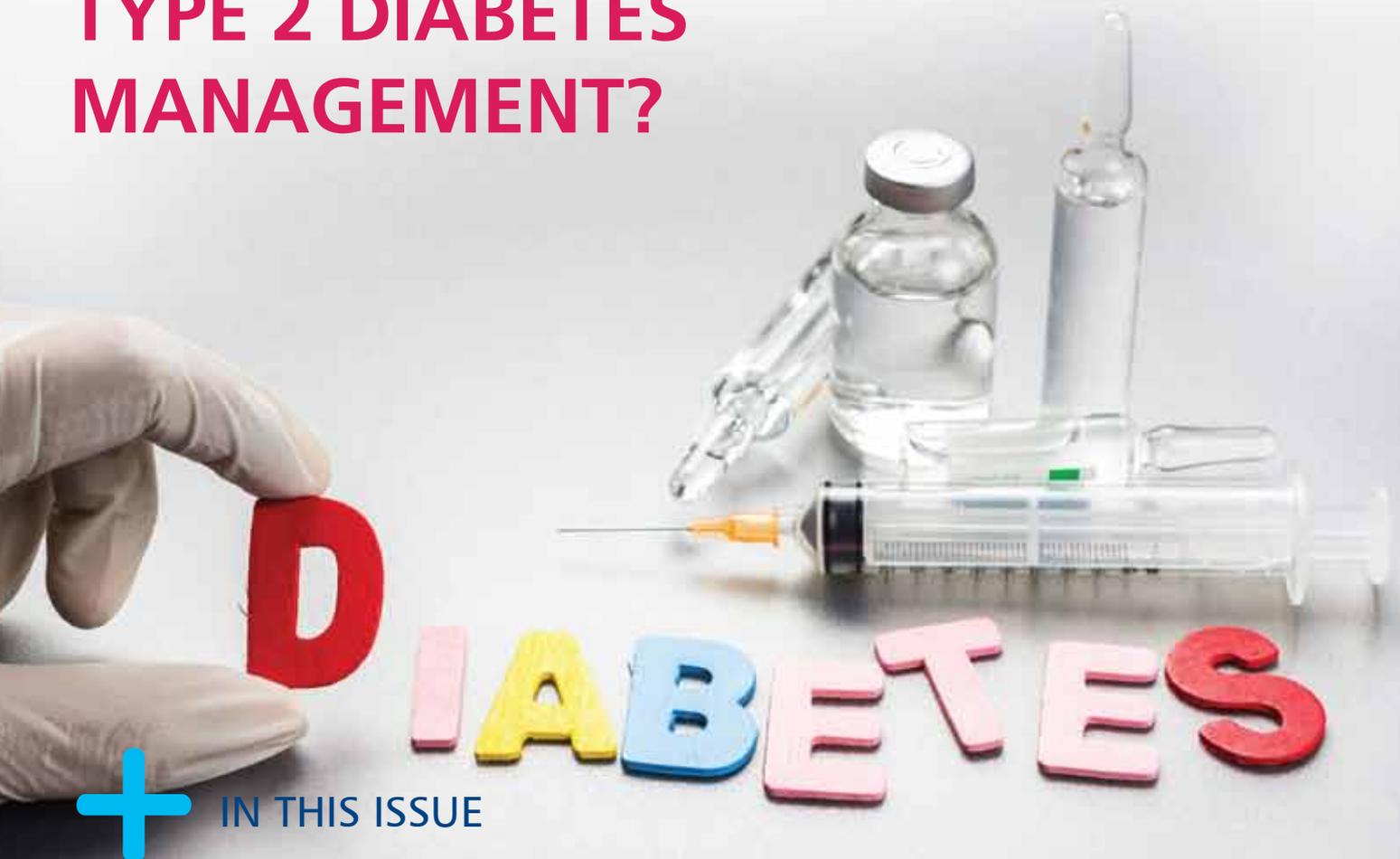


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WHAT'S NEW IN TYPE 2 DIABETES MANAGEMENT?



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GPLC

NUH GP Liaison Centre

At the National University Hospital (NUH), we recognise the pivotal role general practitioners (GPs) and family physicians play in providing and ensuring that the general public healthcare is of the highest quality and standard. As such, we believe that through closer partnerships, we can deliver more personalised, comprehensive, and efficient medical care for our mutual patients.

The General Practitioner Liaison Centre (GPLC) aims to build rapport and facilitate collaboration among GPs, family physicians and our specialists. As a central coordinating point, we provide assistance in areas such as patient referrals, continuing medical education (CME) training, and general enquiries about our hospital's services.

Through building these important platforms of shared care and communication, we hope that our patients will be the greatest beneficiaries.

If we could be of any assistance to you, please feel free to contact our office from Mon - Fri : 0900-1200hrs, 1400-1800hrs at:

GP Appointment Hotline

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GP Liaison Centre

Tel: +65 6772 2535 / 5079

NUH Continuing Medical Education (CME) Events

At NUH, we strive to advance health by integrating excellent clinical care, research and education. As part of our mission, we are committed to provide regular Continuing Medical Education (CME) events for GPs and family physicians. These events aim to provide the latest and relevant clinical updates practical for your patient care.

Organised jointly by the GP Liaison Centre (GPLC) and the various clinical departments within NUH, our specialists will present different topics in their own areas of specialties in these symposiums, which are held monthly.

For more information on our CME events, you can go to www.nuhcme.com.sg or scan the following QR code.



