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'Humble Beginning, Promising Tomorrow', aptly sums up the transitional years and milestones of the National Healthcare Group Polyclinics' (NHGP) journey. As the healthcare landscape in Singapore evolves over time, the focus on primary care slowly takes shape.

Today the pivotal role of primary care is endorsed with increased funding by the government and ongoing education to the public, commanding a paradigm shift in the way family medicine is perceived. And rightly so at a time when Singapore is moving towards an ageing population, with an increasing load of patients with chronic diseases.
It is critical for us to help transform the primary care model and disrupt our current care processes innovatively in order to manage the rapidly increasing load and help ease the bottleneck faced at polyclinics. This will translate to better care and shorter waiting time for our patients, and more importantly, for us to better integrate with the hospitals and other partners to provide more cost effective treatment for the patients.

The adoption of Electronic Medical Notes (eNotes) takes shape from this notion of collaborative care. The basis of going ‘paper-less’ is to encourage a seamless sharing of patients’ medical records across various facilities, and aligns NHGP with the national vision of building a National Electronic Health Records (NEHR) system. This perhaps becomes more crucial in the care of chronic diseases, where time and resources are not compromised since patients’ records can be easily accessed by other medical counterparts.

As much as technology has freed our staff to focus more on value-added services and helped improve safety standards, it should not be a means to an end in what we do. Fundamentally, our work processes have to be lean and structured. Only then, technology would become an enabler to better our workflow.

At NHGP, we stress on four key areas that shape a patient’s service experience. They are: easy accessibility to care, streamlined processes, shorter waiting time and affordable services. We constantly address the changing needs and profiles of patients, and introduce patient-centric solutions. The integration of care and team-based model are examples of our ongoing efforts.

However, with growth comes a host of challenges at the ground that requires meticulous attention and strategic solutions. One of these areas is our increased workload. Over the years, our patient load has grown exponentially with acute cases on the rise. We are also seeing more complex chronic cases which require multi-pronged treatments by our healthcare team. Our resources have therefore been stretched to meet these new demands.

Talent retention is another area we grapples with as human resource is influenced by varying options in the healthcare employment. It is our hope that with the ‘spotlight’ now on primary care, we will be able to attract and retain a wider pool of talents, who have the potential and passion to help realise our Vision of Advancing Family Medicine and Transforming Primary Healthcare. Our manpower is the heartbeat to what we do. As such, we must strive to always have conviction in our staff and support them at all times to encourage and inspire team spirit and progression.

As we celebrate our 10 years of achievement, we must take a moment to reflect on our past, present and what the future holds. While challenges may have been rooted from the early days, its magnitude has changed with times. Albeit being distributed in nine distinct locations, our people are bound together by our ‘True North’ - which is ‘adding years of healthy life to the people of Singapore’, our deliverables to the public we serve and the pivotal role we play in promoting a healthy community.

I would like to take this opportunity to remind the staff of NHGP that we are driven by our Mission to serve the people of Singapore and are therefore held accountable and responsible for how this is achieved and delivered.

‘Humble Beginning, Promising Tomorrow’ - and so marks our journey of progression, built on a foundation of team spirit, change and commitment to serve.

Mr Leong Yew Meng
Chief Executive Officer
National Healthcare Group Polyclinics
Our Management Team
1. Dr Simon Lee - Head, Yishun Polyclinic
2. Dr Tung Yew Cheong - Head, Toa Payoh Polyclinic
3. Dr Lim Chee Kong - Head, Hougang Polyclinic
4. Ms Chan Soo Chung - General Manager, NHG Pharmacy
5. Dr Tang Wern Ee - Head, Clinical Research Unit
6. Ms Jancy Mathews - Deputy Director, Nursing Services
   (Acting Director, Nursing Services till October 2010)
7. Dr Keith Tsou - Head, Bukit Batok Polyclinic
8. Ms Chen Yee Chui - Director, Nursing Services
9. Ms Winifred Lau - Deputy Director, Operations Support Services
10. Ms Grace Chiang - Chief Operating Officer
11. Dr Elaine Tan - Deputy Director, Clinical Services
12. Dr Wei Wei Keong - Director, Health Promotion and Preventive Care
13. Dr Angelia Chua - Senior Family Physician
   (Head of Yishun Polyclinic till July 2010)
14. Dr Chang Phui-Niah - Director, Family Medicine Development / Primary Care Academy
15. Dr Evan Sim - Deputy Chief Medical Information Officer;
    Head, Clementi Polyclinic
16. Dr Yehudi Yeo - Head, Choa Chu Kang Polyclinic
17. Dr Lim Fong Seng - Senior Director, CEO’s Office
18. Mr Leong Yew Meng - Chief Executive Officer
19. Dr Lew Yi Jen - Director, Clinical Services
20. Dr Gowri Doraisamy - Head, Woodlands Polyclinic
21. Dr Karen Ng - Head, Ang Mo Kio Polyclinic
22. Dr Meena Sundram - Head, Jurong Polyclinic
23. Ms Yeo Loo See - Deputy Director, Nursing Services
24. Mr David Kok - Deputy Director, Finance
25. Mr Simon Tan - Director, Human Resource & Finance
26. Mr Ang Wee Hon - Manager, Corporate Planning
27. Dr Jonathan Phang - Chief Medical Information Officer;
    Deputy Director, Clinical Services
28. Ms Yan Yan - Assistant Director, IT Operations
29. Ms Joelle Lee - Deputy Director, Dental Division
30. Dr Joseph Soon - Director, Dental Division
31. Ms Adeline Chang - Assistant Director, Corporate Communications
32. Mr James How - Assistant Director, Clinic Operations
33. Ms Joanne Chia - Assistant Director, Quality Management Office
34. Ms Pamela Ding - General Manager, NHG Diagnostics

We also acknowledge the contributions of the following management staff who have left NHGP:
Dr Jason Cheah (Chief Executive Officer till December 2009); Dr Wong Kirk Chuan (Director, Operations till November 2009); Dr Hwang Chi Hong (Director, Quality Management Office till March 2010); Ms Doris Liew (Director, Nursing Services till July 2010); Mr Tan Lai Hong (Deputy Director, Operations till September 2009); Mr Ong Hong Beng (Head, Human Resource till September 2010); Ms Carmelia Poh (Manager, Strategic Planning Office till October 2009).
"We have always loved outings as a family."

