 Organisational Excellence Award, Family Friendly Firm Award, Environmental Achievement Award, Outstanding IQC Organisation 2002, and the ASEAN Energy Efficiency Award, among others.

In 2003, the hospital also started working towards achieving JCI accreditation, which was awarded just two years later.
WOW! teams, modelled after the Ritz-Carlton hotel’s WOW level of service were formed to improve service standards. Staff at the Ritz-Carlton hotel are given a small budget that they can use to make their guests’ stay memorable.

At the hospital, staff looked at delighting patients at “touch points”, significant moments of interaction during their visit to the hospital. For example, other than the improvements in waiting time and billing cycle, a WOW Process Map, or patient journey map, was created to help new patients quickly navigate the system and reduce their anxiety.

SMS appointment reminder services reduced rescheduling of patients who forgot to turn up. A small coffee and snack corner was provided for patients who needed a boost after fasting for their blood tests.
addition, Cupboards of Delight were set up in the wards for patients who were suddenly admitted to the hospital. They were often unprepared and did not have their personal effects with them. These cupboards were stocked with toiletries, snacks, and even back-scratchers and board games, in anticipation of their needs.

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No One Dies Alone

One of the earliest initiatives for putting the heart back into the hospital was the No One Dies Alone (NODA) programme, a completely ground-up effort. The hospital recognised that not everyone was fortunate enough to have close family members visit them in hospital when they were sick. For some elderly patients, their spouses had already passed away, and they had no children or were estranged from their families. These patients would have to face their final moments alone, possibly without closure and peace. Under this programme, patients who were critically ill with no next-of-kin or family support would at least have someone, a volunteer or member of the staff, by their side, to act as a surrogate relative.

Such patients included those on comfort care, Do Not Resuscitate status, or who were in their last 24 to 48 hours. Volunteers of the NODA programme had to go through a two-day Grief and Bereavement workshop, where they learnt counselling techniques and how to care for the dying. One of the pioneers of this programme, Ms Sim Lai Kiow, a specialty Nurse Clinician
in palliative care, pointed out, “Death is already scary. Dying alone makes it even worse. Apart from taking care of their needs, we have to be extra sensitive to their feelings. Sometimes all they need is a listening ear. Even if they are too ill to talk, just holding their hand shows that you care and will be there for them all the way to the end.”

Some staff did this over and above their regular nursing duties, outside their working hours. Besides hospital staff, some volunteers were members of the public. Mr Lim Bong Kok found out about the programme through a newspaper article and decided to volunteer. He recalled one critically ill elderly female patient was suspicious of his intentions of befriending her and was initially hostile. However, he continued to visit her, even when she was moved to another hospital, “I feel that it is always a privilege to give rather than to receive. This is my own small way of giving. We eventually became friends. Before she died, she told me that she was thankful for everything that I had done for her.”
All staff were empowered to make decisions without needing to seek clearance for their actions first, if they could be justified to have a time-sensitive benefit for the patients.

A “Just Do It” award, inspired by the Nike tag line, was created specially to celebrate the instances where staff took the initiative to go beyond the call of duty. This award promoted the mindset of “I can, unless explicitly told ‘no’,” instead of “I cannot, unless explicitly told ‘yes’.” The winners of the award aptly received a pair of Nike shoes each.

One instance of “Just Do It” was during a sudden power trip in the building, where teams of hospital staff made sure that service was not disrupted for the patients. At 1.40am, some security officers, A&E assistant nurses and healthcare support officers carried two patients in stretchers up four flights of stairs to the wards. In another part of the hospital, six nurses and patient relations associates transferred the body of a Muslim patient who had just passed away down several flights of stairs, so that the deceased could be transported to the mortuary and buried within the timeframe stipulated by religious guidelines.
Case Study Taxi Chaperone Service

Another example of a “Just Do It” project was the creation of the Taxi Chaperone Service. When the Eye Clinic was first set up, patients were reluctant to transfer to the new clinic for cataract surgery. One elderly patient agreed, but called up the day before the surgery to say that he would not be able to make the appointment as his daughter was busy with work and could not take leave to fetch him. Ms Yen Tan, took it upon herself to fetch the patient from his home in Tampines early in the morning and to accompany him home after the surgery. Impressed by the excellent service, the patient’s daughter referred five patients to the hospital for cataract surgery. This initiative sparked the idea of providing a transportation service for other patients in similar situations, and a partnership with taxi company Comfort DelGro resulted in the launch of the Chaperone Service. Drivers brought patients to Alexandra Hospital and were taught how to assist frail or wheelchair-bound patients. The hospital even absorbed the $5 advance booking fee. Within the year, 85 cataract patients had benefited from this service.
Learn From Everyone, Follow No One

Improving service levels was not a one-off exercise but rather a constant process of updating practices. To cultivate a culture of learning, the management took the advice of “Learn from everyone, follow no one, look for patterns, and work like hell”.

Based on the belief that “a family that reads together, stays together”, a reading culture was ingrained in all the staff, especially among the senior management. Mrs Chew described the consequence of not upgrading as, “20 x 1, or 20 years of the same experience”. Just as doctors read medical journals, managers would have to keep reading, learning, and constantly upgrade themselves. Supervisors and managers were given a starter list of books that they were strongly encouraged to read. Some of the books had accompanying training programmes that all staff had to attend, such Stephen Covey’s “The 7 Habits of Highly Effective People”. The management concepts from these books created a common understanding and language within the organisation. The growing literature led to a practice of weekly Wednesday book reviews in the auditorium. The last Wednesday of each month was reserved for Vision Alignment talks by senior management and sharing by teams about the learning points from their study trips.

Service Quality teams developed the “Alexandra Hospital Service Ways”, a comprehensive framework created to inculcate service-oriented values and behaviour consistent with the new image of the hospital. It included the Alexandra Hospital Basics, a set of 20 behavioural guidelines for appearance, language, and attitude. Daily roll calls with case studies helped frontline

* growing literature
  A list of books titles recommended by Alexandra Hospital's Senior Management can be found in the Annex of this book.
teams review these basics and share any incidents or experiences to discuss what went well and what could be improved. Powerpoint slideshows of the “Basic of the Day” provided gentle reminders. In addition, staff received a little pocket-sized guidebook called Pocketful of Care, and were apprised of grooming standards. The senior management also conducted orientation sessions for new staff to highlight the Alexandra Hospital values right from the start, and basic service quality training was compulsory for staff to attend.

Advertising guru David Ogilvy once said, “If each of us hires people who are smaller than we are, we shall become a company of dwarfs. But if each of us hires people who are bigger than we are, we shall become a company of giants.” The hospital made sure to hire staff with an open mind and learning attitude. Each manager was given a Russian doll—the nested dolls symbolised the responsibility that each staff held in the training of their juniors.
Because it was difficult to convince the staff that the hospital needed to improve just by telling them to change, staff were given the opportunity to see for themselves how the rest of the world was operating and what other organisations were capable of. To “learn from everyone, yet follow no one”, Alexandra Hospital chose different aspects of many organisations as benchmarks.

Movers and shakers from different industries were invited to speak at the Quality Series talks and share their challenges and experience. Then Executive Director and General Manager of Raffles Hotel, Ms Jennie Chua, was one notable speaker. The hotel was 50 years older than Alexandra Hospital and had a similar colonial structure, but the "Grand Old Dame" far exceeded the hospital with its reputation as a six star hotel. It showed that the age of the facilities was not a limiting factor to providing classy service.
The housekeeping was immaculate and elegant—the hundred-year old hotel was well-maintained with not a cobweb in sight. The success of Raffles Hotel inspired Alexandra Hospital that it was possible to aim to be a “six-star hospital”.

The Ritz-Carlton was also a great inspiration. To better understand what it took to create a great culture of hospitality, Mr Liak became a doorman there for three days. A strategy he implemented immediately after his stint was to create branding and confidence for patients, as well as a sense of pride for staff, through the creation of new uniforms with floral motifs, consistent with a softer, caring image. Contract workers such as cleaners and maintenance staff also received matching uniforms to convey the message that they too belonged to the hospital.

While Mr Liak was in the United States, he visited a Walmart and was very impressed by the friendliness of the store security officers. They were very helpful to customers but when the need arose, were more than capable of apprehending shoplifters. As Mr Liak put it, “We are a hospital, not a jail.” Security officers at the front lobby were now “patient greeters”. They were given new uniforms and trained in customer service, and have become synonymous with the hospital’s warm welcome to visitors and patients, helping the elderly and those in need of assistance. Mr Sockalingam Ramalingam, a patient greeter, is fluent in Chinese dialect, to the surprise of many. He quipped, “When I give directions to lost elderly patients who cannot read the signs and only speak dialect, their faces light up and they cannot believe their ears—an Indian speaking Chinese dialect!”
The branding exercise was so inspiring that even non-hospital staff wanted to be part of it. Mr Lee Tok Hwan, a shuttle bus driver that ferried patients between the hospital and the nearby MRT station, felt so much like a part of the hospital that he even asked the hospital’s Human Resource department for an Alexandra Hospital name tag to wear. He was always smiling and would slow down for passengers to catch a ride on the free shuttle service. On one occasion, he diverted from the usual bus route to send a frail patient to the Geriatric Clinic.

Learning Trips

Alexandra Hospital benchmarked itself against some of the best hospitals in the world, such as Kameda Medical Centre in Japan and Mayo Clinic in the United States.

Kameda Medical Centre could best be described as a modern traditional hospital. Despite being family-run for generations, the Medical Centre’s leadership was very forward looking and adopted many modern approaches. Their CEO, a sprightly elderly gentleman, had heard of Alexandra Hospital’s transformation. He decided to come to Singapore to see it for himself. The encounter blossomed into a friendship of mutual admiration and respect. Alexandra Hospital’s management team subsequently made study trips to Kameda to learn how they had managed to retain a proud Japanese tradition in a modern-looking hospital. The CEO of Kameda also introduced the team
to the Toyota management team in Japan, another organisation that heavily influenced Alexandra Hospital’s practices.

On the other side of the globe, Mayo Clinic was a major inspiration for Alexandra Hospital’s innovative practices. Books on Mayo Clinic’s hospital management philosophy were permanent items on the hospital’s starter kit reading list, and it was from Mayo Clinic that the hospital derived one of its favourite tag lines, “Think big, Dig deep, Start small, Act fast.”

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It was from Mayo Clinic that the hospital derived one of its favourite tag lines, “Think big, Dig deep, Start small, Act fast.”
More than just a hospital, Alexandra Hospital saw itself as an integral part of the community.

Extending Healthcare in the Community

Alexandra Hospital held a firm belief that the best way to improve healthcare was not to wait till patients came to the hospital, but to start with early prevention and detection. With this, the hospital developed the Community Outreach Programme in 2001. It organised many health talks on disease prevention, and community health screenings, especially for the elderly and the poor. When residents were detected with unusually high blood pressure, they were immediately brought to the hospital for further tests as a precautionary measure.

Alexandra Hospital also worked closely with South West CDC, and community hospitals such as St Luke’s Hospital, Bethany Nursing Home, St Joseph’s Home and various Voluntary Welfare Organisations (VWOs) to provide health education and chronic disease management services. Consultants from the hospital would visit these community healthcare organisations regularly to review medications, while nurse educators would conduct training in areas such as managing incontinence. Alexandra Hospital’s lab services were also made available to these organisations.
In 2001, Mr Liak and A/Prof Sum came up with a proposal to provide diabetic screening for the Muslim community. To bring this idea forward, the Diabetes Centre worked with MUIS, the Islamic Religious Council of Singapore. MUIS leaders were shown the statistics from the 1998 National Health Survey which indicated that the Malay community’s diabetes prevalence rate was higher than the national rate. Malay women in particular had the highest rate of obesity and hypertension.

Health talks and screenings were conducted at mosques to make it more convenient for the community. Some 30 hospital volunteers were involved in each session. The hospital’s Muslim staff were fully deployed at the registration counters and counselling stations to give explanations in Malay. The rest of the staff helped out with data entry and taking height and weight.

For some of the volunteers, it was their first time in a mosque. Besides being mindful of their clothing and going barefooted in the prayer grounds, they also put in extra effort to ensure that separate screening stations were provided for men and women.