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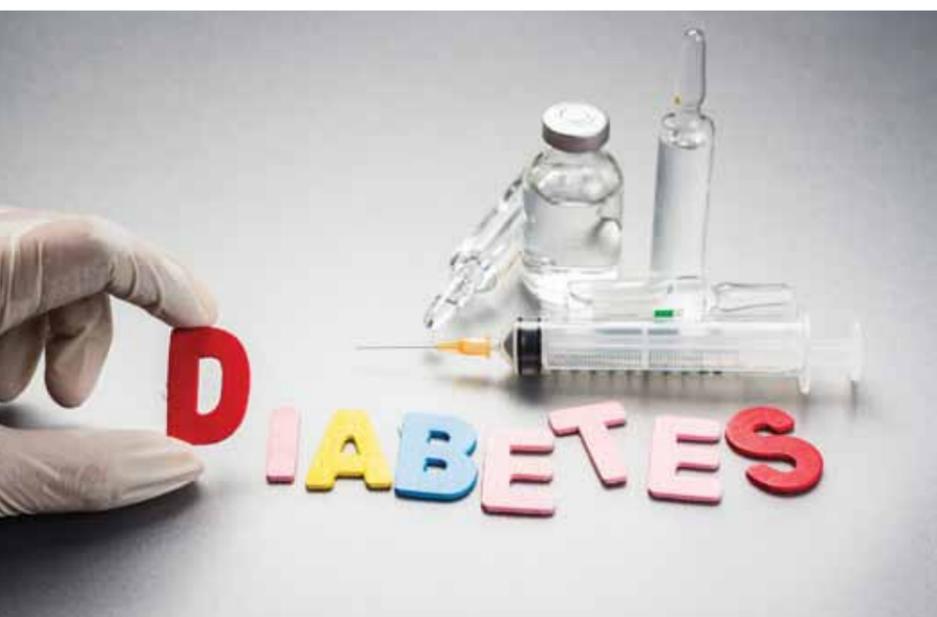
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Specialist in Focus: A/Prof Derrick Aw



What's New In Type 2 Diabetes Management?

Individualised Targets, Treatment Plans and the Essential Role of Primary Care



Within the past year, Singapore's Ministry of Health has released an updated Diabetes Clinical Practice Guidelines [1]. Since the previous version in 2006, several advancements in the approach to care of patients with diabetes mellitus are highlighted. Each year, the American Diabetes Association (ADA) also publishes a new Standards of Care [2] that is updated from the previous year and incorporates some of the newest and most interesting findings in the treatment of diabetes. There has been much emphasis on individualising not only the goals of treatment, but also the treatment itself. Here, we highlight the areas which are likely to be of particular interest to primary care practitioners and how you may play an essential role to reduce the burden of type 2 diabetes (T2D).

The physician's pharmacotherapeutic armamentarium has expanded in the past 5 years with the introduction of new classes of drugs such as sodium-glucose co-transporter-2 (SGLT-2) inhibitors, dipeptidyl peptidase-4 (DPP-4) inhibitors, and glucagon-like peptide-1 (GLP-1) analogues. Knowing what treatments to use and how to apply various guidelines to practice can be confusing. Through patient case discussions, we illustrate how to apply current guideline recommendations for intensifying glucose-lowering therapy in appropriate patients and how to develop safe and effective treatment plans for patients with T2D based on individual treatment goals.

Patient case vignette 1

Mrs A is a 40-year-old woman with type 2 diabetes diagnosed 3 years ago on a health screening. She is obese with a body mass index (BMI) of 30 kg/m². Initially, Mrs A did not want to start medication and chose to try lifestyle modification. She works as a sales executive and has irregular meals. After several months, you convince her to start metformin, in addition to continuing lifestyle modification to get her glucose under control. She relates that it has been difficult for her to find time to exercise and she tries to watch her diet, but this is often constrained by what is available at the hawker centres. She sees you in clinic now and is on metformin 850mg three times daily. Her HbA1c is 8.2% and fasting blood glucose is 10.5mmol/L. She is frustrated that she has gained 4kg in the past 3 months, and feels hungry all the time.

Patient case vignette 2

Mr T is a 82-year-old man with type 2 diabetes diagnosed 30 years ago, complicated by peripheral neuropathy and peripheral vascular disease with a right below knee amputation. He has diabetic nephropathy and retinopathy, and had a stroke 2 years ago, after which, he has been wheelchair-bound. He sees you in the clinic and is on metformin 500mg and gliclazide 80mg twice daily for the past 2 years. His latest HbA1c is 8.2% and fasting blood glucose is 10.5mmol/L. His serum creatinine is 160umol/L and the estimated glomerular filtration rate (GFR) is 35ml/min. Once a week, he experiences symptoms of giddiness and tremors on waking, which improves after a cup of Milo. He has had to be admitted to hospital once in the past 6 months for severe hypoglycaemia. He does not monitor his blood glucose at home.

Glycaemic control and individualisation of targets – A1c is not one-size-fits-all

These case vignettes illustrate how diverse patients with diabetes seen in a primary care clinic can be, though they have the same degree of glycaemic control. One of the most common ways a physician monitors the effectiveness of diabetes management is with the glycated haemoglobin (HbA1c) measurement, a weighted average of the blood glucose level over several months. The HbA1c has strong predictive value for diabetes complications. In addition, all patients with DM who are on insulin should be advised to perform self-monitoring of blood glucose (SMBG).

While HbA1c is a good marker of the average blood glucose over the past 2 to 3 months, it does not reflect the degree of variability of blood glucose. Two patients with the same HbA1c may have differing SMBG profiles – one with most glucose values clustered close to the mean, another with marked hyperglycaemic and hypoglycaemic episodes. In such cases, history of hypoglycaemic episodes may help; SMBG will give a clearer picture of the glycaemic variation and help the physician to better adjust the treatment to match patient's needs.

