

From left: Mr Foo Hee Jug, CEO of JurongHealth; Ms Grace Fu, Minister, Prime Minister's Office, Second Minister for the Environment and Water Resources and Second Minister for Foreign Affairs; Madam Kuttiammal Sundarasan, Director of Nursing of JurongHealth; Dr Amy Khor, Minister of State for Health and Manpower; Madam Halimah Yacob, Speaker of Parliament and MP for Jurong GRC; Mr Gan Kim Yong, Minister for Health; Mr Tan Tai Soon, Director of Hospital Planning, JurongHealth; Dr Lam Pin Min, Chairman, Government Parliamentary Committee for Health.
 PHOTO: JURONGHEALTH



'One queue, one bill'

The seamless and integrated system of two new hospitals in the JurongHealth cluster takes the stress off patients and their caregivers

Ahmad Osman

JURONG Health Services (JurongHealth) is on track to open the integrated Ng Teng Fong General Hospital (NTFGH) and Jurong Community Hospital (JCH) in December next year and June 2015 respectively.

Construction of NTFGH, which will have 700 beds, is now at Level 2 of the eight-storey Clinic Tower and Level 7 of the 16-storey Ward Tower.

Work is in progress on the first floor of the 12-storey 400-bed JCH building.

Patient care processes, infrastructure plans, manpower mapping and community engagement are key components in the planning and development of the hospitals.

Their innovative processes and new job scopes match the infrastructure with the needs of patients, caregivers and the community in the west of Singapore.

The integrated design and development of NTFGH and JCH take the stress off patients with multiple conditions and their caregivers who may be working.

Both hospitals, close to Jurong East MRT station, bus interchange, retail and entertainment hubs, are an integral part of the Jurong Lakeside District Masterplan.

JurongHealth was formed four years ago as the health-care cluster in the western part of Singapore and assigned to plan, design and build NTFGH and JCH. Its chief executive officer, Mr Foo

Hee Jug, says: "Planning, designing and building the two new hospitals at the same time allowed us to plan an integrated patient's journey across the acute and community hospital settings while fully maximising opportunities to share substantial support services."

— Mr Foo Hee Jug, chief executive officer, JurongHealth

Hee Jug, says: "Planning, designing and building the two new hospitals at the same time allowed us to plan an integrated patient's journey across the acute and community hospital settings while fully maximising opportunities to share substantial support services."

"With the integrated concept of co-locating NTFGH and JCH, we are able to achieve the seamless one queue, one bill and one patient experience at the



A collection of art pieces, themed "A Picture of Health" which will take pride of place in the new hospitals' community art spaces, is the work of 100 participants from St Luke's ElderCare and 10 schools in the west. PHOTOS: CHONG JUN LIANG

two new facilities."

This fuss-free and hassle-free system will streamline on the same day, if possible, a visit involving multiple disciplines or varied tests.

This saves travel time and money for patients, especially those who need to be accompanied by their next of kin, who may have to rush back to the office.

So, a patient visiting a specialist out-

patient clinic will have only one queue number regardless of the different service points on the day of the visit.

The patient can pay just once at the end of the visit or pre-register for cashless visits to avoid multiple payments at different points.

Patient service coordinators (PSCs) are the key contacts whom patients can coordinate appointments with and di-

rect their general enquiries to.

Regular patients will be reminded to go for health checks and preventive diagnostic tests by the PSCs who will provide their name cards with their mobile numbers and e-mail addresses.

These cards can be very reassuring for patients and their next of kin, says JurongHealth's assistant chief operating officer for service operations, Mr Ng Kian Swan.

"They know there is always someone they can turn to when they need help and support," he adds.

Wards in NTFGH and JCH are shaped like fans so that there is a window for every bed for patients to have a view, better privacy and ventilation.

New built-in features provide air filtration if the naturally ventilated wards are affected by the haze from the neighbouring areas of Indonesia.

Consultation rooms in specialist outpatient clinics have a dual swivel computer screen for clinicians to retrieve relevant patient information or patient education resources.

Engagement between clinicians and their patients will improve because they can discuss what they see on the computer screens.