Subsequently, Alexandra Hospital also reached out to other religious organisations such as churches, and Buddhist and Hindu temples.
Case Study Bringing Sight and LOVE

The LOVE (Loss Of Vision Evaluation) Project was conceptualised to make visual acuity testing a part of the standard assessment at the Geriatric Clinic. The goal was to have early detection and referral of visual impairment. In addition, visual acuity self-testing kiosks were put up around the hospital for the public to test their own vision and seek professional help should they have impaired vision.

Other activities included the SEE (Sight & Eye Evaluation) Project, which aimed for early detection of sight-threatening diseases such as glaucoma, cataracts, diabetic retinopathy and Age-related Macular Degeneration (AMD). Screening was done for people aged 55 years and above at a nominal fee.
Partnering the Corporate Sector

Alexandra Hospital formed many partnerships with the corporate sector to provide health screenings on-site as well as health education talks and weight loss programmes. In addition, they partnered many companies to organise activities. One of these was the annual Standard Chartered Singapore Marathon where Alexandra Hospital was the official medic team for many consecutive years.

Before the start of the marathon, more than 90 hospital staff and volunteers were already up and running, transporting medical equipment to the allocated sites. In preparation for worst-case scenarios, the team brought along 12 automatic external defibrillators. The medical crew included 16 doctors, more than 40 nurses and 25 ambulance staff stationed at different segments of the route.

A/Prof Kenneth Mak, then Head of Surgery at Alexandra Hospital shared, “Other than being an opportunity for us to contribute to society, it was also a good avenue for us to bring our people together. It was very good for building teamwork.”

In 2007, its fourth year supporting the Standard Chartered Marathon, a runner had a cardiac arrest. He collapsed unconscious just several metres away from the finish line. Dr Syed Beevee and Dr Naville Chia, both consultants from the Department of Anaesthesia, led the team in resuscitating and stabilising the casualty before he was sent to the hospital.
Extending Help Overseas

In addition to reaching out to the local community, Alexandra Hospital also went overseas. Staff worked with VWOs for overseas expeditions to help build and rebuild communities, and offered relief aid during times of disaster and crisis.

In 2002, a team of 11 volunteers from Alexandra Hospital went on a five-day home-building mission to Pakem, 18km from Yogyakarta, Indonesia. One of the beneficiaries was Mr Suhartanto, who had been homeless for 13 years. He was one of 100 million Indonesians in severe need of housing. Alexandra Hospital volunteers worked alongside Habitat for Humanity, local university student volunteers, home owners and labourers. Together, they learnt construction skills like tiling roofs, cementing floors, and brick making.

Amongst the team was Mr Liak, together with his 13-year-old son. He shared, “I brought my son along for him to see the real world and also to help out. There are many people from this region living in comparatively poor environments. When the opportunity came along for us to do a little good, we did not give it a second thought."

The volunteers were up at 6.30am every day, busy making bricks using moulds, level-laying bricks, carrying rocks to level the ground, mixing cement, pulling buckets of water from deep wells and carrying pails of water. With no modern machinery on-site, the volunteers formed human chains to carry brick and tiles from one end to another.
“All our hard work paid off because I was able to build houses for the poor that they could call their home. It gave me a great sense of satisfaction,” shared Ms Jamilah Hussin, then Secretary to the Director of Nursing. “Although it was a tough job and I missed my children back home, seeing the smile on the faces of the home owners drained the tiredness out of my body,” she added.

Some staff like Jamilah were able to go on the mission through fundraising. Others financed their own expenses. The excess funds of 20 million rupiah were pledged to build a home for the disabled in Yogyakarta.

The team built more than houses, as strong bonds of friendship and camaraderie were forged. There were also many lessons in friendship as the team interacted with the locals, sharing their laughter, understanding the aspirations of the young Indonesians, and appreciating their simple gestures of hospitality through sharing food together.

Alexandra Hospital was also very active in helping the international healthcare community by sharing its experience and training healthcare workers from the region. In July 2004, Alexandra Hospital also signed a Memorandum of Understanding with BIDA hospital in Batam on mutual longstanding commitment to academic and professional training. BIDA staff attended a one-day course at Alexandra Hospital, which included CPR training for adults and infant, as well as the Heimlich manoeuvre, an emergency method for dislodging particles stuck in the windpipe to prevent suffocation.

Some of the Alexandra Hospital doctors also visited BIDA hospital to share their expertise and participated in active discussions on various case studies. Both hospitals jointly conducted a health screening in Nagoya town, Batam, where more than 300 local residents participated to get their blood pressure,
cholesterol and blood sugar levels measured, and body mass index (BMI) calculated. This relationship proved vital when disaster struck Indonesia several months later.
Case Study *A Flower of Hope*

When the tsunami struck Southeast Asia on the morning of 26 December 2004, Alexandra Hospital felt they had to do their part to help the tsunami victims. The question was: How could they best help?

The very next day, Mr Ng Kian Swan, Deputy Director of Operations, got in touch with one of the hospital’s close working partners, Dr Marwan Nusri, CEO of BIDA Hospital, Batam, to find out more about the medical needs on the ground. Despite the fact that Mr Ng was on his honeymoon, he felt that he had to answer this call of duty.

Medical supplies was identified as the most urgent need at that point of time, and 18 cartons of medical consumables were sent to Batam en route to Aceh. Subsequently, Dr Marwan informed Mr Ng that the Indonesian government wanted Alexandra Hospital’s help to set up medical facilities in Aceh, due to its close working relationship with BIDA Hospital.
The original instruction was to set up medical facilities in Luang Papas medical centre. However, when Mr Ng and the reconnaissance team went to survey the site, to their dismay, the area around Luang Papas near ground zero was torn asunder by the calamity. There was hardly anyone living in the area and what the recce team found were mostly debris and dead bodies.

To make matters worse, the only way for volunteers to get to Aceh from Singapore was first by ferry to Batam, then a flight into Medan, followed by another flight to their eventual destination. But as flights from Medan to Aceh were fully booked, volunteers were forced to play the waiting game.

Meanwhile, on January 8, Mr Ng and his recce team took a trip down to Zainoel Abidin Hospital (ZAH) in Aceh. Following discussions with Dr Marwan and ZAH’s CEO Dr Rus Munandar, the team decided to base Alexandra Hospital’s relief mission there.

It was a Herculean task to scour the hospital clean. When the first team of relief volunteers set foot in ZAH, they were shocked to see the hospital covered in mud. There was no water supply, which made the clean-up efforts even more daunting. The volunteers decided to think out of the box, and used rainwater instead.

The limited supply of oxygen for asthmatic and tetanus patients was also a challenge. The team got around this by connecting two tubes to one oxygen tank, so that two patients could be hooked up simultaneously.

Despite the language barrier and cultural differences, Alexandra Hospital volunteers established good working relationships with the Indonesians
at ZAH, and were held in high esteem by Acehnese patients because of their professionalism, dedication and compassion. There was also great collaboration with other foreign medical teams from Australia, New Zealand, Belgium and Germany.

After the first team of volunteers laid the groundwork in setting up the first inpatient ward at ZAH, the second and third teams subsequently arrived to raise the standard of patient care and consolidate medical services. The ward looked after by the Alexandra Hospital volunteers was the mainstay of adult inpatient services and it offered solace and hope for some of the sickest patients there.

The ward looked after by them would serve as the starting point for the rejuvenation of ZAH, so they named it Ward Bunga Harapan, or Flower of Hope Ward.

For the volunteers, it was also a very fulfilling experience as it gave them a renewed sense of purpose to their roles as health care professionals. “It has been the utmost privilege to have worked with such a motivated team for the most deserving people. We faced the clinical challenge of practicing modern medicine without the benefit of modern amenities, but we overcame the problems and saw each and every member of the team grow in strength,” shared one of the volunteers, Dr Yim Chik Foo.

The close working relationships built during the post-tsunami relief work was strengthened with more collaborations in the following years. Alexandra Hospital signed a Memorandum of Understanding with BIDA Hospital and ZAH to promote closer cooperation in areas such as hospital management and the development of clinical expertise.
The airport was still closed, so Team 2 flew to Aceh on a Singapore Armed Forces C-130 plane.
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Severe Acute Respiratory Syndrome

Chapter 5
Operating theatre staff had to wear extra protective gear, which resulted in hot and difficult working conditions.
Just when the situation was starting to look better for Alexandra Hospital, in February 2003, an unknown epidemic caught Singapore unawares, and threw the entire healthcare sector into a frenzy. Manifesting itself as an atypical pneumonia, no one knew if it was caused by bacteria or a virus, how infectious it was, or its mode of transmission.

Within the first three days of the outbreak, three Singaporeans were admitted to hospitals for “atypical pneumonia”. The number of cases gradually rose and on 4 March, the first healthcare worker in Singapore was infected.

On 15 March, the World Health Organisation (WHO) issued a heightened global health alert after cases of the atypical pneumonia were identified in Singapore and Canada. A rare emergency travel advisory cautioned all travelling individuals to be watchful for the development of symptoms ten days after leaving an affected country.

On the same day, Dr Francis Lee, Head of Alexandra Hospital’s A&E, was attending Tan Tock Seng Hospital’s (TTSH) annual Dinner & Dance. During the dinner, he heard some emergency medicine colleagues buzzing about a strange flu bug in Hong Kong’s Prince of Wales Hospital and that someone had found similar cases in Singapore. The conversation took a decidedly serious turn, and Dr Lee called Mrs Chew to share what he had heard.

The lack of information about the illness unsettled Mrs Chew. At 8am the next day, a Sunday, without waiting for any official instructions, she assembled a task force consisting of the CMB, the Head of Nursing, various heads of departments and the hospital’s epidemiological experts. They rushed to the hospital by 9am and worked all day to prepare the hospital for the looming operational nightmare.
By the following day, Alexandra Hospital was fully equipped for infection control, and stringent screening measures were in place at the A&E. Some people thought that the hospital management was overreacting, but the precautions were necessary as the hospital buildings had old colonial architecture with open wards for ventilation. If the infection managed to enter the wards, it would be almost impossible to contain it.

The hospital’s containment strategy began functioning at a high level, that was eventually matched by other hospitals at the height of the outbreak. Staff began to wear masks as soon as they could. Doctors and nurses took patients’ temperatures while they were still inside the ambulance, walk-in patients with fever were diverted to a tentage area where special monitoring wards were set aside for them, and the staff there functioned on high alert. All staff were discouraged from congregating in large groups or mixing with staff from other wards. Regular training courses were put on hold, except the ones on infection control and emergency precautionary measures. Infection control nurses rigidly audited staff to ensure that infection control practices were internalised, and those who failed had to attend basic refresher courses in hygiene practices.
On 25 March, Singapore had its first death from SARS and the second was reported the following day. The government enforced quarantine of all infected persons. On 27 March, all schools were closed for an extended period. It was no longer “business as usual” in Singapore.

The Alexandra Hospital task force operated on a cycle of feedback and reflection. They met twice a day to discuss and document the epidemiological notes, following which a detailed checklist would be compiled and disseminated to all staff so that everybody was on the same page and had the necessary tools to do their jobs. On the frontlines, screening protocol decisions were revised within the hour if necessary. While the command and control team monitored the situation within the hospital, some colleagues networked for external information and intelligence. Dr Lee himself continued to track the situation in TTSH hour by hour. The team then held daily “town hall meetings” in the auditorium twice, at 8.30am and 5.30pm, to review their performance and learning points for the day, and to synchronise instructions along with any new measures to be put in place.

The data revealed some facts about the pneumonia:

1. It induced fever.
2. Evidence pointed to aerosol transmission.
3. Cases peaked every 10 to 14 days, suggesting that the incubation period was approximately 10 days.
The team had to distinguish the facts from the many opinions that were circulating, making only decisions that would effectively protect against the infection and not those that pandered to the fears of the public and the staff. For example, when hospitals were advised to install negative pressure fans in their wards to stem the spread of infection in case it was airborne, the task force decided against it. They had evidence from contact tracing to show that the infection was not airborne as it was not spread in trains, buses, and lifts. Adopting the fans was not only unnecessary, it could also create a false sense of security. In addition, the exhaust to create negative pressure was noisy and would disturb patients in the wards.

New information guided the decision-making. After the initial panic, things became more organised and data was used to successfully determine the criteria for classifying suspected and non-suspected cases.