The targets of glycaemic control should be individualised – increased control reduces the risk of complications, but it may also increase the incidence of hypoglycaemia (Fig 1). Factors such as a short disease duration, longer life expectancy, and no significant cardiovascular disease will favour more stringent HbA1c goals of <6.5%, while in most adult non-pregnant patients, the target is 7% or below. These goals would apply to Mrs A in case vignette 1. In patients with episodes of severe hypoglycaemia, limited life expectancy, or advanced complications (such as Mr T in case vignette 2), HbA1c goal of 8% or below will be more appropriate.

Approach to management of hyperglycemia:

Risks potentially associated with hypoglycemia, other adverse events

Disease duration

Life expectancy

Important comorbidities

Established vascular complications

Resources, support system

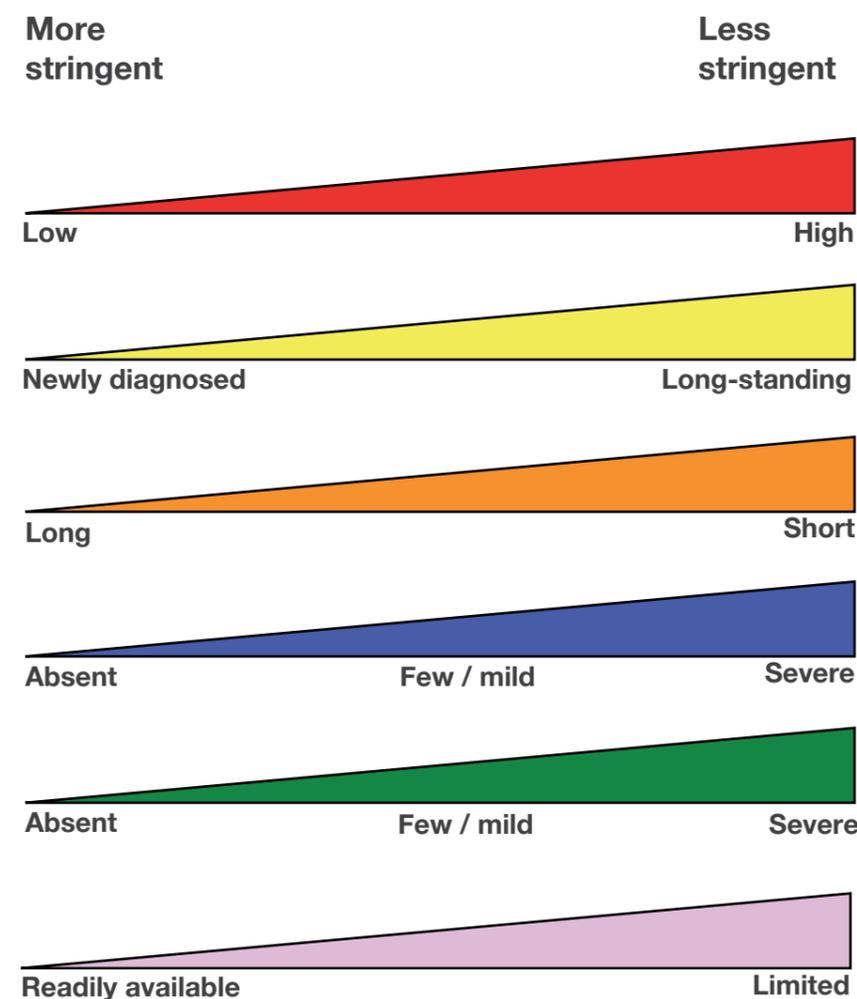


Figure 1: Elements of decision making to determine appropriate glycaemic targets [2].

Lifestyle management as an integral part of T2D management: “1-2 pearls per visit”

Mrs A is in a real catch-22 because she does not want to take additional therapies, but she has not found a way to fit therapeutic lifestyle effectively into her life. Unfortunately, one of those things has to happen. She actually went for diabetes education classes at a local hospital over a period of several months but the problem is her busy lifestyle. She takes care of her children and has a full-time job. She feels that she cannot implement many of the guidelines that were presented to her.

The other issue that is important to remember is that obesity and diabetes are chronic illnesses. It takes constant effort to manage it, and healthcare providers have to constantly be supportive of the patient who is obese and has T2D. It does not help patients by telling them guidelines and targets, without giving them the tools to achieve them practically. Realistic diet and physical activity plan conducive to patient’s lifestyle and regular follow-up visits are needed to follow patient’s progress and continue to engage, educate and empower them for self-care.

To encourage lifestyle changes, it may help patients by telling them to get a glucometer, and go about their normal daily activities to see how it affects their glucose. Sometimes, when they see their glucose rise with certain choices they make, they may make a change on their own, rather than having to tell them to.

The other thing is to make sure people log, and do it effectively. When they log their food intake or activity and relate this to their blood glucose, it raises awareness. This is a very simple thing to do if done strategically, and can make a big change in people’s habits. One of the things that we can do for patients like Mrs A is to not have them bring in morning glucose readings. Repeated fasting blood glucose values are of limited value - we know they are always around the same.

At her 3-month follow-up, we would have her bring in glucose measurements that are done over a period of 3 days. These should be done fasting before breakfast; 2 hours after breakfast; before lunch; 2 hours after lunch; before dinner; 2 hours after dinner; and at bedtime, on a rotating basis. She does this for 3 days in addition to logging what she eats at each time. It is almost like a continuous glucose meter and is something doable. Explain to her that we do not want all the measurements for just 1 day, and that we would like to see measurements at these different times. When she does so, she may notice, for example, that eating “roti prata” causes an increase in her blood sugar, whereas a “chapati” does not. This shows that T2D is so different in every individual, and with this process, the patient will also learn what works best for them.

Mrs A should be encouraged to incorporate practical, sustainable ways of increasing physical activity into her daily routine. For example, when taking the lift, stop 2 floors higher and take the stairs to walk the rest of the way. “Exercise” regimens can be too much hard work and the inertia for starting this is high for someone with a busy lifestyle. At follow-up visits, feedback how their weight is trending and ask them how they are increasing, or at least maintaining, physical activity in their daily life.