The Emergency Department has a system to ensure the responsiveness of the physical infrastructure to different emergencies.

Modular resuscitation units in the critical care zone of the department can be swiftly transformed into an emergency room with state-of-the-art fittings for trauma cases.

These modular trauma rooms can double in size to accommodate a larger multi-disciplinary trauma team.

JurongHealth will expand its team of close to 3,000 people and recruit an additional 1,100 staff for the opening of NTFGH in December next year.

Tracking the progress of the hospital's infrastructure are job seekers who want to work close to their homes in the western part of Singapore.

A community outreach event at Jurong Gateway Road on July 27 highlighted the main features of the two hospitals.

Live mock-ups of key patient care areas, community art pieces, health screenings and a recruitment drive were the highlights of the event, where Health Minister Mr Gan Kim Yong was the guest of honour.

The art pieces based on the theme 'A Picture of Health' currently depicted on the hoarding along Jurong Gateway Road will be displayed in the community art spaces at NTFGH and JCH, when they are up and running.

Selected old photographs and stories of Jurong contributed by the community will be up on the two hospitals' Jurong Memory Wall.

JurongHealth's new OneHealth quarterly magazine will reach out to more than 200,000 households, businesses and partners in the west of Singapore.

It will provide updates on the progress of the two hospitals and tips on how to stay healthy, Mr Foo says, adding: "We have also started involving the community in co-creating the new hospitals with art pieces created by them to build a sense of community pride and ownership."



A multi-disciplinary trauma team simulating the convertibility and flexibility of the trauma-ready rooms at the new Emergency Department.

Innovative and unique

JurongHealth demonstrates out-of-the-box thinking in the design of its hospitals that promise holistic care for patients

Narendra Aggarwal

IN SINGAPORE'S fast changing health-care sector, Jurong Health Services (JurongHealth) is at the forefront with innovative and avant-garde health-care models resulting from out of the box thinking and adopting the latest techniques and methods in the field.

As a young organisation, it has the advantage of being nimble and quick on its feet to roll out new models of health care, new processes, new blueprints and infrastructure layouts that will make patient care seamless, integrated and hassle-free.

Focused on serving the community in the west of Singapore, JurongHealth currently manages Alexandra Hospital and Jurong Medical Centre, and is building the new Ng Teng Fong General Hospital (NTFGH) and Jurong Community Hospital (JCH).

Located to open in end-2014, NTFGH will be a 700-bed hospital that will be twinned with the 400-bed JCH, which is due to open in 2015, to provide holistic integrated care. The two hospitals are an integral part of the Jurong Lakeside District Masterplan, with easy access to public transport services – located near Jurong East MRT Station and Jurong East Bus Interchange.

"We will continue our focus on patient-centred care at Ng Teng Fong General Hospital and Jurong Community Hospital.

From infrastructure to hospital processes to building a caring culture, we will put forth our best to provide seamless and integrated care for our patients," says JurongHealth's chief executive officer Foo Hee Jug (right).

"To achieve this, we have been piloting new models of care starting at Alexandra Hospital and Jurong Medical Centre.

"Moving forward, we will continue to step up our preparations to ensure timely opening of Ng Teng Fong General Hospital and Jurong Community Hospital – hospitals that will serve the health-care needs of our community in the west."

The co-location of the two hospitals enables us to effectively integrate processes and services for patients, and when we open, it is our aim that we can offer patients a seamless journey across the acute and community settings.

— Ms Joanne Yap, chief operating officer, JurongHealth

"We have started planning our move to the Ng Teng Fong General Hospital and Jurong Community Hospital, which are shaping up distinctively," adds Ms Joanne Yap (left), chief operating officer of JurongHealth.

"The co-location of the two hospitals enables us to effectively integrate processes and services for patients, and when we open, it is our aim that we can offer patients a seamless journey across the acute and community

It is about integrating care and moving away from illness care to health care by empowering our patients to manage their conditions and for the general community to stay healthy.