– Dr David Tan, Family Physician, Jurong Polyclinic
Today while we are spoilt for choice when deciding where to go, the contentment of being together as a family has not changed.

While options in patient care have become more varied, with a wider suite of services, the need to keep patients happy remains.
Achieving Clinical Excellence
– A Wealth Of Integrated Services At Your Convenience
Quality patient care should be an efficient and seamless experience. The Team-Based Care delivery model is rooted in the understanding that various care providers may be needed to meet the different facets of holistic care for patients with chronic disease. To optimise care, patients need to be equipped with the knowledge and skills to manage their lifestyles and diet, take care of their mental and emotional well-being and understand their diseases, medications and treatment goals.
Achieving Clinical Excellence

Provide Clinical Care as a Team to Meet Multiple Patient Needs

The Team-based Care delivery model has thus resulted in the integration of care from multiple healthcare professionals, including doctors, advanced practice nurses, care managers and allied health professionals such as physiotherapists, psychologists, dietitians, clinical pharmacists, and medical social workers. There are plans in the near future to integrate case managers into our teams to coordinate care of patients with complex medical or care needs and help them navigate the healthcare system.

Team-based Care paves the way for NHGP to realise its vision of true integrated, patient-centred care. For patients, this translates to an embracing, effective and efficient care support system.

Our doctor and nurse working together to review patients’ multiple needs
Integrating with Hospitals to Provide Continuum of Care

Continuity of patient care is a fundamental concern across healthcare institutions in Singapore. Without a concerted effort to integrate care delivery systems, patients may end up losing valuable consultation and treatment time, and money. Ideally, the goal is for a patient to be given the right treatment, at the right healthcare provider (polyclinic, specialist outpatient clinic (SOC), community hospital or rehabilitation centre) and at the right time.

This vision of care integration and collaborative efforts is being supported by NHGP in the following areas:

i) Encouraging a hassle-free transfer of patients from hospitals to polyclinics so the level and consistency of care is not compromised. Currently patients discharged with heart failure, stroke, asthma, diabetes and osteoporosis can enjoy the seamless after-care.

ii) Categorising referrals to the hospitals into emergency, urgent and non-urgent cases, so a system of prioritising is in place. This ensures that those who need immediate attention are first in line, and not lost in an endless session of queuing.

iii) Improving the accessibility of specialised services at SOCs. For example, patients at Jurong Polyclinic requiring a treadmill test can do so without having to see a Specialist before the test. This saves them time and money from unproductive process. Similar arrangements are made for Gastroscopy between our polyclinics at the central region and Tan Tock Seng Hospital. NHGP also hopes to establish direct referrals for other specialised services including Colonoscopy, Intravenous Urogram (IVU) and Bone Mineral Density (BMD).
Tele-Care Service: The Future of Healthcare

As technology guides us through a new era of communication and work processes, we are developing Tele-Care services for patients who find it easier to receive medical attention in the comfort of their homes. The suite of services under Tele-Care is varied. Patients with chronic diseases will be encouraged to measure and track their health parameters such as blood pressure, glucose levels and weight using home monitoring devices and transmit readings to polyclinic teams via telecommunication. Telephonic reviews may replace long clinic waits for some patients, who will be able to interact with their care managers or allied health partners from home.

Partnering with General Practitioners (GPs) to Care for Patients with Chronic Diseases

Since 2007, NHGP has been collaborating with GPs through the Adjunct Family Physician (AFP) Scheme to provide personalised care for patients with chronic diseases, as well as to mentor junior doctors in NHGP. But we believe that the partnership can be expanded further to bring greater benefits to patients.

Using a 3-pronged approach, we hope to enhance this strategic partnership by:

1) Sharing the Increasing Chronic Disease Patient Load in Singapore
   Through the expanded AFP Scheme, well-trained GPs (with post-graduate Family Medicine diploma or degree) attend to chronic disease patients at NHGP’s Family Physician clinics as AFPs. With patients’ agreement, they can now continue their follow-up consultations with these patients at their private clinics. In light of Singapore’s ageing population, the Scheme allows for these AFPs to help manage the increasing number of chronic disease patients in their ‘satellite clinics’. The expanded AFP scheme was launched in Ang Mo Kio Polyclinic in October 2010 and will be rolled out to the other polyclinics in the near future.

2) Providing Support Services to GPs to Complement Chronic Care
   NHGP aims to support GPs with multi-disciplinary services such as nurses and allied health expertise so as to help them provide comprehensive care to their patients. The diagnostics facility at NHGP offers special lab test/x-rays rates to patients who are referred by the GPs. Also, the Pharmacy department is pipelined to offer multi-dose packaging service for GPs starting 2011. This will go a long way in encouraging patients’ medication compliance.

3) Sharing Expertise and Expanding Capabilities
   In coming together for the patient’s well-being, NHGP and GPs can expand their reach and expertise in the primary care industry. Experienced GPs are invited to speak at public forums and engaged to train junior doctors at polyclinics. NHGP is also partnering GPs to oversee GDFM (Graduate Diploma in Family Medicine) and MMed (Master of Medicine) mock examinations.
HDL-Clinic: Helping Patients to Optimise Their Medication

HDL (Hypertension, Diabetes & Lipids Disorder)-Clinic, the first pharmacist-led chronic disease management clinic in Singapore, was piloted in Bukit Batok Polyclinic in October 2007 and subsequently launched in Clementi and Choa Chu Kang Polyclinics in December 2008 and June 2009 respectively. As statistics showed, diabetes, hypertension, lipid disorders and stroke affect one million Singaporeans. The HDL-Clinics’ clinical pharmacists therefore work in collaboration with doctors, nurses and other allied health professionals to combat the growing burden of these chronic diseases.