We are not going to be able to give her all the pearls that we have learned from many years of managing T2D with different patients in just 1 visit. If she can leave with 1 or 2 pearls at each visit, and she feels that you have that shared responsibility with her, it will help her in making decisions about her medications and lifestyle.

T2D Pharmacotherapeutics—what’s new and how do they fit in the treatment intensification plan?

We commonly see patients like Mrs A, whose HbA1c drifts up. By the time we start thinking about doing something else, the HbA1c is already quite high. The reality is that metformin is a great drug, but T2D is a progressive disease, and so we expect that things will climb over time. Early intervention is critically important. There is a thin line as to how much control Mrs A will have in terms of her lifestyle and what she is able to do. It is a matter of having not only patient inertia, but clinician inertia. Both have to work together for shared responsibility, and decision making.

There are now many other options available when HbA1c is not controlled [3] (Table 1). Mrs A is relatively young; her HbA1c goal would be less than 6.5%. She really should be treated aggressively earlier; as we know, they will have long-term benefits as a result [4].

The medications that can be considered for Mrs A include a glucagon-like peptide-1 (GLP-1) receptor agonist or a DPP-4 inhibitor. If possible, avoid a sulphonylurea because of the weight gain [3]. Insulin has a risk of hypoglycaemia that would not be necessary in her. A sodium-glucose co-transporter 2 (SGLT2) inhibitor might be a valuable recommendation as well. Of course, cost is a significant pragmatic consideration that may preclude the use of these newer pharmacological agents.

The advantage of the GLP-1 receptor agonist is weight loss [5]. It would take away that feeling of hunger within 3 weeks. She would start feeling some benefit. However, she may be resistant to the fact that it is an injectable and expensive.

How does one decide between using a GLP-1 receptor agonist or a

dipeptidyl-peptidase-4 (DPP-4) inhibitor? The GLP-1 receptor agonists give you more HbA1c reduction, and they also have the benefit of weight loss [5]. A DPP-4 inhibitor may not get you a full percent reduction in HbA1c. It typically gets you 0.5% to 0.7% HbA1c reduction [5]. If we can engage her in therapeutic lifestyle changes, that plus a DPP-4 inhibitor would be an option, or maybe two-medication therapy. This is a time where you can engage the patient and say, “Lifestyle is a treatment.” We would either pick 2 treatments or 1 treatment and lifestyle.

In the case of Mr T, our goal is less stringent, and HbA1C of around 8% would be acceptable. It would be prudent to avoid hypoglycaemia, as the morbidity associated with a fall or neuroglycopenic hypoglycaemia would be far greater than the benefits associated with cardiovascular risk reduction years down the line. If the costs are acceptable, consider switching the sulphonylurea to a DPP4-inhibitor to reduce the risk of hypoglycaemia.

He has a decreased glomerular filtration rate (GFR), so we have to think about using a lower dose of some of the DPP-4 inhibitors or choose one that does not need lowering of the dose [5]. They will be equally effective. There is also concern with metformin and his decreased creatinine clearance. We have seen

more liberalisation of low-dose metformin with established renal disease, but it does require ongoing monitoring and its use is contraindicated in patients with estimated GFR < 30 ml/min [6].

SGLT2 inhibitors is an option that can significantly lower risk for hypoglycaemia but in this patient, we would not go with this class of agents as a first choice because with a reduced renal function, we will not get as much bang for the buck [7].

| Intervention | Expected A1c reduction (%) | Advantages | Disadvantages |
|--------------------------|----------------------------|--|--|
| Lifestyle changes | 1.0 - 2.0 | - Wide-ranging benefits | - Fails for most in first year, difficult to sustain |
| Metformin | 1.5 | - Weight neutral - Inexpensive | - GI side effects - Risk of lactic acidosis |
| Sulphonylureas | 1.5 | - Inexpensive | - Weight gain - Hypoglycaemia |
| Meglitinides | 1.0 - 1.5 | - Short duration | - 3x/day dosing - High cost |
| α-glucosidase inhibitors | 0.5 - 0.8 | - Weight neutral | - GI side effects - 3x/day dosing - High cost |
| DPP-4 inhibitors | 0.8 - 1.2 | - Weight neutral - Lower hypoglycaemia | - Rhinosinusitis - High cost |
| SGLT-2 inhibitors | 0.7 - 1.2 | - Weight loss | - Urinary tract infections - High cost |
| Insulin | 1.5 - 2.5 | - No dose limit - Inexpensive for regular insulin | - Injections - Hypoglycaemia - Weight gain |
| GLP-1 analogues | 0.8 - 1.5 | - Weight loss | - Injections - GI side effects - High cost |

Table 1: T2D treatment options.

Conclusion

Type 2 diabetes is a progressive disease. Hence, we need to implement timely interventions that will keep us one step ahead. Unlike years ago, we now have a clearer picture on how to choose therapeutic agent(s) using patient-level factors. We have to keep moving with the disease and physicians should not be afraid to intensify therapy every 2-3 months where warranted if the patients are not at goal.

T2D can be viewed as a 'puzzle' and the clinician is trying to solve this puzzle alongside the patients. There should be emphasis on quality of life, bearing in mind the symptoms associated with T2D such as depression, fatigue, frequent urination, constant hunger and thirst. We should help the patients understand that there is both a short and long term benefit to treatment. We should share what can be expected with the treatment plan and that we do not have a magic wand that will treat T2D without their involvement. Sometimes, we may be changing the therapies, realising that this may not be that piece of the puzzle that fits perfectly and it is time to try another piece.