— Associate Professor Cheah Wei Keat, chairman of JurongHealth's medical board



settings. This close proximity also enables us to maximise shared support services including digital archival services for medical records, supply logistics, food services, as well as resources such as training facilities. This will translate into a more cost-efficient operation and through this, we can contribute to making good health care affordable."

A distinctive health-care provider

JurongHealth has pioneered an Integrated Care Pathway (ICP) that sees a multi-disciplinary team of doctors, nurses, physiotherapist, nurse clinician and case manager caring for patients with Chronic Obstructive Pulmonary Disease (COPD).

The ICP for COPD programme aims to pull together all the relevant partners in the different care settings to provide coordinated and integrated care across the whole spectrum that covers education, prevention, screening, early detection and treatment.

What is unique about JurongHealth's ICP is the introduction of a case manager who will actively monitor and track the progress of the patients to ensure follow-up even after the patients are discharged. The COPD programme will therefore be designed around the needs of the patients to ensure they get the right care, at the right place, and at the right time.

"It is about integrating care and moving away from illness care to health care by empowering our patients to manage their conditions and for the general community to stay healthy," says Associate Professor Cheah Wei Keat, chairman of JurongHealth's medical board.

"To do so, it requires us to work with various stakeholders to be able to bring together everything the patient needs into an ecosystem. A well-collaborated effort within this ecosystem will ensure patients get the best care at the right place and at the right time."

Similarly, within Alexandra Hospital there is in a Multi-Disciplinary Care (MDC) clinic, where multi-disciplinary care teams see patients with overlapping conditions.

A common one involves diabetic patients who may also be suffering from a foot condition. Besides consulting a doctor, they can also see a po-

diatrist for their foot condition at the same clinic. Other conditions that the MDC sees include Pain and Renal Service.

Recently, Alexandra Hospital was named the "Most Improved Hospital" in the Customer Satisfaction Index of Singapore (CSISG) 2012.

The CSISG, which measures customer satisfaction across all sectors and sub-sectors, saw Alexandra Hospital leap frog into top position in the health-care sub-sector for Restructured Hospitals.

Improved design, better care

An example of JurongHealth's out of the box thinking can be seen in the design of NTFGH, where the wards are innovatively located in a fan-shape – breaking away from the norm.

This revolutionary design, which provides a window for every patient, is expected to significantly improve ventilation in the ward as well as maximise natural light.

"Our nurses are all very excited to care for patients at the new wards in Ng Teng Fong General Hospital and Jurong Community Hospital," says JurongHealth's director of nursing, Mdm Kuttiammal Sundarasan (above).

"The unique, fan-shaped wards will not only provide more comfort for our patients, it will also be more conducive for our nurses to deliver care. With more space to move around and better ventilation, the health-care staff who need to perform bedside procedures will find it more convenient."

Another area that has received special attention is in providing better emergency care in the Accident and Emergency (A&E) department.

NTFGH's A&E department is designed for faster patient care, shorter waiting time, and is scalable to accommodate an anticipated increase in patients if the need arises.

It integrates its functional and spatial relationships to optimise resources, cut wastage and promote efficient and effective workflow processes.

A reassuring touch

Patients visiting the Ng Teng Fong General Hospital's Specialist Outpatient Clinic can look forward to a hassle-free experience and personalised attention from patient service coordinators

Celine Lim

FIRST-TIME visitors to the Specialist Outpatient Clinic (SOC) building at the Ng Teng Fong General Hospital (NTFGH) will be impressed by the ease to navigate the building.

To ensure that visitors feel comfortable with basic navigation from the minute they approach and enter the SOC facility, the hospital provides good navigation tools and cues to aid them in successful decision-making and clear recognition of pathways and destinations.

Mr Ng Kian Swan, assistant chief operating officer (Service Operations) of Jurong Health Services (JurongHealth), says: "Ensuring patients and visitors feel comfortable with basic navigation from the minute they approach and enter the facility not only reduces stress and frustration, it also communicates to everyone who enters the structure that the facility is organised and professional."

"During the design phase, way finding support was seamlessly integrated into the building design with facility amenities supporting signage, well-thought-out nomenclature, a user-friendly room numbering system, electronic directories and maps designed especially for the unique needs of our patients and visitors."