Finally on 16 April, the WHO issued a press release officially naming the “atypical pneumonia” Severe Acute Respiratory Syndrome (SARS) and identifying it as a coronavirus.

To Mask or Not to Mask

Once the public understood that surgical masks did not offer sufficient protection and only N95 masks were able to filter out the smaller SARS particles, they were in high demand. New stocks were depleted as soon they arrived and hospitals were left without sufficient supply. At the peak of the outbreak, there were only enough masks for Alexandra Hospital
The team had to distinguish the facts from the many opinions that were circulating, making only decisions that would effectively protect against the infection and not those that pandered to the fears of the public and the staff.
staff in the A&E and Ward 4 where suspected SARS cases were sent. The rest of the hospital had to go without masks. The senior management had to inform the staff of the rationale behind the tough decision, and mutual trust was critical. Healthcare workers had to be protected from both infection and the fear of infection—if they were incapacitated by illness or were too afraid to work, the whole system would be paralysed. MOH worked hard to manage mask stocks and make them available to hospitals in a timely manner. When hard-pressed to find more masks, there was even the temptation to buy them off the black market. The shortage of masks highlighted the chaos and fear that had gripped society.

On the other hand, the mask shortage also brought out the generosity and kindness of others. When the hospital’s mask supplies were depleted, the Institute of Mental Health generously provided 200 masks even though they were also low in supplies. They reasoned that the infection had already spread to their hospital while Alexandra Hospital was still in the clear, and it was important for it to remain SARS-free. When NUH subsequently found themselves with low supplies, Alexandra Hospital paid the good deed forward by giving the hospital a box from its limited supplies. General Practitioners and their clinic assistants were especially disadvantaged in securing masks in the mad rush. They were often in close contact with the sick in the community, but had the least resources to procure masks in bulk. Thus, hospital staff conducted mask-fittings to help protect them as the first line of defence against SARS.

Even with masks, the staff were not out of the woods. The N95 mask was designed to fit snugly on the face to keep out particulate matter, but this also meant that wearing it for extended periods of time could cause one to develop a rash. Many of the staff had reddish circles on their faces caused
by the rims of their N95 masks. One patient greeter, Mdm Anchalmal, had such a strong reaction to the mask that her son encouraged her to quit her job, but she persevered by using baby oil as a balm. Despite this discomfort, staff remained grateful for the resources that had been made available to them. Mr Liak was convinced that the N95 masks were increasing the risk of contamination and exposure. This was a serious concern because it would render the masks counter-productive, negating the benefits that they were supposed to provide. He observed that staff fidgeted with their masks because it was hot, stuffy and difficult to breathe in the non-air-conditioned wards. Coupled with the shortage of mask supplies, masks could not be changed as frequently as was ideal, and the risk of contamination increased every time the staff adjusted them.

The issue was contentiously debated and the team could not come to a resolution. Mr Liak took responsibility by telling the team, “If all of you make a unanimous decision, I will go with you, but if you cannot decide among yourselves, then I will be the dictator.” This acted as an impetus for the team to quickly sort out the less important issues and focus on the complex problems, eventually deciding to continue usage of the masks despite the potential risks. Because of the lives at stake and the importance of making the right decisions, the task force meetings could become quite heated.

While there was high tension, the goal was the same—to come to the best decision. The disagreement and robust debate increased the team members’ respect for each other, contributing to the long-term camaraderie and teamwork necessary to hold the hospital together through the crisis.
Mr Liak took responsibility by telling the team, “If all of you make a unanimous decision, I will go with you, but if you cannot decide among yourselves, then I will be the dictator.”
Managing Public Perception

The mask shortage was an indication of the volatile public sentiment at the time. In addition to keeping the hospital in order, it was essential to work closely with the community at large to manage public perception and fear. This way, instead of panicking, they could approach the situation from a more calm and rational position and take the necessary precautions to protect themselves.

Alexandra Hospital's nurse educators conducted free infection control training courses to nursing homes, community clubs, the National Volunteer Centre and Ministry of Community Development and Sports. They taught nurses in nursing homes how to administer intravenous medication so that their elderly residents need not be admitted to hospitals. This reduced the elderly residents’ exposure to any dangerous bugs, especially since their low immunity made them susceptible to the illness. The nurses also shared basic knowledge about SARS, screening, and infection control procedures with grassroots leaders so that they could act as encouragement for the members of their communities.

When taxi drivers expressed their concerns about contracting SARS from their passengers, Alexandra Hospital took the initiative to provide them with kits containing disinfectants and masks. Detailed fact sheets and a “Good Hygiene Starts at Home” booklet produced by the hospital were also made available to the general public with information about “The 7 Steps of Washing Hands” and other good hygiene practices.
In the beginning, information from authorities was carefully processed to avoid unnecessarily alarming the public. However, by the time SARS was sweeping silently through the population, it became clear that the biggest enemy was not the bug itself, but the fear of being infected. Even for the staff, getting fully geared in protective attire did not make them any less fearful of the unknown. Prof Rajasoorya, then CMB said, “The masks may hide the bugs, but they will never hide the fear.”

At the time, Mr Liak was a council member of the South West CDC, and he worked with then Mayor Mrs Yu-Foo Yee Shoon to combat the contagion of the psychological aspect of SARS. Together with prominent community members, such as Dr Tan Cheng Bock, then a Member of Parliament for the area, they beat up a ridiculous cartoon effigy of the SARS virus. While this had no effect on the spread of the actual virus, the rationale was that while an invisible enemy was frightening, putting a face to the enemy made it less intimidating.

Other Singapore citizens also lent their support to the fight against SARS. Among them was the Prime Minister’s wife, Ms Ho Ching. She diligently tracked the international scientific research community and would even send email updates to all the hospitals at 2am. She was not acknowledged in public, but the healthcare community was very grateful for her support. Ms Ho also came up with a creative idea to stem the potential risks posed by infected travellers crossing the Malaysian causeway undetected. She suggested setting up herbal tea stations so that those who were having fever and feeling thirsty would come to drink the tea and thereby be picked up through the thermal scanners.
While an invisible enemy was frightening, putting a face to the enemy made it less intimidating.
SARS was a difficult time for healthcare workers in particular as they found themselves ostracised by the public due to the nature of their work. Hawkers would cringe when they received money from hospital staff, while bus drivers and taxi drivers would drive past hospital staff who tried to flag them down. Even the healthcare workers themselves were losing their cool. One healthcare worker was caught spreading negative and fear-mongering content on the Internet and was stopped under threat of revoked computer privileges.

On 20 April, after a cluster of cases was traced to some employees in the crowded Pasir Panjang wholesale market, the market was closed for 15 days and the vendors were placed under home quarantine. The hospital kitchen was suddenly unable to purchase the usual daily order of 120kg of vegetables and 50kg of meat. The chefs scrambled to three separate NTUC Fairprice supermarkets to buy 40kg of vegetables each. That amount of supplies would only last the entire hospital three days. When other shoppers saw the chefs buying up almost all the vegetables, they were horrified, and some even scolded the chefs.

In a particularly dramatic case, one week after SARS had broken out, two Myanmese nurses were evicted from their rented apartment by their terrified landlords. This was despite the fact that Alexandra Hospital was still SARS-free. Ms Yen Tan was tasked to find accommodation for the nurses within 48 hours. An unused Housemen’s Quarters tucked away in a secluded corner of the premises seemed like a promising solution. It looked like “Dracula’s
house" in the movies. There was a metal door, and beyond that, a wooden door with two metal bars barricading trespassers. The windows were also boarded up. The place had been vacant for more than ten years and the rot had set in. An eerie haunted feel accompanied the musky smell. However, there was no time to be apprehensive. There were 28 rooms and all needed to be refurbished in anticipation that more healthcare workers would face similar difficulties with their accommodations.

Several departments such as Nursing and Corporate Communications offered help, together with Service Masters Cleaning Company and Keppel Facilities Management Services. Reminiscent of the kitchen cleanup, one group cleaned, one group gave the place a fresh coat of paint, and the rest removed unwanted furniture—chairs with broken legs and cabinets with old files and documents. That afternoon they ordered new furniture from IKEA, and purchased bright coloured bed sheets and inexpensive picture frames to make the place more welcoming. The team survived on apples for breakfast, lunch, and dinner because they did not have time for meal breaks and the kitchen was still having difficulty procuring ingredients. However, the distraction of helping with the cleanup provided some emotional respite from the overwhelming workload and stress of the outbreak.

The next morning, the team had a pleasant surprise. IKEA had decided to waive the $15,000 bill in support of the hospital’s efforts to combat SARS. IKEA's general manager Mr Philip Wee even brought two staff with him to set up the furniture. This was exceptionally touching and totally unexpected. “We knew that our healthcare workers in Singapore had been working flat out and risking their lives so that others were properly cared for,” explained Mr Wee. To show their appreciation for IKEA’s support, staff painted the exterior of the accommodation in IKEA’s signature yellow and blue colours.
The accommodation was called Alexandra Hospital Hotel, and Ms Jennie Chua, who was then CEO of the international hotel group Raffles Holdings, was invited as a Guest-of-Honour to open it with a ribbon-cutting ceremony. On seeing their new accommodation and the effort put in, the evicted Myanmese nurses were overcome with emotion. All 28 rooms were occupied within the first week of its opening. Even local staff who were concerned that they would infect their families asked to stay there.

Over time, with the local media highlighting healthcare workers’ plight, Singaporeans were touched by their acts of selflessness and became more tolerant towards and appreciative of healthcare workers.

Together Through Thick and Thin

Most of the staff stayed and continued to do their jobs. “When the going gets tough, the tough get going,” quipped Prof Rajasoorya. Every department played an active part, even for the non-medical departments. Human Resource and Corporate Communications assisted in the screening process. Many stayed back after work to help with temperature-taking and contact tracing. The dietitians, chefs, and food service helpers packed baskets of fruit and distributed them to the frontline staff in the A&E, wards, and specialist outpatient clinics.

The nurses also worked two shifts back to back, not only to care for patients but additionally to disinfect the hospital, which involved scrubbing the floors and all exposed surfaces. Some were afraid to clean the potentially
Within 48 hours, staff turned an abandoned building into a cosy and welcoming ‘hotel’ for staff who had been evicted from their rented accommodation.
contaminated operating theatres, so senior nurses, such as Ms Alice Leong, volunteered to clean it to set an example. They also took pictures of those who worked in the operating theatre in their full protective gear and appreciated them as heroes.

Some of the staff even volunteered to serve in TTSH, the epicentre of the SARS effort where several of their staff had already come down with the illness. Dr Yim Chik Foo, then an Associate Consultant with the Department of Anaesthesia, worked there for two whole months. Staff nurses Ms Ruth Tan and Ms Pauline Tan volunteered for five weeks at the SARS Intensive Care Unit (ICU). Ms Pauline Tan shared, “We formed a close bond with the staff and patients there. There was a sense of satisfaction when some of the patients in the ICU recovered. However, it was very heartbreaking for family members of patients who could not be physically next to their loved ones during their most painful moments.”

There was an island-wide no-visitor policy to stem the spread of SARS from patients to their relatives. MOH had issued an order that those who die of SARS must be cremated within 24 hours. This was extremely painful to those who had lost their loved ones as they could not do parting last rites, or even have a last look at their loved ones. SARS victims often spent their final moments alone, as visitors were forbidden, for fear of infection. As such, Alexandra Hospital launched a virtual visit scheme to allow patients to be in touch with their loved ones through the television or computer screen.

By 25 April, SARS showed signs of peaking. As it spread through the various restructured hospitals, patients rushed to Alexandra Hospital after the media highlighted that it was the last remaining SARS-free hospital. Patients flocked to the A&E, and patient volume went from a daily norm
of 150 to 350. Everyone had to be screened and so many people were admitted that the wards were full and the operating theatre was running day and night.

The Battle is Not Over

Fortunately, the hospital managed to remain SARS-free throughout the entire outbreak. On 31 May, Singapore was removed from the WHO list of infected areas. This meant that 20 days had passed since the most recent case of locally-acquired SARS was isolated or eliminated.