Primary care physicians are well poised to provide access, continuity and holistic care to most of the population. The vast majority of diabetes managements is in the hand of generalists, with no more than 20% of people with diabetes seeing an endocrinologist [9]. Primary care has an essential role

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Individualised targets



- A1c is not one-size-fits-all
- Gauge prevention of complications of T2D versus hypoglycaemic risk

Lifestyle modifications and monitoring



- 1-2 pearls per visit - practical advice to effect change
- Effective blood glucose, diet and activity logs help reinforce treatment effect and lifestyle choices

New pharmacotherapeutics



- Pros and cons - weight loss, low hypoglycaemic risk, cost
- Tailor the drug choice to unique patient factors

Figure 2: Diabetes management updates in a nutshell.

in engaging, educating and empowering the patients in terms of understanding their disease process, what is available out there and what the pros and cons are.

There is nothing inevitable about the complications of diabetes – overwhelming evidences show that good diabetes care does matter, and that mortality and morbidity can be reduced or even eliminated. Although finding the right combination of lifestyle and pharmacological therapies can be time and energy consuming for both healthcare professionals and the patients, it is well worth the effort.



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Dr Sue-Anne Toh received her medical degree from the University of Cambridge, UK; and pursued post-graduate training at the Hospital of UPenn, Philadelphia, USA. Dr Toh's clinical and research interests are in cardiovascular risk optimisation in patients with diabetes mellitus, lipid disorders and/or obesity.



Dr Tan Teck Huat, Andre

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Dr Tan Teck Huat, Andre graduated from the Yong Loo Lin School of Medicine in 2008 and joined the Senior Residency in Endocrinology at the National University of Singapore in 2014. He sees a wide variety of patients with diabetes and endocrinological conditions in both inpatient and outpatient settings as part of his training, and enjoys the challenge of better tailoring management for each of his diabetic patients during the clinic consultations.

Outpatient Parenteral Antibiotic Therapy (OPAT)

The practice of administering intravenous antimicrobial therapy in an outpatient setting was first described in the United States of America in 1974. Since then, the service has become mainstream across the world including in Singapore's major hospitals for many acute, sub-acute and chronic infections.

The OPAT centre was set up in National University Hospital in 2004. The availability of the multi-disciplinary team ensures the centre's ability to cater to patients' needs when being treated with intravenous antimicrobial therapy. Patients can be referred to the centre while they are receiving treatment during their hospital stay or as outpatient referrals after the Infectious Diseases' consultants have reviewed them.



Our range of services include:

Outpatient Parenteral Antibiotic Therapy

- Management of infection
- Insertion and management of vascular access device
- Patient and family education on aspects of their care
- Training of caregiver for administration of intravenous antibiotic so that patients do not need to visit the hospital everyday, but can receive treatment at home

Home Caregiver Administration (HCA)

- Training for the administration of intravenous antibiotic via the elastomeric pump to patients and/or caregiver can be provided. The training can commence while the patient is hospitalised
- The administration is only allowed to commence when the patient/caregiver has shown competence and confidence in doing the procedure
- Patient education materials are available for the patient's/caregiver's reference
- A 24-hour hotline is provided for patients/caregivers for after-hours support

Enrolment criteria for our OPAT patients are as follows:

- Diagnosis and treatment plans confirmed by an Infectious Disease physician
- Medically stable
- Patient understands the diagnosis and treatment (including compulsory attendance and PICC/infusor care)
- Patient understands OPAT and the availability of the after-hours numbers
- Adequate care of home needs (by self or family)
- Patient's future contact is arranged (i.e., will come to infusion centre each day or as scheduled, nurses to visit home commencing on date scheduled)
- Consideration of home administration by caregiver has been made
- Financial counseling completed
- Adequate IV access (i.e., PICC or intravenous cannula in site)
- Other nursing care needs identified (e.g., wound care, drains)



Antimicrobial Selection

When we select an antimicrobial agent for OPAT, multiple factors are taken into account, including the infecting organism, the pharmacodynamic and pharmacokinetic properties of candidate drugs, and drug stability. This is because some antimicrobials are unstable at room temperature once reconstituted and thus, unsuitable for continuous infusion, or some cannot achieve its concentration in an infusion device.

Also, not all cases that are referred for OPAT require intravenous antimicrobial therapy. Some can be converted to oral antimicrobials if deemed suitable. Therefore, all cases must first be reviewed by an Infectious Disease physician before consideration for OPAT.

Antimicrobials can be given via a 24-hour infusor device or as a daily bolus infusion. Most intravenous antibiotics are suitable, and the most common ones are cephalosporins, aminoglycosides, ertapenem, vancomycin, penicillin, flucloxacillin and piperacillin-tazobactam.

Antimicrobial Administration

The main issues that need to be considered when deciding the type of vascular access device include the diagnosis, the antimicrobial prescribed and its frequency of administration, the anticipated duration of therapy and the vein conditions. In the NUH's OPAT Centre, the majority of our patients use the PICC or peripherally-inserted central catheters. A small number use a peripheral intravenous cannula and these are usually patients with good vein status who require short term antimicrobials that can be given as a once daily bolus infusion.

OPAT Outcomes and Patient Safety

Our OPAT patients are closely monitored for response to therapy and potential adverse events. They are cared for daily by our specialised team of dedicated nurses. Blood investigations are done at regular intervals and patients are reviewed by the Infectious Disease physician once weekly. However, depending on the diagnosis and response, some patients may require more frequent blood investigations and follow-up reviews by the physician.

Based on an outcome analysis done in 2013 between our centre and the OPAT centre in Tan Tock Seng Hospital, 84.1% of our patients completed OPAT successfully. Of those who were re-admitted due to clinical deterioration in OPAT, 72% were due to worsening of underlying co-morbidities while 28% were due to the infectious disease condition of which OPAT was initiated. From this, we concluded that OPAT is safe with 3400 hospital bed days saved per year [1].