Patients who attended the HDL-Clinic have shown improvements in the three clinical parameters (HbA1c, blood pressure and low-density lipoprotein (LDL)). Clinical pharmacists at the HDL-Clinic counsel and help patients with poorly controlled conditions on drug optimisation, titration of medication and education on the medication they are taking.

Top 5 Leading Conditions seen at NHGP

<table>
<thead>
<tr>
<th>Condition</th>
<th>2008</th>
<th>2009</th>
</tr>
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<tbody>
<tr>
<td>Gastro-Enteritis</td>
<td>3%</td>
<td>2%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>5%</td>
<td>9%</td>
</tr>
<tr>
<td>Diabetes Mellitus</td>
<td>11%</td>
<td>11%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>13%</td>
<td>13%</td>
</tr>
<tr>
<td>Upper Respiratory Infection</td>
<td>16%</td>
<td>19%</td>
</tr>
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</table>
"The feeling of scoring for the team has always been sweet."

~ Mr Ismee Eideal Shastrie, Senior Executive Assistant, Operations Support Services
Today while the play has become more professional, the satisfaction of working as a team and celebrating a win has not changed.

While job title and scopes may have taken on a new form, the importance of teamwork to achieve group successes remains.
“I have always loved the convenience of shopping at my doorstep.”

— Mr. Joseph Ong Ah Yee, patient volunteer of Toa Payoh Polyclinic
Today while the aisles have modernised and become more elaborate, the ease and familiarity of shopping near home has not changed.

While our polyclinics have become more organised to give our patients a hassle-free visit, the ease and personalised attention we provide remains.
Operational Efficiency
– Improving Internal Processes For External Benefits
The focus on improving work efficiencies translates to direct benefits for both patients and ground staff. The improvement in work processes and IT systems enables staff to work more productively and patients to enjoy more pleasant and seamless visits.

Improvement activities such as LEAN are frequently used to redesign work processes and IT systems to reduce “waste”. The implementation of LEAN principles as a key management instrument strives to align NHGP with the standards it has set. Introduced in 2008, the LEAN Task Force and LEAN Faculty were formed to set the direction for NHGP and facilitate the execution of LEAN initiatives.

A good example of using LEAN to improve efficiency is the following case study at Jurong Polyclinic’s laboratory.
Improving Efficiency at the Lab

Jurong Polyclinic’s laboratory during late 2008 had poor feedback on service and waiting time. Both patients and staff were less than satisfied with its services, thereby demanding an urgent to improve the situation.

A team comprising staff from the clinic and HQ was therefore put together to improve its efficiency, led by Dr Tung Yew Cheong, Head of Toa Payoh Polyclinic. Following four intensive days of analysing the situation using LEAN techniques, the team drew its conclusions:

The Problems
1) The Patient Service Associates (PSAs) at the counter had to juggle between processing payments, registering patients and calling out queue numbers on the Patient Management & Patient Accounting (PMPA) system. Having to process payments for certain groups of patients also disrupts the registration process.

2) As the queue display board showed queue numbers for both patients with and without appointments, patients frequently disrupted the PSAs to question the order in which they were called. The queue series also had too many different categories, which complicates the queue order.

3) Workload peaked in the early morning at the laboratory as patients usually do their tests first before seeing the doctor, choking the queue further. Patients not requiring fasting blood tests can actually have their tests done after 10am, i.e. after the morning peak hours.

The Countermeasures
1) The team relieved the PSAs of the checkout duties. Patients are now all directed to the clinic’s common checkout counters.

2) Queue numbers for patients with and without appointments are displayed separately to minimise confusion and disruptions.

3) Implement an improved queue series system that condenses the existing 10 categories to six.

4) Patients are given a choice to ‘decouple’ their lab tests and consultation appointments. They can do their lab tests one week before the doctor’s appointment.

5) The medical technologist will attend to the patients immediately after their registration at the lab, in a continuous fashion rather than having to wait for their queue number to be called again.

The final results from a survey depict how these measures had improved the overall situation for both patients and staff alike.

Satisfaction comparison before/after LEAN implementation:

<table>
<thead>
<tr>
<th>Category</th>
<th>Before Intervention</th>
<th>After Intervention</th>
</tr>
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<tbody>
<tr>
<td>Patients’ Overall Experience</td>
<td>52% satisfied</td>
<td>74% satisfied</td>
</tr>
<tr>
<td>Patients’ Waiting Time</td>
<td>47 minutes at the 95th percentile</td>
<td>36 minutes at the 95th percentile</td>
</tr>
<tr>
<td>Staff’s Overall Experience</td>
<td>55% felt it was effective</td>
<td>68% felt it was effective</td>
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Electronic Polyclinic Outpatient System

The ePOS system (electronic Polyclinic Outpatient System), which is to be launched in the first quarter of 2011, is another initiative to improve operational


efficiency and safety. The robust patient management system is designed to eliminate manual processes. Its key features include:

1) Patient Relationship Management (PRM) module for better patient engagement
2) Flagging of critical clinical indicators (e.g. fall risk) to ensure patient safety
3) Improved queue and itinerary management to facilitate clinic process flow
4) Enabled interface for self-service kiosk and SMS for payment and appointment transactions
5) Automation in accounting activities such as billing, refund and report submission

**Self-payment Kiosk**

The self-payment kiosk will also be introduced in 2011 to provide an alternate mode of payment for patients at the polyclinics. It will also help to ease up the queue at the cashier.

**Interactive Web Portal**

Our interactive web portal has various modules enabled to help patients manage their appointments and particulars. The introduction of an online appointment system in April 2010 allowed patients to send in requests to make/change/cancel an appointment online with ease. Another feature was added to let patients update their personal particulars from the web portal. The user-friendly portal has offered patients great convenience and improved the communication between patients and polyclinics.