The team attributed the hospital’s SARS-free status to staying vigilant and erring on the side of caution. Any person could potentially be a SARS contact. The idea that the virus could slip into the hospital through a “Trojan horse” often came to mind. For example, if a patient with SARS were to enter undetected, the patient would spread the virus to a healthcare worker, and the healthcare worker would then infect other patients in a vicious cycle. Because of SARS, there was a paradigm shift. Before the outbreak, staff were thought to be “dedicated” if they came back to work even when they were sick. When everyone was on high alert, staff who were sick were instructed to stay at home as the responsible course of action—going to work would simply complicate the tracing of suspected SARS cases.

It also happened that in 2000, Alexandra Hospital had set a target of achieving zero Methicillin-resistant Staphylococcus Aureus (MRSA) infection rates. As a result, staff were particularly diligent in this area, tracking and displaying
the charts, enforcing hand washing and pushing for infection control. The standards were salient on everyone’s minds even with the added workload.

On 5 July, WHO declared the global SARS outbreak contained. In a span of eight months, the SARS coronavirus had infected more than 8,000 people worldwide and claimed more than 700 lives. Singapore lost 33 lives to SARS, among them doctors and nurses. SARS was a black swan event, and its unpredictability tested the preparedness of the Singapore healthcare system. It was fortunate that the defences of Alexandra Hospital held up and the hospital managed to tide through the crisis.

Soon after the containment of SARS, it was debated whether it would be appropriate to hold the annual Alexandra Hospital D&D celebrations. There were concerns that SARS had been a sombre period and it would be flippant to forget the heavy sacrifices made by many in the healthcare community. However, it was agreed that the staff desperately needed a joyous occasion to break the gloom of the season and to get back into the right frame of mind to continue operating the hospital. As such, D&D continued as usual and served as a time for the senior management and staff alike to mingle. During the D&D, senior management lifted the mood by putting up performances for the staff. This practice has continued till today.

SARS highlighted the stress that caring for patients could have on staff morale. While the D&D provided a positive boost to staff, a more permanent solution was needed. An old shed was renovated and converted into the “Alexandra Hospital Country Club”. It was a haven where staff could hold parties, let down their hair and take a break from the seriousness of work. It even boasted a barbecue pit that was big enough to roast a suckling pig!
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A CULTURE OF KAIZEN

Chapter 6
“The Toyota Way creates a disciplined yet flexible method to approach zero defects, just in time, with no waste. Treating patients is not the same as manufacturing. Manufacturing can be done on a conveyor belt system where everything can be pre-planned. On the other hand, when dealing with patients, many interactions cannot be predicted. However, there were many principles that could still be applied to improve our productivity and efficiencies in a healthcare system.”
During the later phase of its transformation journey, Alexandra Hospital’s management philosophy was greatly influenced by car manufacturer Toyota, especially the principle of developing a culture of “Kaizen”—the Japanese word for continuous improvement of work processes.

**Adopting the Toyota Way**

The hospital’s senior management and staff visited the Toyota plant and its workshops in Japan and Singapore to observe the operations and learn how they could apply similar principles back in the hospital.

“The Toyota Way creates a disciplined yet flexible method to approach zero defects, just in time, with no waste. Treating patients is not the same as manufacturing. Manufacturing can be done on a conveyor belt system where everything can be pre-planned. On the other hand, when dealing with patients, many interactions cannot be predicted. However, there were many principles that could still be applied to improve our productivity and efficiencies in a healthcare system,” shared Mrs Chew.

One example was the use of “Andon signboards”, the Japanese name for signboards that display and alert workers to the changing status of an item along the production line. These were adopted as part of the hospital bed management system to speed up information flow and ease the bed shortage. The signboards made it easier to group patients together to reduce waiting time, and track bed availability for smoother inpatient admissions. In the beginning, the hospital Andon signboards were simple whiteboards
with coloured magnets for indicator buttons. An electronic version was developed subsequently.

**Introducing Kaizen**

“Kaizen” is a central concept in the Toyota Way. These improvements should maximise quality, eliminate waste, and improve efficiency, or at least make improvement more standardised and measurable. Rather than implying that everything must be done faster, it means that every process has an optimal length of time—enough time so as not to compromise quality, but not wasting a minute more. Eliminating waste, “Muda”, must involve identifying and adding value, which is “what the internal or external customers want from the process”.

Just as staff on Toyota’s factory floor were best placed to spot inefficiencies and problems, so were frontline staff in the hospital. “Skunk Wards” were set up in 2003, named after “skunkworks”, which is a business term adapted from the process of improvement that is driven by the end users. These wards were designated as hotspots of innovation to pilot prototypes before they were rolled out to the whole hospital. It was important to test pilot projects in busy wards to get a large enough, representative sample size.

Ward 13, one of the busiest wards in the hospital, was designated as a “Skunk Ward”. It was a testing ground for many experimental initiatives, from standardising nursing activities to improving toilet cleanliness.
“Kaizen” is a central concept in the Toyota Way. These improvements should maximise quality, eliminate waste, and improve efficiency, or at least make improvement more standardised and measurable.
One such project to reduce waste in internal processes was solved elegantly with the introduction of trolleys, affectionately named “COWs” (Computer-On-Wheels). Nurses brought these trolleys on their rounds in the wards. Each trolley had a laptop, barcode label printer and all necessary medical equipment. This allowed nurses to check a patient’s data, draw blood, and label the specimen by the patient’s bedside, all without interruption. By having consumables such as cannulas in the mobile trolleys, the nurses did not have to waste time searching for them in the store. The cannulation procedure could be performed in three minutes, less than half of the original eight minutes! In addition, each trolley had photographs of the items in the positions where they ought to be placed, as a visual reminder of what was there. This made it easy for staff to return items to their rightful places after use or when topping up supplies. Different wards used certain sets of equipment more than others, and the trolley layouts were specific to the wards they were in, with frequently used items placed in more convenient parts of the trolley.

**A Thinking Organisation**

What the hospital learnt from Toyota went beyond improving efficiency in work processes. It built a workforce of staff who took the initiative to think continuously about improvement. Ground-up initiatives were taken seriously as a sign that staff were not just following orders but were thinking through work processes and questioning impractical Standard Operating Procedures (SOPs). All suggestions were welcomed, appreciated, and considered. Mrs Chew explained, “Toyota’s belief is that thinking people
deliver thinking products. We too, promote this thinking mindset in our hospital: think and do, think and do, not just think and think and not get anything done. We want every staff member to be on-board so that when they engage patients they don’t do things just because the SOP says so, they are thinking about it.”

For example, one employee realised that her older colleagues often had trouble differentiating and sorting the hospital garments, so she made mini samples of each type of garment and put them up for easy reference. Her seamstress colleague mended hospital garments by embroidering butterflies over the small holes to reduce disposal and wastage. Mrs Chew said, “Because we cultivate pride-of-work in our staff, they surprise us with their passion and good ideas.” To inspire colleagues and reduce the risk of duplication, projects were shared regularly at weekly hospital meetings.

**Genchi Genbutsu**

One of the complementary Toyota management concepts is “Genchi Genbutsu” which means to “go and see for yourself”. In Alexandra Hospital, this concept was affectionately shortened to “GG” because it was too long and difficult for some staff to pronounce. It reminded staff that to grasp the root of a problem, they had to be aware of what was happening on the ground to understand the context and know the facts, rather than basing their solutions on gut instinct and opinion. This was especially true for the senior management who could easily get caught up with the view from 30,000 feet and miss the situation in the trenches. They made it a point to
go for regular walkabouts, scanning the wards, clinics, and other interactive spaces to look out for tell-tale signs that a problematic pattern was emerging. For example, if they noticed that patients were waiting and looking impatient, they would speak to the patients and staff there to understand why.

When the team from the Diabetes Centre began health screening in 2001, they were only able to screen 22 patients per hour. By practising *genchi genbutsu*, they identified inefficiencies in layout, use of staff, and redundant processes. They experimented with different combinations of layout and queue systems, shuffled the staff around, and through *kaizen*, increased the number of people they could screen to 65 per hour, with the average turnaround time reduced from 45 to 20 minutes, as well as reducing the number of staff required from 12 to 9.

**Hansei**

*Hansei* complements the principle of *kaizen* through relentless reflection. Even when tasks are completed successfully, they must be reflected on to identify what was successful and what failed along the way, and to make clear plans for further iterations. There is no such thing as a perfectly executed task. If no problems can be identified, it is an indication that the task expectations were too low and understimulating, or that the analysis was not sufficiently critical or objective. Looking at problems in this way also ensures that failure is not demonised.
One of the complementary Toyota management concepts is “Genchi Genbutsu” which means to “go and see for yourself”.

*Hansei* complements the principle of *kaizen* through relentless reflection. Even when tasks are completed successfully, they must be reflected on to identify what was successful and what failed along the way, and to make clear plans for further iterations.
The medication reconciliation pilot study by the Pharmacy Department in 2005 was an example which showed that through relentless reflection, “thinking people deliver thinking products”. When patients visited the hospital multiple times for multiple illnesses, they often received new medication for each new condition. In addition, medication dispensed by a different hospital, polyclinic, or General Practitioner would be of a different brand or colour. This resulted in patients’ prescriptions accumulating unnecessary medication, and occasionally the prescribed drugs would interact and cause adverse side effects. As part of the medication reconciliation study, patients were asked to bring all of their current medication with them when they came for their doctor’s appointments. Within 24 hours of admission, the pharmacists would reconcile the newly prescribed medication with prior medication, making sure that certain combinations were avoided, or reducing overlapping effects. The pharmacists also taught patients individually how to take their medication effectively.

On discharge, patients would be dispensed what they required, taking into account the stock that patients already had, rather than the length of time before their next appointment. This was extremely successful. It reduced wastage by preventing the unnecessary build-up of medication in patients’ homes which could expire before it was used, while also saving patients money. An 82-year-old patient ended up paying just $15.86 for his medication instead of the usual $281.

Initially, each pharmacist reconciled one patient per day. However, through relentless reflection, the tedious process was soon significantly reduced. What used to take up to 2 hours per patient was reduced to an average of just 15 minutes. Medication reconciliation was worked into the admissions process for high-risk patients and the system was even adopted by other hospitals.
By 2007, medication reconciliation was made available to all inpatients. The Pharmacy later extended this service to nursing homes as well.

Surprisingly Radical Change

Kaizen projects typically deliver small improvements, but the cumulative end result of many kaizen projects is usually surprisingly radical change. This was most evident in the transformation of the A&E. Unearthly hours, high tension, and frustratingly long waiting times make patient satisfaction at Emergency Departments difficult to achieve. Sometimes, the perceived long waiting time produces more dissatisfaction than the illness management itself.

Traditionally, patients go through registration and triage by a triage nurse where they are “sorted out” into levels of severity:

- P1 being life threatening
- P2 being serious but not life threatening
- P3 and P4 being non-emergency

This is to ensure that senior physicians would be productively engaged in treating the most serious cases. Triage was originally designed for quickly evaluating the wounded in the battlefield and evacuating the ones that required the most urgent medical attention.

This meant that the patient had to first register with the registration clerk, then wait to be triaged, where they would register their personal details...
and health status, past medical history and their current ailment. Then they would have to wait again for the actual doctor’s consultation. Further waiting would be required if procedures such as an X-ray were needed, and finally they had to wait to be discharged. This process tested people’s patience, especially for the simple cases.

The team decided to try placing a senior doctor upfront with the triage nurse instead, and examined its effect on waiting time. At first, this appeared counter-intuitive as it seemed like a waste for a highly-skilled doctor to be sorting patients. Most people were used to the old slow system and could not fathom a change in the entire workflow of an established emergency system. But this change resulted in several benefits. Patient satisfaction rose because they got to see a doctor almost immediately after entering the hospital. Staff morale rose because patients were less agitated. Most significantly, there was a measurable decrease in waiting time to convince the naysayers. For 95% of patients, waiting time reduced from 1 hour 43 minutes in October 2005 to 1 hour 12 minutes in 2006, and half the patients were seen within 23 minutes.
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Building a Hassle-Free Hospital

Chapter 7
Staff studied patient flow when designing the clinics to create a hassle-free experience.
When plans to rebuild Alexandra Hospital were announced, many staff hoped that it would be rebuilt on-site. Unfortunately, their wish did not come true. The existing site was between SGH and NUH, and the population in the area was adequately served by these two hospitals. Most of the other hospitals were located in the south of Singapore and Changi General Hospital had recently been built and opened in the east. Therefore, the new hospital needed to be built in the western or northern regions.