Common Infections Treated In Our OPAT Centre

Some typical conditions we look after in the OPAT Centre include:

- Complicated urinary tract infections
- Liver abscesses
- Osteomyelitis
- Septic arthritis
- Endocarditis

The average length of stay in the OPAT Centre ranges from 2 weeks to 6 weeks.



From left: NC Emma, SSN1 Weimin, SSN1 Tricia, SN1 Mei, SN1 Li Qiong and SN1 Padmavathi.



Service Team Leader Rashidah and Clinic Manager Athel.

Cost Issues

Patients can claim up to SGD 2400.00 from Medisave for treatments in OPAT. Based on a cost analysis done in 2009, we found that the mean cost per day in OPAT was much less compared to inpatient care, i.e., SGD 278.00 versus SGD 457.00 [2].

Referral for OPAT in the Outpatient Setting

If you feel someone from the outpatient clinic would benefit from OPAT, please discuss with or refer to our Infectious Diseases physicians. You may even prevent an admission. Of course, if antibiotics are not necessary or an oral option is available, they will be very much preferred.



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Dr Jolene Oon joined the Division of Infectious Diseases in November 2010. Her special interests are in the travel and tropical medicine, and OPAT. She also enjoys undergraduate and postgraduate teaching.

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Special thanks to Professor Dale Fisher, Senior Consultant, Head of Division of Infectious Diseases for his help with this article.

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Open Access Gastroscopy

Gastric symptoms are very common in the primary healthcare setting. Usual complaints include early satiety, bloating, feeling gassy, epigastric and retrosternal burning or upper abdominal discomfort. Often, dietary modification advice with symptomatic medications would provide adequate relief.

In some circumstances, general practitioners may be keen to recommend a gastroscopy to evaluate these gastric symptoms if they are recurrent. The gastroscopy would give certainty of a normal scope finding in keeping with functional dyspepsia or acid reflux. Other common diagnosis would be gastritis or ulcers; and less commonly, an unexpected gastric tumour.

Some patients could be referred to a gastroenterologist for further evaluation and for the gastroenterologist to consider if a gastroscopy or other investigations are warranted. However, in a subgroup of individuals who clearly have no alarm symptoms or red flags, for example, weight loss or hematemesis, the gastroscopy can be organised by the GP in an Open Access manner.

What is Open Access Gastroscopy?

Open Access Gastroscopy means, while the gastroscopy is performed by a gastroenterologist in the Endoscopy Centre, this procedure happens **without** a prior formal consultation in the specialist outpatient clinics. By proceeding directly to the procedure, it saves the patient the time he or she would need to wait for an appointment to see the specialist in the clinics, allowing the gastroscopy booking to be scheduled sooner. In such cases, the referring GP considers that a specialist consultation is not necessary to manage the condition. Therefore, the gastroenterologist performs the gastroscopy for this open access patient, but would not take over the management of care from the GP; unless there was an unexpected finding such as a bleeding lesion or tumour which would then warrant further investigation and management at a hospital level.

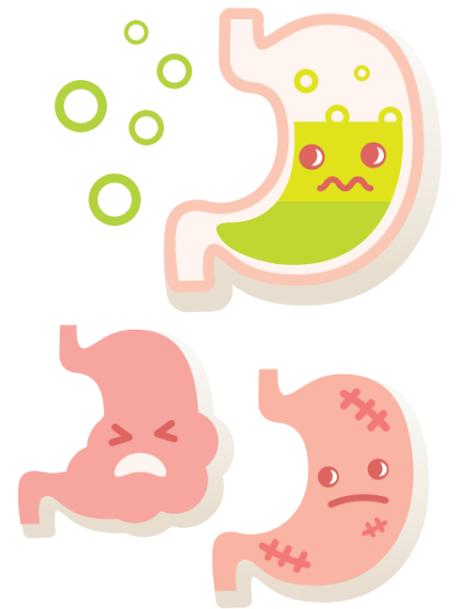
When the patient presents to the Endoscopy Centre on the day of the gastroscopy, the gastroenterologist would ask a series of questions as a form of triaging to ensure that the gastroscopy indication is appropriate and that the procedure can proceed safely in the patient's interest.

While the GP would have explained the gastroscopy procedure, this is explained again to the patient together with the risk, benefits and alternatives, before obtaining the patient's signed consent. Any clarification is done prior to proceeding with the gastroscopy. After the gastroscopy, the patient would continue the follow-up with their GPs for further medical advice and treatment.

Patient Selection is Vital

Not all patients are suitable for open access gastroscopy, thus, knowing the exclusions are vital. The focus in selecting the right patient in this setting is on patient safety.

Some patients on "high-risk medications" are better seen by a gastroenterologist to discuss about any possible discontinuation or timing of these medications if deemed safe, for example, anti-platelets for cardiac stents or the newer "NOAC" agents (novel oral anticoagulation agents such as Dabigatran, Rivaroxaban, Apixaban, Edoxaban). Often, the gastroenterologists



may make this decision in consultation with their fellow cardiologists.

Other high-risk patients may need closer monitoring, for example, the poorly controlled diabetics on insulin, severe ischaemic heart disease, those with cardiac devices e.g., pacemakers, or those with heart valve replacements. Similarly, those with severe pulmonary disease or recent acute myocardial infarct of stroke < 6 months ago would not be suitable for open access gastroscopy.

There is also an age-threshold of 60 years old and younger to be appropriate for open access gastroscopy.