In addition, our patient service coordinators (PSCs) are always around to provide assistance to

our patients. A happy, smiling face would always greet our patients and visitors and assist them in the arrival process."

Sterling service quality

The role of a PSC was newly created as part of a larger effort to ensure an environment "where patients feel that caregivers truly care about them", says Mr Ng.

PSCs play an important role in ensuring that patients get a seamless and hassle-free experience when visiting multiple service providers. They will inform patients and their caregivers about what to expect during their visit in plain, clear language, and include references to factors such as waiting times and what will happen from the time they arrive until they are seen by a doctor.

Other duties include coordinating and arranging multiple appointments for patients, reminding patients to go for preventive screenings and eye screening.

All PSCs will be issued name cards, printed with their email addresses and mobile numbers, to give to patients.

"This is very reassuring for patients as they know there is someone they can turn to for help and support when needed," says Mr Ng.

Ms Chong Li Ting, one of NTFGH's future PSCs, shares that the most rewarding aspect of her job is being able to bring convenience to patients and make them feel at ease.

"A PSC needs to have patience and good listening skills to empathise with a patient's difficulties. I believe that by acknowledging a patient's concerns and worries, I can reassure them when they visit our hospital," says Ms Chong.

"Every interaction with the patient is an opportunity for caring, support and compassion. I

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— Mr Ng Kian Swan, assistant chief operating officer (Service Operations) of JurongHealth



PSCs will give patients information about waiting times, tests and screenings.

PHOTO: CHONG JUN LIANG

would need to ensure that whatever I do must produce 'value' for our patient, eliminating all sources of waste like unnecessary waiting.

"I am glad that I am given the encouragement and support to look for ways to improve every aspect of our services at every touch point and how we can better serve our patients and visitors."

Key improvements

"As part of our service delivery, our colleagues are encouraged to proactively engage our patients and visitors and look into ways to delight and wow them. The key to our approach is to design the end-to-end patient experience accordingly at every touch point to exceed their expectation," says Mr Ng.

Some of the initiatives implemented include making information available more consistently, improving access options, following up on phone calls, serving beverages, snacks and fruits via the "Happy Cart", and paying attention to details like offering blankets to patients who are

feeling cold.

"These innovative ideas came from the ground up and we empowered our colleagues to do what's right for our patients," he adds.

Other innovations to turn the SOC into a "self-contained, one-stop centre" include comprehensive outpatient services easily accessible in one location and more efficient surgical, diagnostic and treatment services located under one roof. Spatial and infrastructure modularity was also a key design concern. In addition, a "One Queue number concept" will provide a smoother and hassle-free experience for patients moving from one facility to the other, thus enabling them to receive care which is efficient, seamless, comfortable and accessible.

"Our goal is to provide excellent patient care through personalised service, good communications, service coordination and attention to the individualised needs of patients and their families in a pleasing environment where the latest technology and human touch come together for a better experience," says Mr Ng.

Jurong Community Hospital (JCH)

- 12 levels
- 400 beds (11% Private, 89% Subsidised)

LEVEL 1: Admission and JCH Specialist Outpatient Clinics
MEZZANINE LEVEL: Clinical and Administrative Space
LEVEL 2 & 3: Private Wards
LEVEL 4 TO 12: Subsidised Wards

Ng Teng Fong General Hospital (NTFGH)

WARD TOWER

- 16 levels
- 700 beds (25% Private, 75% Subsidised)
- 28 Intensive Care Unit beds and 42 High Dependency beds
- 15-bed Isolation Ward next to Accident & Emergency Department
- 18 Operating Theatres

LEVEL 1 TO 4: Diagnostics & Treatment
LEVEL 5 TO 10 (WEST WING): Private Wards
LEVEL 5 TO 16 (EAST WING): Subsidised Wards

CLINIC TOWER (SPECIALIST OUTPATIENT CLINIC)

- 8 levels
- Training Centre
- Auditorium
- Diagnostic services
- Satellite pharmacies on clinic floors