It was initially proposed that the hospital be built in Jurong, where the population was growing. The hospital planning team began drawing up architectural designs and floor plans and preparing for the move to Jurong. But three years later, the plans were derailed. Subsequent analysis showed that the northern region required a new hospital more urgently than the west. This was partly because the patient load in TTSH had increased tremendously in the immediate years after SARS. The decision was finally made to relocate Alexandra Hospital to the north.

“I posed the challenge to the AH rebuilding team: build a hospital... designed with patients unambiguously at the centre of the focus, with technology fully exploited for the benefit and convenience of patients... It will be a hospital which is well linked... and to which the patients can be transferred seamlessly... It will be a hassle-free hospital.”

This was the over-arching challenge set by the then Minister for Health Khaw Boon Wan in a Parliamentary debate on 18 March 2004.
Ten plots of land in the north of Singapore were shortlisted for the location of the new hospital, but Mr Liak only had eyes for the site in Yishun, which was located next to a storm pond.

He wanted to recreate Alexandra Hospital’s charm and natural ambience on a bigger scale - not only creating a healing environment for patients but also a green community space where residents would want to relax and exercise. This new hospital would break away from the traditional clinical-looking stereotype and be at the forefront, creating a blueprint for hospital design.

Mr Liak issued three challenges to the architects:

1. The completed work would have to be something they could be proud of and be able to showcase.
2. It would have to provide convenience to the patients and their families while retaining the “wow” factor.
3. The architects should dare to take risks and not be afraid of criticism, especially from “small-minded people”, or armchair critics.

“Building this hospital was about piecing together all the hopes, dreams, and aspirations of every individual involved in the planning process, from the engineers and architects, to the staff, to the patients and residents in the area,” articulated Mr Donald Wai, then Assistant Director of the Hospital Planning team.
Integrating into Yishun Community

It was feared that the jostle for space and privacy could overcome residents’ ability to see the hospital and themselves as one community. Therefore the building design had to be inclusive and, wherever possible, spaces had to be opened up and communal. This was to ensure that the addition of a new large building in the area would not only be as unobtrusive as possible, but that it would also enhance community-building through the design of the infrastructure.

Right from the start, the planning team actively engaged residents in the area by speaking to them to understand their concerns and adopt useful suggestions and feedback into the hospital’s design. To literally see the residents’ perspective, the planning team walked the corridors of the housing blocks opposite the hospital site.

No detail was too small and Mr Liak wanted to be involved in all decisions - from the colour of the walls to the bolts and screws that were used.

The new building had to be proportionate to the neighbouring public housing block to avoid sticking out like a sore thumb, so the numerous SOCs were divided to look like three smaller blocks from the outside. To prevent light pollution, there was minimal lighting and no spotlights above a certain height. The large lighted signs with the hospital name were placed in the direction of the Yishun Pond and the Yishun MRT station, facing away from the residential blocks. The hospital walls were also given a matte grey finish to prevent sunlight reflecting in the direction of the flats opposite.
Accessibility was a concern based on residents’ feedback, hence the hospital was designed in a barrier-free manner, such that residents could walk directly through the hospital to get to the nearby Yishun MRT station and bus interchange. The open area also had many cozy areas for people to relax, meet others and even do their homework. These elements of accessibility, comfort, and convenience made the building not just a hospital, but also an ideal space for communal activities.

It was also important to cultivate good working relationships with everyone working on the project. While the team was focused on completing the hospital to high standards, within budget, and on time, there were occasions where conflicts of interest arose with contractors and sub-contractors. Mr Liak added, “Fighting tooth and nail can sometimes get you what you want, but when you stop fighting and collaborate and listen instead, others are more willing to go the extra mile to for you.”

Creating a Hassle-free Environment

As this was the first hospital in many years to be built from scratch, the team also had to deliver on the challenge given by then Minister for Health, Minister Khaw Boon Wan, to build a “Hassle-free Hospital” with “patients unambiguously at the centre of the focus, with technology fully exploited for the benefit and convenience of patients,” and well-linked to other hospitals for seamless transfer. This would go beyond architectural blueprints and technical planning - the service objectives had to be worked into the design of the infrastructure.
“Fighting tooth and nail can sometimes get you what you want, but when you stop fighting and collaborate and listen instead, others are more willing to go the extra mile for you.”
For the new hospital to be hassle-free, it had to be designed for efficient patient flow and work processes. Navigation around the hospital had to be as intuitive and seamless as possible, with clear directions. Clinics and associated health services had to be clustered to minimise patients’ movements around the hospital. For example, an orthopaedic patient should be able to easily access X-ray services within the clinic rather than having to queue at the Radiology Centre, and the Rehabilitation Centre would also need to be located next door for easy access. This would minimise anxiety for patients who did not know where to go, and be in line with the Toyota Production System principle of reducing waste for both patients and staff.

Creating a Truly Green Hospital

The Yishun site was a green lung for the built-up neighbourhood, which made it the hospital’s responsibility to return the greenery to the area. The planning team brought the hospital-in-a-garden concept with them to the north. The design was such that the blocks would open out towards the adjacent Yishun Pond, drawing its existing nature into the hospital. The three towers were built overlooking a central garden courtyard and landscaping was integrated into the design.

The total land area of the new hospital site was only 3.4ha—one third the size of the old Alexandra Hospital. Refusing to settle for a smaller garden, the gardens went vertical. Parts of the garden were built utilising the rooftops, balconies, and strips of land along the corridors. With visions of the “Hanging Gardens of Babylon” and “Shangri-La”, the team planned for
61 balconies of potted plants, 1300m of cascading plants for the corridors, and 18 themed outdoor gardens on the different building floors, including a rooftop vegetable farm.

The goal was to reach a 100 species each of fragrant plants, medicinal plants, flowering plants, fruit trees, and native plants. It was hoped that these would attract a 100 species of butterflies and birds to the hospital grounds to add colour and birdsong to the environment. Mr Liak even challenged the gardening team to accommodate one or two durian trees.

The gardens and greenery were also planned to help the new hospital achieve its goal of minimising its impact on the environment. Six rooftop gardens lowered the indoor temperature of the facilities underneath by 1°C. This was an energy-saving benefit for a building in hot and humid Singapore where air-conditioning usually accounts for the largest proportion of an electricity bill. One of these gardens was built on top of the operating theatres. The air-conditioning system was planned so that non-recirculated cold air from operating theatres below would be filtered then pumped out into the gardens to make it cooler for patients, visitors and staff who walked through.

Solar panels were installed to heat up 21,000l of hot water every day, which is used for bathing patients and washing up at kitchen areas.

The wards were fitted with large windows for maximum daylight, reducing the need for installed lighting. Louvres on the facade blocked out direct sunlight while channeling prevailing winds right through the buildings. The natural breeze ventilated the hospital and reduced the need for air-conditioning in public areas. These green features reduced the hospital’s energy bill by 36% compared to similar-sized hospitals in Singapore.
I
n November 2006, a groundbreaking ceremony marked the start of
construction for the new hospital in the north. In May 2007, the decision
was made to name it Khoo Teck Puat Hospital (KTPH) in acknowledgement
of the $125 million donation by the estate of the late philanthropist Tan Sri
Khoo Teck Puat towards the hospital’s endowment fund.

In April 2008, the healthcare cluster called Alexandra Health System (AHS)
was established to plan, commission, and eventually run the upcoming KTPH.

Advised by Prof Leonard Berry, author of “Management Lessons from Mayo
Clinic” who wrote extensively about Mayo Clinic’s efforts in creating, extending,
and protecting their brand, the team retained “Alexandra” in the name of the
new cluster. The new AHS and KTPH logos were designed to be similar to
the old Alexandra Hospital logo, but with slight modifications. This was to
reflect that although the physical appearance, buildings and location were
changing, the organisation was retaining the essence of Alexandra Hospital
that people had come to love.

The construction period was busy for staff as they continued to run Alexandra
Hospital while simultaneously overseeing progress and problems in their
operational areas in the new hospital. Despite the flurry of activity in
preparation for the move to the north, the staff continued to provide the
best patient care possible. They were relieved when they topped the Ministry
of Health’s Patient Satisfaction Survey 2009 for the sixth consecutive year.
Patients gave Alexandra Hospital an “excellent” rating in all the categories
The Evolution of Logos

1970s to 1980s

1980s to 1990s

1990s

2000s

2010s
surveyed, including facilities available; the care, knowledge, and skills of our doctors and nurses; and whether their clinical explanations were clear enough. The score of 84.7% was even an improvement from the previous year’s high score of 83.3%.

KTPH was opened in phases. The Alexandra Hospital senior management described the process of moving as being like “two planes swapping pilots in mid-air”. Opening in phases reduced the strain on manpower when staff were testing and refining the various systems. It also eased the burden on staff who were still straddling Alexandra Hospital and KTPH, and had a responsibility to both. Services could be started without waiting for the entire building to be completed, and the remaining construction work could be monitored on-site.

Less than four years after the groundbreaking ceremony, the first areas were ready. These included the Day Surgery Centre and Tower C, which housed the SOCs and Medical Records Office.

Being a Gracious New Neighbour

One week before KTPH’s Tower C opened, Mr Liak and over 40 staff visited some 600 households within a six-block radius of the hospital. They gave pomelos to the residents to thank them for putting up with the noise and dust from the work site the past three and a half years of construction. Pomelos traditionally represent good health and fortune, and sharing the fruit is said to foster family unity. Residents were pleasantly
surprised that the staff had taken the trouble to visit them on a Saturday morning. Most were happy to have a hospital so conveniently situated in their neighbourhood.

On 22 March 2010, a tea reception was held at the lobby of KTPH as a gesture of appreciation for the more than 1,400 foreign workers who contributed to the construction of Tower C. The workers were also each given a group photo with the building as a special memento of their involvement to show to their families back home.

**Patient Care Starts at KTPH**

The hospital held an open house on 28 March 2010 to give residents and grassroots leaders a look inside Tower C and the Day Surgery Centre. The first patients were welcomed the following day. The range of SOC services included a Women’s Clinic, which the organisation had not offered at Alexandra Hospital.

Meanwhile, work continued on the A&E, inpatient wards and ICU. They were ready three months later, but in the true *genchi genbutsu* spirit, the senior management, staff, and volunteers had a ‘sleepover test” in the wards before patients were admitted. The stay-in experience gave them deeper empathy and a patients’ perspective, highlighting details that required further fine-tuning. They tested everything—whether the doors creaked, whether there were cracks in the walls, whether the toilets flushed properly. For the staff, it was a once-in-a-lifetime experience. In one instance, they did the
“Royal Flush”, where they loaded all the toilet bowls with toilet paper and flushed them all at the same time, to test whether the system could withstand the peak hour load when the hospital was fully operational. This exercise led to the discovery of some choking problems that the contractors could rectify on the spot. The devil was in the details, such as adding more clothes hooks in the bathrooms, or using plants outside the wards to prevent strangers from peeping in. No detail was too small for the hospital, as it was mindful that even minor alterations could have a huge impact on patients’ experience.

We had a *kampung*-style celebration on 25 June 2010 as a symbol of our entering a new village in the north. Many of us stayed overnight, testing out the beds, toilets, showers and kitchen food. Early the next morning, I took a walk around the hospital and took a photograph at 6.57am. It was quiet and tranquil, a contrast to the joyous laughter the night before. It was a new beginning, a new dawn. What was once an empty piece of land, drawings on paper, dusty scaffoldings on concrete walls, were now gently reflected in the still waters—almost silently saying “I’m here.” In that moment, I asked “what kind of hospital are you going to be?” The buildings were silent. As if they were waiting for an answer... from me. From us. From those who will live and walk through its hallways; for they will determine if this will be a hospital with integrity, one that truly cares and walks alongside patients and their families, one that nurtures and builds generations of healthcare workers. Then someday, someone will stand on the same spot, ask the same question, and the old crumbling buildings will silently say, “A great hospital,”

− A/Prof Pang Weng Sun
KTPH opened its A&E, inpatient wards, ICU and Major Operating Theatre (MOT) on 28 June 2010, three months ahead of the original opening target of September. Its surgical specialties now included neurosurgery, head and neck surgery and hand and microsurgery. But it was the General Surgeons who received the first case in MOT. By the end of the first day, the A&E had seen 112 patients, exceeding the projected number of 50 patients. The first patient to arrive at the A&E on opening day was Mdm J. She was about to go on a long vacation when acute appendicitis struck. The surgeons operated on Mdm J and she was well enough to be discharged the next day and go on her trip. On returning from her holiday, she sent a thank-you card to the hospital, “My stay at the hospital was a very memorable one. Thank you once again for this wonderful experience—an unlucky day turned lucky after all.”