As NHGP continues to see an increase in patient volume over the years, the improvements in operational efficiency will help us manage patient flow better at the clinics and alleviate overcrowding.
"My parents knew I have always been a 'pro' behind the wheels."

— Mr John Abraham, Physiotherapist, Clinical Services
Today while my training options have been shaped by technology, the importance of having someone cheering me on has not changed.

At NHGP, while we have progressed with technology to include electronic processes, the heart that touches our patients remains.
Technological Advancements
– Engaging The Electronic Gear To Improve Work Processes

CHAPTER THREE
In an age where technology enables better communication and higher productivity, the introduction of Electronic Medical Records (EMR) is a big leap towards the easy sharing of patient clinical information to enable team-based and integrated care.
The Era of Electronic Notes

The eNotes module is the last core component of the EMR suite for NHGP’s paper-less journey, which comprises Clinician Order Entry and E-Prescribing, Results Management and Chronic Disease Management.

After a successful pilot in Clementi Polyclinic, the system was rolled out to the remaining eight polyclinics in May 2009, with full adoption in January 2010.

With the implementation of online access to clinical information, the dependence on the hardcopy medical records has become obsolete. Consultation can start as soon as the doctor and patient are ready, and there no longer exists the waiting period for the retrieval and delivery of the medical records. Manpower involved in medical record management has therefore been re-skilled and re-deployed for patient care. Storage space previously used for the filing of medical records have been converted to additional consultation rooms.

With the eNotes template in place, the mode of communication within the polyclinic healthcare team is made into a structured flow. And the module allows access to sections for significant history, problem list and the important note. Misinterpretation due to illegible handwriting is a thing of the past.

Another area where technology has improved processes is the integration with digital retinal cameras, which has enabled online viewing and reporting of our Diabetic Eye Screening Programme. The path to consultation and online reporting by our hospital eye specialists on more difficult cases is now feasible. Our efforts are in line with the green movement as routine printing of the hardcopy retinal photos is no longer necessary.

Another milestone is our eReferral module, which has helped to improve the quality, legibility and efficiency of our hospital referral letters. This is achieved
through a structured referral template and IT-assisted population of existing clinical information relevant to the referral and continuity of care of the patient.

Online access to eNotes has enabled our after-hours critical lab results duty doctors to make better informed decisions on patient management. These doctors can also document the episode and care plan online for the patient’s base polyclinic to follow-up.

These EMR projects demonstrate how NHGP has maximised technology to deliver better, seamless and integrated care to our patients.

**Digital Documentation System (DDS)**

With full adoption of electronic documentation at all our nine polyclinics, we are also moving forward with the digitisation of past patient medical records. We are now working on the last two clinics - Choa Chu Kang and Yishun Polyclinics. The digitisation project will complete by March 2011. With the digitised casenotes, doctors, nurses and allied health staff are able to access and retrieve relevant patient history seamlessly. The completion of the DDS project will mark another milestone in NHGP’s paper-less journey.

**Tele-Electrocardiography (ECG)**

The investment in the Tele-ECG introduced in Bukit Batok Polyclinic’s laboratory in 2009 supports NHGP’s case for technology in workflows. Together with other lab results, Tele-ECG results can now be accessed by doctors online, anywhere. The scene where doctors had to pore through scrolls of ECG graphs to diagnose a patient’s heart condition is a thing of the past. Prompt decision-making on treatment plans can now be made and it also eliminates the need for patients to do another ECG at the hospitals.

**Tele-Ophtalmology Service at Hougang Polyclinic**

Hougang Polyclinic collaborated with the NHG Eye Institute to bring ophthalmology service to its patients in the heartlands through tele-communications. Patients with chronic visual impairment can now have their eyes examined by the specialist through video-consultation at the clinic instead of having to travel to the Eye Institute. This improvement in service means patients spend less time travelling, and more time having their medical problems treated.
“I have **always** been a coffee lover.”

— Ms Quek Imm Pin, Advanced Practice Nurse, Ang Mo Kio Polyclinic
Today while drinking coffee has become a fancier experience, the warmth and comfort a cup of coffee brings has not changed.

As a nurse, my working environment may have evolved with time, but the basis of treating and caring for the patient remains.
Developing Talents

– An Infusion Of Training And Opportunities
At NHGP, we place our resources effectively to ensure results are delivered each time, and best practices are exercised across polyclinics. Talent at NHGP is constantly shaped and groomed so that our skills are sharpened and we can keep abreast of new demands.

2007  Introduced the first Advanced Practice Nurse (APN) in primary care.
More Advanced Practice Nurses (APNs) to the Family

We added four new APNs to our team of nurses. They are Carolyn Chan (Jurong Polyclinic), Liau Wei Fong (Clementi Polyclinic), Natasha Teo (Woodlands Polyclinic) and Quak Imm Pin (Ang Mo Kio Polyclinic). They passed the APN certification interview in August 2009 and are now certified APNs.

The team of APNs will work vis-a-vis doctors to co-manage patients with sub-optimally controlled chronic conditions.

Collaboration with Health Management International (HMI)

The Primary Care Academy (PCA) collaborated with the Health Management International (HMI) Institute of Health Sciences to train Patient Service Assistants. A total of 138 trainees were sent to PCA for their training attachment in 2009. They were rotated to various service stations in the polyclinics for three weeks during their attachment.

Outcome-based Training Journey for Doctors

NHGP's Family Medicine Development (FMD) Division launched an Outcome-based Family Medicine Training programme in May 2009. The aim was to:

- Improve and standardise the primary care training of the doctors in NHGP
- Prepare doctors for general practice with specific competencies (six ACGME competencies for doctors) and outcomes
- Develop holistic, mindful and reflective primary care doctors with excellent clinical and communication skills who are able to practise safely

The training included e-induction lectures and assessment of new doctors with training tailored to bridge their knowledge and skills gaps for them to practise independently in the polyclinics. Inter-weaved in this framework were formative assessment tools including MCQs, case-based assessments and reflective portfolio. This shift in training focus from a syllabus-based model to an outcome-based training framework helped to better equip doctors with the necessary skills set to care for their patients.