Open access gastroscopy at NUH

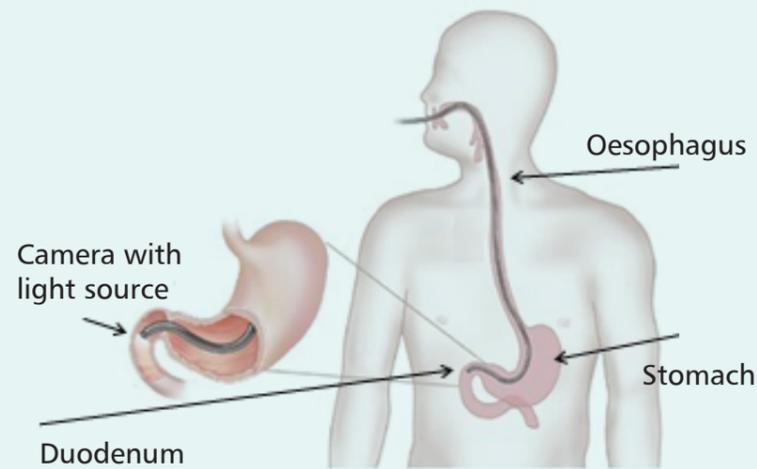
At NUH, the Open Access Gastroscopy service has been made available to our GP partners for more than 10 years and since 2008 - 2009, to our polyclinic counterparts as well. This allows better right-siting of the patients as well as better access to the investigations such as gastroscopy at the patient's convenience, but not at the expense of safety.

If you have a potential patient for this Open Access Gastroscopy, you may want to contact our appointment hotline at **6772 6388**. The procedure is done at the NUH Endoscopy Centre at the Kent Ridge Wing building.

NOT suitable for Open access gastroscopy

- Physically unfit
- Uncontrolled hypertension (BP >180/100)
- Diabetic on Insulin
- Severe Ischaemic Heart Disease/With Cardiac device, eg. Cardiac Pacemakers and Stents /Heart Valve Replacements
- Severe Pulmonary Disease
- On warfarin and other anti-coagulants
- NOAC Medications, e.g., Dabigatran, Rivaroxaban, Apixaban, Edoxaban
- Not competent to give consent

(For doctors to explain and to be given to patients)



What is Gastroscopy?

Gastroscopy is an endoscopic examination of the upper gastrointestinal tract using a flexible scope with a light source and camera system connected to it.

This procedure allows the doctor to inspect the patient's oesophagus (gullet), stomach and the part of the duodenum (small intestine) visually for any ulcers, bleeding, growths or inflammation.

Samples from the ulcers or growths may be taken during the procedure to check for cancer or the bacteria H. Pylori.

Most patients are sedated during the procedure so they often do not feel or remember the procedure. Patient's throat will not hurt as medication will also be given to numb it.

- Significant loss of weight
- AMI / CVA within 6 months
- >60 years old

Consider referral to an Emergency Department

- Hemetemesis
- Melena
- Per-rectal bleeding



Dr Lim Li Lin

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Dr Lim Li Lin attained her MBBS from the University of Melbourne, Australia; her MRCP from London, UK and the Gastroenterology Specialist accreditation from the Ministry of Health in Singapore. Dr Lim received the HMDP scholarship for an ERCP (Endoscopic Retrograde Cholangiopancreatography) fellowship training under Professor Guido Costamagna in Rome, Italy.

She currently holds the position of Director of Endoscopy Centre, NUH and Senior Consultant in the Division of Gastroenterology & Hepatology, University Medicine Cluster, NUH. In addition to general gastroenterology & hepatology, her main area of interest is therapeutic endoscopy. She has side interest in clinical nutrition and is the champion clinician for the NUH parenteral nutrition service.

Bridging The Gap: Transitional Care Programme in the National University Hospital (NUH)

The global issue of aging society has prompted healthcare leaders to re-evaluate its strategies with the rising demand of healthcare services. Singapore is joining other developed nations and is currently one of the most rapidly ageing country in the world.

The excellent healthcare outcome in Singapore is an achievement for a nation of 50-years-old and indeed, we have come a long way. With better hygiene, living conditions and a developed healthcare system, residents are living longer. This is evidenced by the increase in average life expectancy from 75 years in 1990 to 83 years in 2013. Not unexpectedly with an aging population, the prevalence of chronic illness will also continue on an upward trend leading to increase healthcare utilisation.

The current healthcare model, which is largely focused on acute care, is not sustainable in the long run, especially with silver tsunami on our shore. The healthcare needs of our elderly vary from their younger counterpart and it has been poorly understood and managed. Most of our elderly lives in residential housing, thus, it is important to promote aging-in-place. Home based healthcare model should have a higher emphasis in today's context to aid the older adults in getting the care they need. This facilitates better quality of life and helps the elderly remain close to their family and friends in a familiar environment during their twilight years.



Transitional Care

Elderly patients are inherently different from the younger ones. They sometimes require slightly longer time to fully recover after an acute illness episode. Some of them may need further rehabilitation in a community hospital, while some could go home straight from an acute hospital. What about those who do not fit in either of those categories? Some of these high risk patients especially the frail elderly will need to be supported at home post-acute hospitalisation to transit them safely back to their own homes and communities.

Transitional care is essentially a broad term used for care interventions that promote safe and timely transfer of patients between different healthcare settings. It originated more than 20 years ago in the United States and has since been modelled around the world with consistent positive outcomes. Usually, elderly with multiple chronic disease do not fare well with conventional intervention and they are at high risk of adverse health outcomes if not managed appropriately. Those with multiple chronic diseases and polypharmacy are at even higher risk. Transitional care model has been shown to improve quality and outcomes for frail elderly including reduction in preventable hospital admissions and total healthcare expenditure.