The progressive handing over of wards, clinics and the A&E culminated in a nostalgic ceremony to pass the physical hospital at Alexandra Road to another healthcare cluster, JurongHealth. The simple but memorable ceremony was held in the Alexandra Hospital auditorium, where Mr Liak addressed the audience for the last time in his capacity as the CEO of Alexandra Hospital, before handing over his 10-year-old office key to Mr Foo Hee Jug, CEO of Jurong Health Services. Mr Foo presented Mr Liak with a saga tree sapling, representing the spirit of collaboration between the two teams during the transition.

In keeping with the hospital’s heritage as a British Military Hospital, a “Changing of the Guards” parade was held, where Alexandra Hospital’s uniformed staff symbolically transferred the responsibility for the patients of Alexandra Hospital to the JurongHealth team, through representative items handed over to the JurongHealth uniformed groups.
One of the parade participants was Nurse Manager Ms Manjit Kaur, who had worked in Alexandra Hospital for more than 30 years. “I was very honoured to be invited to participate in the parade. Alexandra Hospital is where I spent my youth. It was like a second home to me. There was great pride in representing the hospital, and it was also an emotional experience,” she shared.

A New Beginning

On 15 November 2010, the new KTPH was officially opened by the late Minister Mentor Lee Kuan Yew. This was a great honour as KTPH was one of the two hospitals opened by Mr Lee, along with the new SGH in 1981.

During his speech, Mr Lee congratulated the architects and the hospital planning committee for the well-designed hospital, which “does not have the antiseptic look”. He emphasised the need to actively push healthcare forward through continuous innovation to tackle the challenges of an ageing population. He also urged healthcare institutions to engage the community to create healthy living environments through active outreach, and cited KTPH’s efforts in building strong networks with the community to promote health. As a gesture of appreciation, the Chairman of Alexandra Health System, Ms Jennie Chua, presented Mr Lee with a calligraphy scroll while 'Chief Gardener' Ms Rosalind Tan gave him a large basket of organic vegetables that had been harvested from the rooftop farm.
Now that KTPH was open, the organisation could expand its focus beyond the hospital and into the community to see what it could do to keep residents well to prevent them from becoming patients at the hospital.
The pond provides a peaceful environment for residents and a cool breeze for patients staying in the overlooking wards.
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To help make exercising fun, hospital staff made stationary bicycles that squirt pond water when cycled at speed.
Parallel to the development of the physical infrastructure of KTPH, the team had already begun to re-examine the way AHS addressed the needs and conceptualised a new model of care for the healthcare cluster.

This was in response to the changing population demographic and disease patterns in Singapore. Mr Liak and A/Prof Pang, now the CMB of KTPH, led various planning sessions over several weekends, involving clinicians, nurses, allied health professionals and administrative staff. They discussed and debated ways to deliver quality and affordable healthcare in a hassle-free way.

The resulting conclusion was that current healthcare is not healthcare, but “illness care”. This meant that each patient was not seen as a holistic individual, but rather as a combination of many body parts. Over-specialisation and sub-specialisation caused medical care to be episodic and compartmentalised.

**Head-to-Toe, Lifelong Anticipatory Healthcare**

The new model that AHS came up with could be described as “head-to-toe, lifelong anticipatory healthcare of the whole person.” It required a fundamental re-examination of almost all the roles and functions in healthcare. Rather than follow the traditional model of care where a patient sees several different specialists to treat different health problems, a more coordinated approach would be adopted.
The resulting conclusion was that current healthcare is not healthcare, but “illness care”. This meant that each patient was not seen as a holistic individual, but rather as a combination of many body parts. Over-specialisation and sub-specialisation caused medical care to be episodic and compartmentalised.
This model of care had been used successfully at the Diabetes Centre in Alexandra Hospital where the specialists, diabetes nurses and allied health professionals such as podiatrists and dietitians worked together in the same location. This resulted in hassle-free care for patients as they could easily flow between healthcare professionals. It also facilitated communication and information flow between the healthcare professionals to ensure well-coordinated patient care.

The Diabetes Centre continued this model of care at KTPH. It was concurrently practised by the Geriatric Centre which offered a one-stop healthcare service for patients over 65. Doctors, nurses, rehabilitation therapists, social workers and pharmacists worked together to address the elderly patients’ physical, mental and social well-being. As surgery for the elderly is prone to complications, a transdisciplinary approach was taken to ensure coordinated care. Before surgery, dietitians counselled the elderly patients to build up their nutritional status and physiotherapists helped them improve their fitness to help them recover faster from surgery.

Early mobilisation after surgery by the inpatient physiotherapists became part of the care plan. This team care approach has resulted in lesser complications and earlier discharges, which is better for patients physically and financially.

The main focus of healthcare was on treating the sick, yet complications of chronic diseases usually take years to develop. Not enough was being done to anticipate and uncover health problems of individuals before they fell ill and to address medical problems of old age. For example, an obese 55-year-old patient is often at high risk of hypertension and diabetes. If these conditions are not well-controlled, more health problems can be predicted, including blindness, kidney disease and heart disease. But the risks of such
life-changing complications can be reduced by preventive measures such as losing weight to prevent the onset of diabetes and high blood pressure and health screening. If hypertension and diabetes are diagnosed and managed well, the risk of serious complications can be greatly reduced.

Managing Healthcare Holistically

KTPH realised that if they wanted the community to live healthily, they would have to be role models themselves. This had to be in all aspects, including workplace health, environmental health, and public health. The concept of “health-promoting hospital” centres on five pillars of health—exercise regularly, eat wisely, be happy, stop smoking, and practise good hygiene.
Case Study Mindful Eating

In the FoodFare canteen, managed by NTUC, mindful eating is encouraged and rewarded. Calorie estimates of common food options are displayed, so that customers can make more mindful choices. This is a useful feature when deciding between a laksa sauce or clear soup yong tau foo. Healthier food choices are promoted through pricing. For example, white rice is more expensive than brown rice, and the regular flavoured drinks are more expensive than the calorie-free ones. Choice architecture at the mixed rice stall puts vegetable dishes before meats.

In addition to personal health, civic responsibility and environmental health is also promoted. The FoodFare tray-return initiative encourages customers to clean up after themselves. Customers who wish to take away their food can bring their own containers or pay for disposable take-out boxes, which are made of biodegradable materials, rather than
styrofoam. FoodFare has established itself not just as a hospital canteen, but also as a dining option for the residents in the area.

Near FoodFare, outside the Pharmacy, there is a life-sized BMI Wall as a quick health benchmark that is easily used and understood by the public. Anyone who wants to use it need only know their weight. By standing at their weight indicated on the x-axis of the graph, a person’s height would give an immediate indication whether their BMI was low, moderate, or high risk, by the traffic light colour-coding of green, amber, or red respectively. Those who do not know their weight but would like to measure it can use the free weighing machine located at the Health Corner section of the FoodFare canteen. The weighing machine also offers a printout of the measurements, including height, weight, and BMI.

The new hospital adopted the Yishun Pond and integrated it as a natural extension to the garden. KTPH worked with the national water agency, PUB, the National Parks Board, and the Housing Development Board to create a healing and relaxing environment for residents. A barrier-free lakeside promenade was built to connect the hospital’s central courtyard to the garden around the pond, and the footpath around the pond was upgraded and benches for rest and reflection were installed. The footpath has a circumference of exactly 1km, making it a perfect jogging track and giving the hospital a chance to spread its intergenerational health promoting messages among the patients and Yishun residents. It is also used for the staff Fitness Challenge, an annual test of physical fitness to help staff gauge their progress in staying healthy.
Marshlands were created along the shore to soften the water’s edge and improve the water quality by filtering pollutants with aquatic plants. The marshlands also enhanced biodiversity by attracting wildlife. Plants and shrubs were cultivated around the spillway and pump house to hide ugly infrastructure. With the refinements emerged a beautiful environment that encouraged staff and residents to exercise.

An 84m overhead bridge connects the pond to Yishun Park, located across the road. The connector has a three-storey lookout tower designed to resemble a butterfly in flight. The lookout tower has a 94m barrier free ramp that offers a panoramic view of the pond. The pond is also overlooked by the foodcourt, enticing some people to bring their food out of the air-conditioned foodcourt to enjoy the nature outside.
Fast, Cruise, Slow Medicine

The concepts of ‘Fast, Cruise and Slow’ Medicine were developed, to give the appropriate attention to each category of patients, according to their needs.

<table>
<thead>
<tr>
<th>‘Fast’ Medicine</th>
<th>Acutely-ill patients need fast diagnosis and treatment by an efficient team e.g. Road traffic accident victims.</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Cruise’ Medicine</td>
<td>Patients with chronic illnesses need systematic and proactive care-plans to manage the disease(s) and prevent or delay complications over a long period of time, e.g. Diabetes care.</td>
</tr>
<tr>
<td>‘Slow’ Medicine</td>
<td>For the elderly and patients with advanced illnesses, the focus is on appropriate goal-setting in managing the illnesses, instead of rushing into multiple separate investigations and treatments e.g. Dementia care</td>
</tr>
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A patient may start off requiring ‘Fast’ medicine then move onto ‘Cruise’ and ‘Slow’ Medicine depending on the stage of their illness. For example, a patient who is rushed to hospital after a stroke needs immediate treatment to seal the burst blood vessel in the brain. Once the patient is stabilised, they require ‘Cruise’ Medicine to monitor and manage their blood cholesterol and weight. They will also require ‘Slow’ Medicine to help them rehabilitate to regain their function.
Realising the Vision for Seamless Care

The completion of KTPH marked the first step in realising the vision of an integrated and holistic healthcare cluster in the north. It provides ‘Fast’ Medicine and is the anchor hospital of the cluster, well equipped to take care of the critically ill. The ageing population has contributed to the complexity and number of diseases per patient, resulting in a demand for beds in acute hospitals that exceeds the available supply. However, after a patient’s condition has stabilised, they may not be truly well enough to go home and manage their illness.

One year after opening, KTPH had one of the highest bed occupancy rates among public hospitals in Singapore and there was a great need to relieve the pressure on beds. Health analytics and hot-spotting were used to identify patterns of frequent readmissions to the hospital as this contributed to the high demand for subsidised beds. It turned out that a particular group of 300 patients had an average of 3.6 admissions per patient per year, and was taking up a total of 7,900 bed days over a six-month period. Many of their readmissions could have been prevented if they or their families had adequate after-discharge care support within their homes. These patients were affectionately termed “Frequent Flyers”.

New services were set up to address the problem. The Ageing-In-Place Programme (AIP) and Transitional Care Service (TC) aim to provide medical and health-social care beyond the walls of the hospital, tapping onto social support
and community partners to keep discharged patients, especially Frequent Flyers, from having unnecessary readmissions.

Under AIP, AHS attempted to address the gaps in these patients’ support framework. The team identified Frequent Flyers by their hospital utilisation patterns, mapped out where they lived within the Nee Soon South and Sembawang Group Representation Constituencies (GRCs), and made home visits to interview and observe for lapses in care continuity.

The community nurses were empowered to develop care plans for patients and remain as the single point of contact for these patients. They identified areas of strain and provided relevant care plans to address clinical needs such as proper wound care, adherence to medication prescriptions, home-based rehabilitation and dietary routines; environmental needs such as unsafe home environments and home modifications required; and social needs such as financial assistance, activation of community resources, caregiver training, and befriending for lack of companionship.

The TC Service is a sister programme to AIP, for patients with complex but stable conditions who can be discharged but still require short-term follow-up care. These patients are cared for in the comfort of their own homes for up to three months, following which their care will be handed over to a community care provider or the AIP team. TC patients are typically elderly in their 80s, ranging from post-operative surgical patients to those with congestive cardiac failure, diabetes, and stroke.