Fellowship of the College of Family Physicians (FCFP), Singapore

Dr Meena Sundram (Jurong Polyclinic), Dr Keith Tsou (Bukit Batok Polyclinic) and Dr Tung Yew Cheong (Toa Payoh Polyclinic) received the Fellowship of the College of Family Physicians (FCFP), Singapore. The rigorous 2-year Fellowship Programme provides advanced training in family medicine to develop and equip family physicians to take on leadership roles in teaching, researching and the practising of family medicine in Singapore.
Graduate Diploma in Family Medicine

10 NHGP doctors passed the Graduate Diploma in Family Medicine (GDFM) examinations in 2009. The GDFM is a structured training programme for family physicians in Singapore.

Dr Mark Lord Monally Flores
Ang Mo Kio Polyclinic

Dr Bongpaya Malia Michelle Sebeter
Bukit Batok Polyclinic

Dr Niran Ajikuttira Uthaih
Bukit Batok Polyclinic

Dr Ramos Ann Eileen Bersalona
Choa Chu Kang Polyclinic

Dr Chin Yuh Bin
Hougang Polyclinic

Dr Foo Pei Kee
Jurong Polyclinic

Dr Vittal Sunil Pawan
Toa Payoh Polyclinic

Dr Nasir Jameel Iqbal
Toa Payoh Polyclinic

Master of Medicine in Family Medicine

Four doctors of NHGP passed the Master of Medicine (Family Medicine) examinations in November 2009.

Dr Tan En-Yu
Woodlands Polyclinic

Dr Yuan Soo Hwa
Woodlands Polyclinic

Dr Cynthia Wong Sze Mun
Bukit Batok Polyclinic

Dr Zheng Mingli
Bukit Batok Polyclinic

Dr Yee Hui Nan
Jurong Polyclinic

Dr Ang Lai Lai
Jurong Polyclinic
The Singapore Disease Management and Primary Care Forum 2009

PCA co-organised ‘The Singapore Disease Management and Primary Care Forum 2009’ with the theme: ‘Person-Centred Care: Making It A Reality’. The 2-day Forum, held in conjunction with the NHG Annual Scientific Congress 2009, delivered interesting healthcare topics such as delivering quality patient care to the community and improving clinical practices. It also provided the participants with updates and insights into the primary care delivery systems and challenges faced by healthcare practitioners in UK, USA and Singapore.

A pre-conference workshop on managing common mental health problems in primary care was also held to discuss the different ways people with common mental health problems present in general practice and how they could be identified. The challenges on managing co-morbid conditions such as diabetes and ischaemic heart disease were also discussed with emphasis on interventions other than medication.

2nd Asian Primary Care Innovators Conference

In March 2009, PCA also co-organised the 2nd Asian Primary Care Innovators Conference with the Taiwan Association of Family Physicians in Taiwan. The theme of the conference was ‘Disease Management in Primary Care: The Way Forward’ and it was attended by 250 delegates from Taiwan and Singapore. The conference provided participants with the opportunity to learn from renowned speakers from Canada, Taiwan and Singapore on the management of chronic diseases such as asthma, hyperlipidaemia and gastro-oesophageal reflux disorder.

Healthcare Manpower Development Programme (HMDP) Awards 2009

The HMDP continues to motivate Singapore’s healthcare manpower capabilities. Eight NHGP staff received the HMDP Award 2009 to further their skills and knowledge.

Team-based category:

- Ms Sinaram Sarah, Dietitian (Clinical Services)
- Ms Tan Lee Lee, Senior Staff Nurse (Choe Chu Kang Polyclinic)

Dr Chong addressing the participants at the Singapore Disease Management and Primary Care Forum 2009
Medical category:

Dr Jonathan Phang,
Chief Medical Information Officer;
Deputy Director
(Clinical Services)

Dr Tan Kim Kiat,
Assistant Director
(Family Medicine Development Division);
Deputy Head
(Choa Chu Kang Polyclinic)

Dr Colin Tan,
Senior Family Physician
(Ang Mo Kio Polyclinic)

Nursing category:

Ms Aw Yang Wan Sim,
Senior Staff Nurse
(Toa Payoh Polyclinic)

Admin category:

Dr Chong Phui-Nah,
Director (Primary Care Academy /
Family Medicine Development Division)

Dr Lew Yee Jen,
Director
(Clinical Services)

Upon receiving the HMDP Awards, the recipients put into good use what they have learned to improve patient care. Examples include the HSDP funded Stroke Disease Management Programme - Integrating Services and Intervention for Stroke (ISIS), which is a collaboration between NHGP and the hospitals. Led by Dr Jonathan Phang, the programme aims to reduce adverse outcomes among stroke survivors by providing post-discharge coordinated care.

Another example is the development of mental health programme in polyclinic and the community, championed by Dr Colin Tan. As mental health issues continue to exert an increasing burden on society at large and on chronic patients in general, NHGP needs to ensure that we also take care of our patients’ mental well-being. Dr Tan therefore set up the Health and Mind Clinic to manage mental health conditions at primary care level. The Health and Mind team is made up of family physicians, care managers, psychologists and medical social workers, and they work closely to manage both the physical and mental well-being of our patients.
“The polyclinic has *always* been an important feature of my neighbourhood.”

– Mam Grace Perumal Paruathy, patient of Bukit Batok Polyclinic
Today while the polyclinic has taken on a new look with upgraded facilities, the importance of its presence has not changed.

At NHGP, we may have progressed with trends and developments to stay ahead in the healthcare industry, but our role as the people’s polyclinic remains.
Community Outreach
– The People’s Polyclinic
With all its services and best practices in place, it is vital that NHGP ensures that primary healthcare is both accessible and available to the community. The net should be cast wide to allow all Singaporeans a fair opportunity to obtain the healthcare attention they need.