LEVEL 1: Training facilities (including an auditorium) and Diagnostic Imaging services
LEVEL 2: Pre-admission testing, Medical Social Services and Retail
LEVEL 3 TO 7: Specialist Outpatient Clinics (120 consultation rooms)
LEVEL 8: Administration space

PHOTOS: JURONGHEALTH

PHOTOS: JURONGHEALTH

Green health-care hub

Ng Teng Fong General Hospital and Jurong Community Hospital have environmentally friendly features and sustainable designs that won them the Building Construction Authority's (BCA) Award

Hazel Tan

WHEN Ng Teng Fong General Hospital (NTFGH) and Jurong Community Hospital (JCH) open in December 2014 and June 2015 respectively, they are expected to save more than \$5 million in electricity bills and close to another \$100,000 in water bills annually.

The two hospitals' green features, environmentally friendly and sustainable designs have won them the BCA's Green Mark Platinum Award, the highest rating for green buildings in Singapore. The award is given to exemplary green projects that effectively demonstrate 30 per cent energy and water savings, as well as environmentally sustainable building practices and innovative green features.

Jurong Health Services (JurongHealth), the health-care cluster managing the two hospitals, says with careful spatial planning, the two hospitals will be able to optimise energy, save water, and incorporate sustainable strategies that allow for continual improvement to create an eco-friendly and healing environment.

"Our focus on patient-centred designs has led us to incorporate several features such as fan-shaped wards with windows at every bed to improve ventilation, careful tower orientation and shading for optimal day lighting while reducing glare, extensive high-rise and low-rise landscaping, for our new hospitals," says Mr Tan Tai Soon, JurongHealth's director of hospital planning.

"It is certainly gratifying that, while these features were introduced for patients' well-being, they also contribute towards sustainability which enabled the project to win the BCA's Green Mark Platinum Award," he adds.

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27 Olympic-sized swimming pools

The hospitals are designed to use approximately 40 per cent less potable water than a conventional hospital in the region.

100 per cent of the irrigation water demand is met through non-potable water. Irrigation of landscapes will be predominately provided by harvested rainwater. Water required for the operation of the cooling towers in the air-conditioning system, on the other hand, will be fully provided by NEWater.

By using recycled water, the hospitals will save about \$100,000 per year. The amount of water saved is about 68,350cu m, enough to fill 27 Olympic-sized swimming pools.



By incorporating energy-efficient products in the hospitals, as much as 20,829,902 kwh energy worth more than \$5 million, will be saved in a year.

447 solar panels

About 2,000 sq m of roof area will be fitted with solar photovoltaic panels, which will supplement the hospitals' electricity needs. NTFGH will have 174 panels and JCH, 273. These solar photovoltaic panels will provide energy required for landscape lighting.



100 per cent of domestic hot water supply in the hospitals will be provided by solar thermal systems.

1 window for every patient

Wards are designed and configured to optimise day lighting and natural ventilation, minimising reliance on electricity-intensive lights and fans during the day.



There will be a window for every patient in the 700-bed NTFGH and the 400-bed JCH. This feature improves lighting, ventilation and provides an external view towards lush greenery and landscape, contributing to a calm and restful environment that will help in the healing process of patients. It also offers patients a sense of connection with the community, achieved by the clever use of integrated community space within the hospital and the facilities and parks nearby.

4,000 five-room HDB flats

Incorporating renewable energy features such as photo sensor lighting that automatically switches off in bright daylight into its hospitals will save about 5,484 kwh annually. This is sufficient to power up nearly 4,000 five-room HDB flats in a year.



There are 15 gardens in the two hospitals to provide patients with a healing environment. Patients, staff and visitors can make use of the large public space in the Community Wellness Park with an overall theme of "health and fitness". The Sunrise Garden will be a green space to be enjoyed by ambulatory patients and visitors of the hospital. Patients at the JCH can make use of the Mobility and Safety Park for rehabilitation purposes. There is also lush greenery on Level 1 (Jelutong Walk), Level 3 (Roof Deck Garden) and Level 4 (Koi Pond Garden) of JCH.

On track to be an integrated healthcare hub

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