As the two services developed, greater integration occurred between the two teams, and they now function as a single team called AIP Community Care Team. To date, 6,000 patients have benefited from the programme and the
hospital has seen an average reduction in patients’ length of hospitalisation of about four days.

At the same time, Community Nurse Posts (CNPs) were established to reach older residents in the heartlands and to make the nurses a more visible and accessible source of help for preventive healthcare services. Community nurses are stationed at 13 CNPs in Sembawang and Nee Soon GRCs to provide basic health services such as blood pressure and blood sugar monitoring, and geriatric assessments. Their findings and emergent trends are shared with grassroots leaders to develop community-based health activities. The nurses also counsel and give basic health education to residents, referring them to community organisations if necessary.

In November 2013, the AIP Programme was awarded Gold at the Public Service PS21 ExCEL Awards in the category for Most Innovative Project/Policy. It then went on to win top honours at the United Nations Public Service Awards 2014, making it the first public healthcare programme to be conferred the award as a first place winner (Asia and the Pacific) in the public service improvement and delivery category. Notably, no second place was awarded in the same category. The UNPSA globally awards public sector projects that promote sustainable development, eradicate poverty and make a difference to the lives of citizens.
Bridging Care between Hospital and Home

Meanwhile, bed occupancy remained very high at KTPH. Some patients who were stabilised were well enough to leave the acute setting, but not yet ready to be left unsupervised. These patients were traditionally sent to Ang Mo Kio-Thye Hua Kwan Hospital for sub-acute care and rehabilitation.

In August 2013, construction began on Yishun Community Hospital (YCH) to bridge care between KTPH and home. It was built next to KTPH with link bridges between the two for easy transfer of patients. It began receiving its first patients on 28 December 2015.

With that, the fast, cruise, and slow model of care was taken to the next level—building infrastructure offering different levels of care in various facilities by segmenting patients based on their needs. Each facility would focus on delivering fast, cruise, or slow medicine, and they would be linked through the integrated healthcare cluster of Alexandra Health System.

The 428-bed YCH is not a nursing home. It provides rehabilitation or sub-acute care such as wound care management to patients, who stay between two to four weeks. This is the embodiment of ‘Slow’ Medicine, Dr Pauline Tan, CEO of YCH explains, “We treat our patients as we would our loved ones. YCH bridges care from hospital to home and continues to extend support to patients even after they leave the hospital. We want to ensure our patients cope well and stay well to prevent complications and readmission.”
Patients do not stay in bed. They get active and busy. Besides participating in various ward activities such as table tennis, horticulture, pet therapy, they learn new skills in paper quilling and drawing sessions. Reading corners are also set up in every ward to promote reading and enabling patients to gain new knowledge.
Care focuses on helping rehabilitation patients regain their independence so they can manage well when they go home. Patients are encouraged and supported to do as much for themselves as possible, such as bathing and making hot drinks while lunch and dinner are served in a communal dining room. The wards have been designed with balconies and mini gardens to encourage patients to walk around.

Patients do not stay in bed. They get active and busy. Besides participating in various ward activities such as table tennis, horticulture, pet therapy, they learn new skills in paper quilling and drawing sessions. Reading corners are also set up in every ward to promote reading and enabling patients to gain new knowledge.

YCH also involves the community in getting its patients better. A group of volunteers come down every week to tend the rooftop garden while others provide hair and nail-cutting services for patients, perform lunchtime music and engage patients in book-reading through a library on wheels. Among its volunteers are young children from The Little Skool-House located at KTPH. These children engage in simple cooking and arts and craft activities with the patients every Tuesday. This is weaved into the school’s formal curriculum. The children bring liveliness to the wards and much joy to the patients. As the young and old spend quality time together and bond, the children also learn from the elderly and better understand their needs through this initiative.

Patient care is individualised and personalised, be it rehabilitative, sub-acute, dementia or palliative care. Each patient is managed by a multidisciplinary team of doctors, therapists, nurses and dietitians to help them recover and regain as much of their pre-illness functions.
Addressing patients’ psychosocial needs is important too and staff are empowered to personalise care. A palliative patient had neglected his body image as his illness advanced. During a therapy session, he mentioned that he wished he could colour his hair. The occupational therapist bought hair dye for him and helped him colour his hair in the ward, much to his delight. He passed on a few weeks later after his wish was fulfilled.

Mr Heng had a traffic accident and was treated at KTPH before being transferred to YCH for rehabilitation. During a discussion with the doctor, the 65-year-old revealed that he used to love drawing when he was a teenager but he stopped doing so in his twenties so he could focus on work. The doctor asked Mr Heng to draw a picture as part of his therapy and gave him some paper and pencils. He took up the challenge. “The staff were surprised by how well I could draw and I was encouraged to produce more drawings,” says Mr Heng. Picking up drawing again after more than 40 years has given the former patient a new lease of life. He is now a member of the hospital’s Evergreen Club, an initiative to help former patients socialise and network with one another.

Providing Truly Meaningful Healthcare

While KTPH promoted healthy living within the hospital grounds, more was needed to bring wellness to the community. Keeping the residents well and healthy was a priority.
To healthcare professionals, being healthy means being free of disease and symptoms. In contrast, residents consider being able to eat well, sleep well, and move about independently as markers of health. Dr Wong Sweet Fun, a Senior Consultant in Geriatric Medicine and Chief Transformation Officer of AHS, wanted to understand what good healthcare meant to them.

To be relevant, the AHS community engagement team sought to uncover the underlying attitudes and mindsets of the average elderly residing in the north, so as to discover their needs and opportunities.

A special ethnographic study, “Project Orange”, was also initiated by the AHS’s healthcare innovation and research team in the Chong Pang community from April to October 2015. A quarter of the residents who lived there (26.4%) were aged 55 and above, giving the team clear indications of how the future could be like with Singapore’s ageing demographic.

Many of these residents were the original residents from the kampungs before the development of public housing (HDBs). They had “grown old” in the Chong Pang neighbourhood and experienced the changing landscape from the original businesses (hardware, household items, groceries, clothing, hairdressing) to new transient pop-up stores selling mass market personal devices, lifestyle accessories, maid services and tuition centre aids which catered to younger families. They had also seen singles shifting in from other parts of Singapore, in response to housing and employment opportunities, bringing in a new culture. Significant disconnect existed with the original resident community, leading the neighbourhood to lose its social cohesion.

With retirement came diminishing roles and opportunities to be seen and heard in their heartland community, leaving many seniors, especially males,
to feel collectively lost in the community space, leading to pre-mature ageing. However, they still desired to participate, be valued and supported in their old age, relying on the design of their communal spaces to create such opportunities for common roles and interests.

The Wellness Kampung initiative was conceived in late 2014 when AHS was given the opportunity to develop three new wellness centres. The centres were to be co-located with a senior care centre each in Nee Soon GRC, under a collaboration that would involve three parties: People’s Association (PA), St Luke’s ElderCare (SLEC) and AHS. According to Law and Foreign Affairs Minister K Shanmugam, Member of Parliament for Nee Soon GRC, to encourage ageing in place instead of ageing in long-term care homes, Singapore needs “step-down care, long-term care and also wellness centres in the community, where people need a bit of help but they do not necessarily need to go to hospital and the nurses can come down if they do not need intense intervention.”

The three centres are sited at the void decks of HDBs and differentiated by their block numbers, e.g. Wellness Kampung @ 260 Nee Soon East, Wellness Kampung @ 115 Chong Pang and Wellness Kampung @ 765 Nee Soon Central.

The co-located senior wellness and care centres were developed based on the concepts of Ibasho Café, Ray Oldenburg’s concept of a “third place”, and “principles of the commons”—a commons-based participatory approach by experts, organisations and public. This was envisaged to be the neighbourhood gathering space, to meet the needs of local residents, in consultation with them.

The Wellness Kampung space is designed to be flexible, to be adaptable to the activities held there. There is little differentiation between the inside and
the outside of the space, creating an open invitation for residents and casual passers-by to peer curiously into the place, see people and activities, and to linger a while. The best outcome for these centres would be confident, resilient self-management communities, supported by a responsive healthcare system.

Since the start of operation in April 2016, the three Wellness Kampung centres have served more than 900 residents through its various healthy lifestyle programmes. Activities address the residents’ physical and social wellness and include daily work-outs, cooking demonstrations, computing, conversational English and calligraphy. Health screening and intervention programmes to prevent falls are also included but they are part of the Wellness Kampung offerings rather than being the focus.

Most of the activities are ground-up activities, with “teacher volunteers” arising from among the residents. Among them is Aneesa, a 45-year-old housewife. “I always knew I should exercise but I never got around to it. When the Wellness Kampung opened at the bottom of my block offering daily exercise classes, I had no excuse!”, shared Aneesa.

She signed up for the weekly Theraband classes. When the Sport Singapore instructor finished his 12-week session, she volunteered to take over. Aneesa says, “I have more energy now and feel much healthier. I’ve lost 4kg from exercising and using tips from the dietitian’s healthy cooking sessions.” Aneesa has met other residents from neighbouring blocks at the Wellness Kampung and people who were once strangers are now her friends.

The programming is deliberately organic and flexible with little formal organisation, allowing residents to contribute their skills. Over six months, 45 residents came forward to volunteer. They celebrated festivals together,
with the “celebrant race” as hosts, cooking their traditional dishes to share with the rest. The initiative was officially launched on 15 September 2016.

Another community-based frailty prevention programme was Share-A-Pot. It is founded on the principles of good nutrition, working hand-in-hand with physical activity in a social environment to “build bones, brawn (muscle) and brain (cognitive reserve) and bonds (social engagement and reciprocity),” explained Dr Wong Sweet Fun.

Vulnerable seniors in the neighbourhood are identified and encouraged to drop in at these sites for a hearty bowl of soup (high in protein and calcium). Before or after doing so, they are encouraged to participate in physical activity of sufficient intensity. These activities are held in social spaces for them to linger on to chit chat or engage in leisure activities.

Participants are registered with the centre to form an informal social security network. In the event that a regular does not turn up, concerned neighbours and friends can keep a look-out for them and extend assistance. They also have preliminary and regular periodic physical, functional and psycho-social assessments. Any decline can be picked up for early attention and intervention.

To date, 13 sites are active, with about 900 registered and 500 regular seniors. Ultimately, Share-a-Pot hopes to kindle a sense of community and create local communities that give and receive.

The CNPs, Wellness Kampung and Share-A-Pot form a network of communal spaces where seniors can gather and support each other in improving their health and fitness, as they define it.
Expanding Infrastructure to Meet Demand

While KTPH provides the north’s ‘Fast’ Medicine and YCH and the Wellness Kampung provide ‘Slow’ Medicine care, the upcoming Admiralty Medical Centre (AdMC) and Sembawang Primary Care Centre will support the region’s ‘Cruise’ Medicine needs.

Mr Liak explained that ‘Cruise’ Medicine simply put, is “assembly line medicine.” These are high volume, multidisciplinary repetitive cases such as cataract surgeries and endoscopies as well as the management of chronic diseases such as diabetes. AdMC is due to open in the third quarter of 2017. It will focus on endoscopies and non-complex eye, hand and ENT day surgery. The Diabetes Centre will move from KTPH to AdMC where it will partner with general practitioners to provide multidisciplinary specialist services to residents with diabetes.

The medical centre will take up two floors of Kampung Admiralty, a mixed development that integrates healthcare, community wellness and elder living in the heart of Admiralty.

Plans are also underway to build a new primary care service at the future Sembawang Sports and Community Hub. The centre will be located close to facilities like a sports complex and a hawker centre to provide a one-stop service for residents. The centre will be a test bed for new care models and care processes.
The population is continuing to expand in the north of Singapore and age. AHS is planning a new healthcare development to meet the anticipated increased demand for healthcare services.

The Woodlands Integrated Health Campus will be an integrated healthcare facility that will include an acute hospital, a community hospital and a nursing home. In line with the AHS vision and mission of taking care of the population in the north, this facility will be the first of the four new acute hospitals which the Ministry of Health had earlier announced it would build.