**Opportunistic Health Screening (OHS)**

Despite the H1N1 outbreak in April 2009, NHGP continued its outreach to patients to provide OHS at its polyclinics. This is with an aim to help detect undiagnosed chronic conditions in patients and in turn provide early medical intervention. Using a computerised health screening software and protocolised approach, each screenee received a personalised health screening report instantaneously and was counselled by a nurse regarding his health risk factors.

From April 2009 to March 2010, NHGP provided OHS screening to more than 19,000 patients.

**Health Screening in the Community**

Over the last year, NHGP established collaborative relationships with eight community wellness centres to provide health screening services to the residents. Working through NHGP’s polyclinics and with the help from staff volunteers, more than 6,000 residents were screened in 2009.
“Echos of their laughter have *always* filled the air.”

— Mdm Jamilah Bte Yusof,
patient of Clementi Polyclinic
When visiting the newly upgraded Bukit Batok Polyclinic, its premises may have changed, but the warm greetings from staff remain.

Today while playgrounds offer more interesting options, the sounds of laughter has not changed.
Upgrading Facilities
– Swinging The Polyclinic Experience
As patients' needs become more sophisticated with time, the role of the polyclinic transforms accordingly. The patient’s experience of visiting the clinic should be marked by ease in mobility and reach of services. It is with this intention in mind that spurred NHGP’s polyclinics to undergo a transformation.

2006 | Started systematically upgrading our facilities, beginning with Jurong Polyclinic.
Upgrading of Bukit Batok Polyclinic

Bukit Batok Polyclinic underwent a major facelift from May to August 2009. When it finally reopened its doors, the polyclinic made history for being the first primary care institution to use eNotes to record consultations. With doctors, nurses and allied health professionals going online with their medical observations, the structured and improved patient experience at Bukit Batok Polyclinic has set the bar for other polyclinics to emulate.

The improved polyclinic also prompted staff roles and resources to be re-aligned. The digitisation of medical records has given rise to more consultation rooms and health attendants being freed to assist doctors with patient care.
New Physiotherapy Centres at Toa Payoh and Woodlands Polyclinics

NHGP's physiotherapy service expanded its reach to the community. In July 2009 and January 2010, it opened two new centres at Toa Payoh and Woodlands Polyclinics respectively. Including the centre at Bukit Batok Polyclinic, the three centres saw a steady increase in the number of patients seeking help with a physiotherapist as it provides convenient access without having to be referred to an SOC.
“I have always enjoyed the view from the top.”

– Mdm Zaiton Bte Abdul Rahman,
patient volunteer of Bukit Batok Polyclinic
Volunteering at Bukit Batok Polyclinic may present new situations each time, but the sight of a patient well served remains.

Today while the view has become panoramic, the feeling of being at great heights has not changed.
Service Excellence
– Viewing Patients’ Needs As Top Priority
Nearly 1,100 patients from NHGP were interviewed between September and December 2009 at the Patient Satisfaction Survey commissioned by the Ministry of Health. Patients were asked to rate their satisfaction with the polyclinics and whether they would recommend their services to others.
Customer Satisfaction Survey 2009

In particular, they were asked to rate the clinics based on quality service attributes such as facilities, care coordination, clear explanation by staff on procedures and care, knowledge and skills of doctors, nurses and allied health staff, and care and concern by doctors, nurses and allied health staff.

More than 70 per cent of the patients surveyed were satisfied with NHGP’s services, with Woodlands Polyclinic achieving the highest overall satisfaction of 80.9 per cent. The survey also saw the highest percentage of patients (79.1 per cent) saying that they would recommend NHGP’s services to others. In this category, Bukit Batok Polyclinic achieved the highest score among the polyclinics in Singapore.

Excellent Service Award (EXSA) 2009

A total of 176 staff from NHGP received the Excellent Service Award in December 2009.

Dr Vittal Sunil Pawar of Toa Payoh Polyclinic was the proud nominee for the prestigious SuperStar Award for the healthcare category. Dr Sunil was nominated for his outstanding service qualities, selfless spirit, excellent work ethics, and dedication in providing the best care for his patients.

In 2006, Dr Sunil took on the role of Infection Control Advisor (ICA) and IT Champion for the Clinic and helped to train new doctors on IT skills and infection control matters. He was also the chairperson of the Clinic’s staff welfare committee and played a pivotal role in fortifying team spirit amongst staff through regular outings and bonding sessions.

In addition, Dr Sunil has been involved in several quality improvement projects over the years. His most recent Clinical Practice Improvement Project (CPIP) on Improving the uptake of Opportunistic Health Screening (OHS) among patients incorporated the use of Skype as an effective tool to communicate among colleagues.
NHG Outstanding Citizenship Award 2009

Dr Lew Yii Jen and Dr Helen Leong received the NHG Outstanding Citizenship Award 2009. This award aims to commend staff who have taken on additional responsibilities and contributed immensely to the organisation’s strategic objectives.

Dr Lew Yii Jen has made major contributions to the development of several clinical programmes for NHGP. He started the community physiotherapy services in Bukit Batok Polyclinic in July 2008 and the service has since expanded to Toa Payoh and Woodlands Polyclinics.

On the national front, Dr Lew is an active participant in National Emergency matters. During the SARS outbreak in 2003 and the recent Influenza A (H1N1) outbreak, he managed the operations to control the outbreak. Dr Lew was also involved in the planning and operation of the medical cover during the IMF/World Bank meeting in 2006.

Dr Helen Leong has made significant contributions towards the improvement of quality patient care in the polyclinics. She helped to develop the Comprehensive Chronic Care Programme for patients with diabetes, hypertension and lipid disorders. This involved the drafting of clinical practice guidelines and developing of the Diabetes Eye and Foot Screening services. She also helped to develop the Chronic Disease Management Registry and Database that allowed the tracking of clinical processes and outcomes.

Dr Leong was also instrumental in proposing to the Ministry of Health the use of Medisave for outpatient management of diabetes, hypertension and lipid disorders. The nationwide Chronic Disease Management Programme (CDMP) has enabled healthcare providers from the public and private sectors to work towards better clinical outcomes for patients with chronic diseases.