The acute and community hospitals and nursing home will provide some 1,800 beds in total. The development is targeted to open progressively from 2022, continuing the AHS vision of creating a holistic healthcare system that provides the right care, at the right time, and in the right location.
More than 45 residents now volunteer at the three Wellness Kampung centres, leading exercise classes, cooking sessions and other healthy activities.
Chapter Bibliography


Other information and data provided by Alexandra Health System.
Epilogue

On 18 January 2017, the Ministry of Health announced that Alexandra Health System would merge with the National Healthcare Group. This is part of an island-wide reorganisation of healthcare clusters to better optimise resources and capabilities, and provide more comprehensive and patient-centred care to meet Singaporeans’ evolving needs.

While the name “Alexandra Health System” will cease to exist when the merger is completed in early 2018, the spirit that sustains our drive and innovation to help our people live a long and healthy life will remain. This is our commitment. We will continue to walk alongside our patients and members of the community to live well, age well, cope well and support them with thoughtful dignified care to the end.
Awards

2001
ISO 9001:2000 & 14000 Certifications

2002
ASEAN Energy Efficiency Award
Family Friendly Firm Award certificate of merit
ISO 18001 (OHSAS)
Outstanding Innovation and Quality Circles (IQC) Organisation
People Developer Standards Singapore
PS21 Organisational Excellence
Singapore Environmental Achievement Award
Singapore Health Award (Gold)
Singapore Quality Class

2003
Golden Plungers Award 2003
Singapore Health Award

2004
H.E.A.L.T.H Leader Excellence
H.E.A.L.T.H Promoter Award
Singapore Family Friendly Employer Award
Singapore H.E.A.L.T.H Award (Gold)

2005
1st in MOH Patients’ Satisfaction Survey
Building And Construction Authority Award - Green Mark Gold
Hazard Analysis And Critical Control Points Certification (HACCP) for Kitchen
Inaugural Community in Bloom Award
JCI Accreditation
SHARE Platinum Award
Singapore HEALTH (Helping Employees Achieve Life-time Health) Platinum Award
Re-certification of People Developer Systems (PDS) Award

2006
1st in MOH Patients’ Satisfaction Survey
Hazard Analysis And Critical Control Point (HACCP) Award
Minister for Health Award
Renewal of Singapore Quality Class
Singapore HR Awards
Strong Believer Award (Job Recreation Programme Awards)
Work-Life Achiever Award

2007
1st in MOH Patients’ Satisfaction Survey
ISO Reaccreditation
JCI Accreditation
Lifelong learner award

2008
1st in MOH Patients’ Satisfaction Survey
Community in Bloom Award (Best Community Garden)
Community in Bloom Award (Platinum Award for the Community)
Inaugural AARP International Innovative Employer Awards
MOM Work-Life Achiever Award
Singapore Human Resource Institute for Leading HR Practices (Fair Practices Employment) Award

2009
1st in MOH Patients’ Satisfaction Survey
BCA Green Mark Platinum Award

2010
1st in MOH Patients’ Satisfaction Survey
Community in Bloom Award (Platinum Award for the Community)
SIA-NParks Skyrise Greenery Awards - First Prize
2011
11th Singapore Institute of Architects (SIA) Design Award for Healthcare Facility and Building of the Year Award
2011 - International Health Project (over 40,000m²)
BCA Universal Design Award – Gold Award
BCI- FutureArc Green Leadership Award
Design & Health International Academy Award
FutureGov Awards 2011
Healthcare Organisation of the Year
JCI Accreditation
Landscape Industry Association (Singapore) Gold Award and Best of Category (Implementation, Commercial);
NTUC 50 Model Partnership Award
President’s Design Award 2011 - Design Award
Silver Award (Turnkey) for Yishun Pond
Singapore Institute of Architects Building of the Year 2011
Singapore Institute of Architects Design Award for Healthcare Facility 2011

2012
1st in MOH Patients’ Satisfaction Survey
Best Contact Centre Awards 2011 - Judges’ Special Mention Award for Best Community Support
Nanyang Polytechnic - Outstanding Industry Partner Award
Singapore Health Award (Platinum)

2013
Global Healthy Workplace Award 2013 (Large Enterprise)
Most Innovative Project / Policy award (Gold), PS21 Excel Awards & Convention 2013 - Ageing-In-Place (AIP) Programme
National Parks Board’s Landscape Excellence Assessment Framework (LEAF) - Certificate of Recognition for development projects with outstanding greenery
Public Service Medal, National Day Awards 2013 – Mr Liak Teng Lit, Group Chief Executive Officer, Alexandra Health System

2014
1st in MOH Patients’ Satisfaction Survey
14th CCAS International Contact Centre Awards – Silver Award, Best In-House Contact Centre (20-100 Seats)
BCA Green Mark Platinum Award for Yishun Community Hospital (YCH)
Community Chest Platinum Award
HIMSS Asia Pacific EMR Adoption Model (EMRAM) Stage 6
Joint Commission International (JCI)
Meritorious Service Medal Award, National Day Awards 2014 – Ms Jennie Chua, Chairman, Alexandra Health System
NTUC Medal of Commendation Award (Gold)
PUB Water Efficient Building (Hospital Sector) - Gold Certificate
The President’s Award for Nurses 2014
Work-Life Achiever Award

2015
1st in MOH Patients’ Satisfaction Survey
PUB Watermark Award

2016
Community Chest Platinum Award
Community In Bloom Diamond Award
Chapter 2

Workload Decline Over The Years

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Manpower Cost per Discharge in 1999 ($)

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Alexandra Hospital Statistics

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<td>Average Length of Stay (Days)</td>
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<td>5.8</td>
<td>5.9*</td>
<td>6.2*</td>
<td>6.3*</td>
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*Paediatrics closed w.e.f. 1996
Chapter 3

At point of restructuring, an accounting firm Ernst & Young was appointed by MOH to estimate the loss.

Projected Loss ($m)

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Alexandra Hospital Statistics

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<td>Average Length of Stay (Days)</td>
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<td>5.21</td>
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All data provided by Alexandra Health System.
## Annex B

**Book Recommendations by Alexandra Health System**

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<th>No.</th>
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<td>1</td>
<td>7 Habits of Highly Effective People</td>
<td>Stephen R Covey</td>
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<td>2</td>
<td>A Life in Error: From Little Slips to Big Disasters</td>
<td>James Reason</td>
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<td>3</td>
<td>Appreciative Inquiry in Healthcare</td>
<td>Natalie May, Daniel Becker, Richard Frankel, Julie Haizlip, Rebecca Harmon, Margaret Plews-Ogan, John Schorling, Anne Williams &amp; Diana Whitney</td>
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<td>4</td>
<td>What Killed My Dad?: Are Hospitals Safe?</td>
<td>Lee Soh Hong</td>
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<td>5</td>
<td>Better: A Surgeon's Notes on Performance</td>
<td>Atul Gawande</td>
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<td>6</td>
<td>Built to Last: Successful Habits of Visionary Companies</td>
<td>Jim Collins, Jerry I Porras</td>
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<td>7</td>
<td>Change By Design: How Design Thinking Transforms Organizations and Inspires Innovation</td>
<td>Tim Brown</td>
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<td>8</td>
<td>Change or Die: The Three Keys to Change at Work and in Life</td>
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<td>The Checklist Manifesto: How to Get Things Right</td>
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<td>Complications: A Surgeon's Notes on an Imperfect Science</td>
<td>Atul Gawande</td>
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<td>11</td>
<td>Conscious Culture: How to Build a High Performing Workplace through Leadership, Values, and Ethics</td>
<td>Joanna Barclay</td>
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<td>12</td>
<td>Do Nothing!: How to Stop Overmanaging and Become a Great Leader</td>
<td>J Keith Murnighan</td>
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<td>13</td>
<td>Drive: The Surprising Truth About What Motivates Us</td>
<td>Daniel H Pink</td>
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<td>14</td>
<td>Escape Fire: Designs for the Future of Health Care</td>
<td>Donald M Berwick</td>
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<td>Firms of Endearment: How World-class Companies Profit from Passion and Purpose</td>
<td>Rajendra Sisodia, David Wolfe &amp; Jagdish N Sheth</td>
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<td>16</td>
<td>Finding Allies, Building Alliances: 8 Elements that Bring - and Keep - People Together</td>
<td>Mike Leavitt &amp; Rich McKeown</td>
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<td>17</td>
<td>Good to Great: Why Some Companies Make the Leap... and Others Don't</td>
<td>Jim Collins</td>
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<td>18</td>
<td>Grateful Leadership: Using the Power of Acknowledgment to Engage All Your People and Achieve Superior Results</td>
<td>Judith W Umlas</td>
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<td>19</td>
<td>Heart, Smarts, Guts, and Luck: What It Takes to Be an Entrepreneur and Build a Great Business</td>
<td>Anthony K Tjan, Richard J Harrington &amp; Tsun-Yan Hsieh</td>
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<td>Heroic Leadership: Best Practices from a 450-Year-Old Company That Changed the World</td>
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<td>The Innovator’s Prescription: A Disruptive Solution for Health Care</td>
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<td>23</td>
<td>Mastering Communication with Seriously Ill Patients: Balancing Honesty with Empathy and Hope</td>
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<td>24</td>
<td>Medicine in Translation: Journeys with My Patients</td>
<td>Danielle Ofri</td>
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<td>25</td>
<td>Outliers: The Story of Success</td>
<td>Malcolm Gladwell</td>
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<td>Patients Come Second: Leading Change by Changing the Way You Lead</td>
<td>Paul Spiegelman &amp; Britt Berrett</td>
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<td>Risk Savvy: How to Make Good Decisions</td>
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<td>28</td>
<td>Service Fanatics: How to Build Superior Patient Experience the Cleveland Clinic Way</td>
<td>James Merlino</td>
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<td>29</td>
<td>Social Physics: How Good Ideas Spread - The Lessons from a New Science</td>
<td>Alex Pentland</td>
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<td>30</td>
<td>Switch: How to Change Things When Change is Hard</td>
<td>Chip Heath &amp; Dan Heath</td>
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<td>31</td>
<td>Talent is Overrated: What Really Separates World-Class Performers from Everybody Else</td>
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<td>32</td>
<td>The Cleveland Clinic Way: Lessons in Excellence from One of the World's Leading Health Care Organizations</td>
<td>Toby Cosgrove</td>
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<td>33</td>
<td>The Leader, The Teacher &amp; You: Leadership Through the Third Generation</td>
<td>Siong Guan Lim &amp; Joanne H Lim</td>
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<td>34</td>
<td>The Spirit Catches You and You Fall Down: A Hmong Child, Her American Doctors, and the Collision of Two Cultures</td>
<td>Anne Fadiman</td>
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<td>35</td>
<td>The Spirit of Kaizen: Creating Lasting Excellence One Small Step at a Time</td>
<td>Robert Maurer</td>
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<td>36</td>
<td>The Toyota Way: 14 Management Principles from the World's Greatest Manufacturer</td>
<td>Jeffrey K Liker</td>
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<td>37</td>
<td>The World Is Flat: A Brief History of the Twenty-first Century</td>
<td>Thomas L Friedman</td>
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<td>38</td>
<td>The Zero-Waste Lifestyle: Live Well by Throwing Away Less</td>
<td>Amy Korst</td>
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<td>39</td>
<td>Think Like a Freak</td>
<td>Steven D Levitt &amp; Stephen J Dubner</td>
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<tr>
<td>40</td>
<td>What Doctors Feel: How Emotions Affect The Practice of Medicine</td>
<td>Danielle Ofri</td>
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<td>41</td>
<td>Winning</td>
<td>Jack Welch &amp; Suzy Welch</td>
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</table>
Doing more of the same is not a viable option. The team needs to chart new paths where none currently exist.

- Mr Liak Teng Lit

We must accept that what used to work for healthcare will not serve us in the future as Singaporeans age and their needs change. The data is obvious and it would be foolish to be caught unprepared when that happens.

The Little Hospital That Could chronicles the transformation of Alexandra Hospital and the development of a healthcare cluster over nearly two decades. Be inspired by the visionary leaders, accounts of selfless teams that went above and beyond their duties in times of crisis, and stories of ordinary individuals empowered to dream big about what healthcare could be.

The Little Hospital That Could is an invitation to share the commitment to serve the people, build resilient teams, and develop holistic solutions that tackle today’s complex challenges head-on.

Providing care good enough for our own mothers, without the need for special arrangements.