Healthcare Humanity Award (HHA) 2009

Head Nurse Angeline Yeo of Jurong Polyclinic received the Healthcare Humanity Award 2009. Angeline started her volunteer work 35 years ago and she currently helps out at a free clinic for the poor in Toa Payoh every Sunday. Besides that, she is also involved in community work overseas where she provides nursing aid to a children’s home. Being a veteran volunteer, she has led friends and colleagues to participate in numerous community projects.

Joys of volunteering - Head Nurse Angeline Yeo (back, lady in pink top) with the children in Batam
“The spirit of winning has always inspired a dedicated learning journey.”

– Mr Alan Peng Jing Wei, Health Attendant, Hougang Polyclinic
Today while the competition has become tougher, the strength in knowledge and achieving has not changed.

As the people behind NHGP evolve and improve with time, our desire to excel remains.
Quality Improvement
– Building Successful Milestones With Endurance And Dedication
Our journey towards providing quality care to patients has been a long-term focus for NHGP. In order to achieve high standards in patient service, our clinical and operational processes need to be robust, safe, efficient and timely.

2008 NHGP became the first primary care institution in Asia to achieve the Joint Commission International (JCI) accreditation.
Integrating LEAN Thinking to Improve Processes and Clinical Outcomes

NHGP has initiated various projects using the principles of LEAN and achieved great successes. We have frequently incorporated improvement activities to redesign our work processes for better and safer clinical outcomes and patient flow.

Case Study: Panel Management in Optimising Diabetic Treatment at Jurong Polyclinic – Improving Clinical Processes

The glycosylated haemoglobin (HbA1c) level is an indicator used by our doctors to gauge the glycaemic control of a patient diagnosed with diabetes mellitus. The desired target for all our diabetic patients is to achieve a HbA1c level of 7.0% or less as a range of 6.5 to 7.0% is associated with significantly reduced risk of developing chronic microvascular complications.

The Problems
1) Jurong Polyclinic only managed to help 36.9% of their diabetic patients achieve the desired target in 2007 due to inefficiencies in work processes.
2) Patients saw different doctors at each visit and given the short duration the doctor had with the patient, it was difficult to optimise the treatment plan for the patient.
3) There was also a high chance that the patient might not be referred to the care manager for counselling and education due to a lack of coordination between the nurses and the doctors.

4) This low proportion was of utmost concern because it reflected that the process of treating diabetic patients was not effective.

Having attended a CIP workshop recently, Dr Meena Sundram, Head of Jurong Polyclinic teamed up with senior nurse clinician Ng Soh Mui and senior staff nurse Christine Tan to improve the process. They aimed to help 60% of diabetic patients in Jurong Polyclinic achieve a HbA1c level of 7.0% or less by March 2009.

The Countermeasures
1) The team began by documenting the process of treating a diabetic patient who had two consecutive readings of HbA1c greater than 8.0%. When the patient came back for an appointment, the doctor either optimised the dose of oral hypoglycemic agents (OHA) or advised the patient to receive insulin treatment.
2) The team decided to implement a panel management concept to optimise the treatment of diabetic patients in Jurong Polyclinic. The panel management
included a primary care physician who directs proactive care for patients with the support of other clinic staff.

3) The team’s approach involved the care manager, an attending doctor and a senior family physician. The care manager would identify patients who had two consecutive readings of HbA1c greater than 8.0% and tag their casenotes. These cases were then sent to the senior family physician who would review the treatment, make recommendations and document it in the casenotes.

4) At the patient’s follow-up visit, the attending doctor would assess the patient. Using the recommended treatment plan, he would optimise the OHA dosage or get the patient started on insulin. If the patient defaulted on his appointment, the care manager would contact him to remind him of the visit.

5) After the patient saw the doctor, he was referred to the care manager where he was taught self-care skills such as how to self-administer insulin injection.

6) The care manager would set lifestyle goals for the patient and assess his dietary knowledge. Appointments for diabetic foot screenings, diabetic retinal photography and dietitian sessions would also be planned. This patient would continue to be monitored by the care manager until his HbA1c level reaches 7.0% or less.

Satisfaction comparison before/after Panel Team implementation:

<table>
<thead>
<tr>
<th>Category</th>
<th>Before Intervention</th>
<th>After Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>HbA1c levels in affected patients</td>
<td>36.9% had 7.0% or lower HbA1c levels</td>
<td>59% overall improved cases in 6 months, and 47.3% had 7.0% or lower HbA1c levels by 2008</td>
</tr>
</tbody>
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Value Stream Mapping (VSM)

The value stream mapping model helps to visualise the flow of our processes, as well as where inefficiencies in the processes originate from. The person or team mapping the process walks the ground to find out what exactly goes on at ground level. The data collected is then used to illustrate how value flows to the customer. From the current state value stream map, the person or team formulates ideas of what the future state value stream map should be. Ultimately, value stream mapping aims to achieve a value stream that is waste-free, continuously flowing and from which value is pulled by the customer.

Case Study: Accurate and Timely Medication Dispensing at Hougang Polyclinic – Improving Patient Safety

In 2008, the pharmacy in Hougang Polyclinic received seven written complaints from patients about having to endure long waits for their medications at the pharmacy. Morale was low among the pharmacy staff and with the workload ever increasing, they struggled to keep the waiting time short. The situation called for immediate rectification to prevent further complaints and dissatisfaction across the board.

A value stream map was plotted and Dr Steven Chong, Deputy Head of Hougang Polyclinic, led discussions to identify the wastes in the process.

The medication packing process only starts when the patient arrived at the pharmacy and obtained a queue number. During the dispensing process, the pharmacy staff frequently encountered one of the following scenarios:
The Problems

1) The processing of prescriptions starts only when patients arrive at the pharmacy registration counter, despite the fact that electronic prescriptions were sent even before patients reach the pharmacy.

2) For patients who required medication balancing, the pharmacy staff at the queue ticket counter needed an additional 1 to 5 minutes to count the balance medication from previous visits and this slowed down the process.

3) Pharmacy technicians may face difficulties comprehending doctors’ prescriptions as they have different ways of writing it. In this instance, the pharmacy staff needed to call the doctors to clarify the ambiguities.

4) Doctors were frequently disrupted during consultations by calls from the pharmacists. Such disruptions may lead to doctors making errors during consultations.

The Countermeasures

1) To minimise waiting time for collection of medication, the patient’s medication is packed the moment an electronic prescription is sent to the pharmacy.

2) A medication balancing counter was set up so that patients with such requests are directed there.

3) Standardised terminologies are used by the doctors when prescribing medication. This helps minimise phone call disruptions made to the doctors during consultation.

4) Whenever there is a need for clarification, the instant messaging tool, Skype, is used. The unintrusive nature of instant messaging was a welcoming change by the doctors.

5) As the process redesign coincided with the upgrading of Hougang Polyclinic, the team took the chance to add three dispensing counters to handle the workload.

Satisfaction comparison before/after VSM implementation:

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<thead>
<tr>
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3P – Product and Process Preparation

3P is a LEAN tool that has been adopted by NHGP for its upgrading projects. 3P is used to define the Product and Process Preparation. It seeks to meet customer requirements by rapidly creating process designs that require the least time and resources. 3P involves a diverse group of individuals, coming together in a multi-day creative process to identify several alternative ways of functioning. The goal is to meet the customers' needs using different process designs. The 3P methodology helps to simplify processes, making them easier to produce, use and maintain. 3P is used by organisations who are already applying LEAN tools and techniques, such as NHGP, as it is an extension of value stream mapping.

c. Develop a niche patient care model and improved patient flows for acute and chronic patients.

d. Establish a pandemic-ready clinic without interaction between infectious and non-infectious patients during a pandemic.

The teams came up with five different layouts, each with their own merits. Everyone voted for their preferences and a hybrid design of the best features was eventually created.

The re-designed pandemic-ready clinic, with the capacity to meet the next 10 year's patient volume, could then better manage the acute and chronic patients in a clustering system. The amount of travelling for elderly and wheelchair-bound patients could also be minimised. The number of rooms would increase by more than 50% as a result of better utilisation of space. These changes greatly reduced the unnecessary steps that add no value to the patients.

Case Study: Upgrading of Toa Payoh Polyclinic – Improving Patient Flow and Utilisation of Clinic Space

In August 2009, a team comprising clinic management, doctors, nurses, pharmacy, diagnostics and operations staff from Toa Payoh Polyclinic came together in a 3-day workshop to re-design their clinic in preparation for their upgrading. Using LEAN tools and techniques, the team re-designed their processes in five major value streams - acute, chronic walk-in, chronic appointments, care management and technical visits. The outcomes of the workshop included:

a. Additional physical capacity to cater for patient volume growth for the next 10 years.

b. To create a geriatric friendly model catering for the large proportion of elderly patients.

The team who re-designed Toa Payoh Polyclinic using the 3P methodology
People Of NHGP

Supporting the clinics to achieve greater heights
As we start the fresh new year, remember that each day presents an opportunity to make something extraordinary out of it. May every day be our best day and bring new cheer to everyone.”

Dr Karen Ng
“Problems in life develop our perseverance which in turn strengthen our character and give us greater confidence about the future. May we face our past without regrets, handle our present with confidence and prepare our future without fear.”

- Dr Lim Chee Kong
“Innovation - we will not only think but also do new things. See us change and improve for the better in the year ahead.”

- Dr Keith Tsou
“It is amazing how much we have accomplished, as the team worked tirelessly for the health of our community. In the coming year, let us continue to give our best and serve with pride.”

- Dr Evan Sim

Clementi Polyclinic
The team with passion
“To provide real service, we will have to add a dash of sincerity and integrity in all that we do. Let us re-discover this spark inside all of us.”

- Dr Yehudi Yeo

Choa Chu Kang Polyclinic
Serving you with style
Jurong Polyclinic
Caring for you with a smile

“Each year presents a different set of challenges to us, but it is also these challenges that will shape us positively. We will continue to make a difference in our clinic.”

- Dr Meena Sundram
'As the new year approaches, it is timely to look back to the past, and more importantly, forward to the future. I look forward to renewing our commitment to serve our patients.'

- Dr Tung Yew Cheang
Woodlands Polyclinic
Welcoming you with our best service

“A new year brings new opportunities. May we find and create more ways to be your lifelong healthcare partner.”

- Dr Gowri Doraisamy
The new year is not just a new start, it is also the beginning of a better tomorrow. A new neighbour, a new partner and a new paradigm.

- Dr Simon Lee
POLYCLINICS LISTING

Ang Mo Kio Polyclinic*
Bik 723 Ang Mo Kio Ave 8
#01-4136
Singapore 560723

Clementi Polyclinic
Bik 451 Clementi Ave 3
#02-307
Singapore 120451

Toa Payoh Polyclinic*
2003 Toa Payoh Lorong 8
Singapore 319260

Bukit Batok Polyclinic
50 Bukit Batok West Ave 3
Singapore 659164

Hougang Polyclinic*
89 Hougang Ave 4
Singapore 538829

Woodlands Polyclinic*
10 Woodlands Street 31
Singapore 738579

Choa Chu Kang Polyclinic
2 Teck Whye Crescent
Singapore 688846

Jurong Polyclinic*
190 Jurong East Ave 1
Singapore 609788

Yishun Polyclinic
100 Yishun Central
Singapore 768626

* Polyclinics with NHGP DentalCare
National Healthcare Group Polyclinics
6 Commonwealth Lane
Level 7-01/02 GMTI Building
Singapore 149647

Contact Centre: (65) 63553000 (for enquiries and appointments)
Email: enquiries@nhgp.com.sg
Website: www.nhgp.com.sg