National University Hospital's Transitional Care Programme

In Singapore, transitional care model was introduced few years ago primarily to cater for our medically complex frail elderly. Realising the importance for this gap to be closed, the National University Hospital (NUH) embarked on a journey in early 2014 to have our own Transitional Care team; NUH2Home is thus born. NUH2Home is a Geriatrician led inter-disciplinary team consisting of nurses and allied health.



Figure 2: NUH2H team. From left Dr Ng Shu Ee, Advanced practitioner Nurse Sister Tay Yee Kian, SN Liwen Kwok, SN Nnesah Barkatun, SN Shariffa Beevi, SN May Lee, Dr Wang Mingchang, Sister Lim Ling, Sister Chua Hwee Huang and NTUC Health Muhd Jamaluddin.

Our mission is to provide high quality person-centered inter-disciplinary care service for older adults transitioning from hospital to home. It is also our way of promoting ageing-in-place by empowering caregiver to look after their loved ones at home. This at the same time enhances patient safety and satisfaction upon transitioning back to community. We also work closely with our community care partners for continuation of care.

In the past when there was no transitional care service, once patient is discharged, they would be on follow up with their respective doctors in ambulatory settings. However, we know that some patients might need a little bit more support once they get home, especially those older adults who have limited mobility. Sometimes, they might even have higher care needs compared to before the hospital admission.



Figure 3: Patient review prior to discharge.



Figure 4: Follow up by SN Liwen at patient's Home.

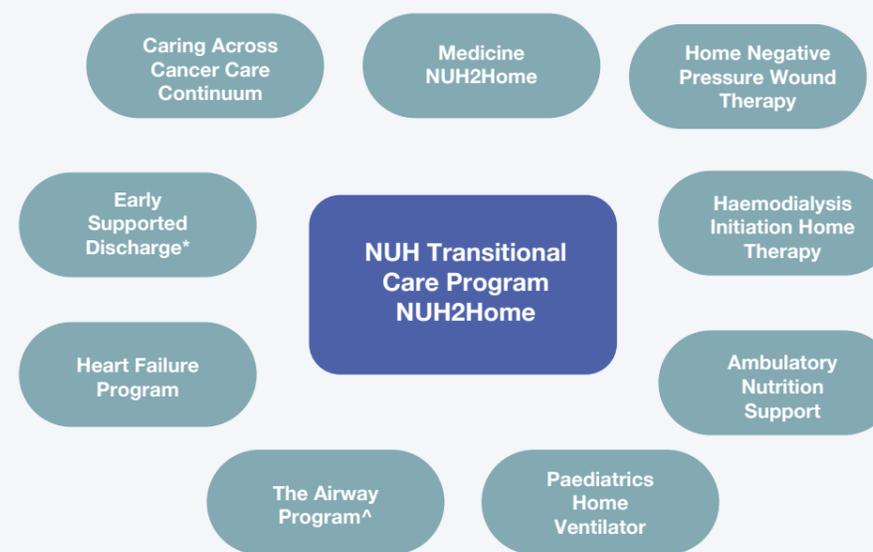


Figure 1: Sub-programmes of Transitional Care in NUH.

* Home Allied Physiotherapy and Occupational Therapy for Stroke Patients
^ Airway Diseases case management and home based follow up

For example, Madam SA benefitted from the programme when she was cared by NUH2Home in September 2014. She is an elderly lady who has limited mobility due to recurrent dislocation of her hip which is not for surgical intervention. She suffered from tremendous pain and had to be admitted to hospital multiple times for various reasons ranging from extreme pain, urinary tract infection, and pressure ulcers to delirium. NUH2Home took care of her upon discharge and made regular home visits and phone calls to attend to her increasing care needs. Painkillers were titrated, pressure ulcers advice given and monitored. She was with NUH2Home for the last 3 months of her life and eventually passed away peacefully at the comfort of her own home. This was important for her and her family and they were grateful for the service to help them tide through one of the most difficult periods.

NUH2Home is unique in many ways. We have different sub-programmes (Figure 1) to cater to a diverse range of patients' need. They could range from those who are frail and elderly to those who are undergoing cancer related treatment, or even those recently commenced on haemodialysis.



Figure 5: Nurses going out for home visits.



Figure 6: Multidisciplinary round discussing patients under NUH2Home.

Since NUH2Home started in Feb 2014, we have cared for almost 900 patients with cumulative 2000 home visits. The number of patients who will benefit from NUH2Home will only continue to rise as we have more elderly patients in the hospital. Our record has proven that in these patients, there is significant reduction in re-admission rate to the hospital and the length of hospital stay. This is reflective of the effectiveness and safety profile of the NUH2Home. On top of that, more than 90% of patient and caregivers gave positive feedback for the service.

We are very heartened by all these achievements within such a short period of time. In NUH, we strongly believe that providing a person centric care and supporting them with an inter-disciplinary approach is the way forward.

For further information on the NUH2Home please visit <http://www.nuh.com.sg/patients-and-visitors/patients-and-visitors-guide/admissions/nuh-2-home.html> or email us at Nuh2h@nuhs.edu.sg.



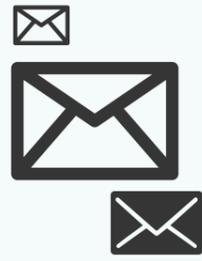
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Dr Ng Shu Ee is currently an Associate Consultant in the Division of General Medicine and Therapeutics (Geriatric Medicine), Programme Director of NUH2Home and Core faculty for the Geriatric Medicine Senior Residency Programme in NUH.

She graduated from the University of Melbourne and obtained her postgraduate qualification from the Royal Colleges of Physicians United Kingdom in 2010. Her main specialty is in Geriatric Medicine with special interest in Transitional Care for the elderly. She believes that the provision of holistic and seamless care for the elderly is essential to help them age gracefully within the community.

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Specialist in Focus: A/Prof Derrick Aw

A/Prof Derrick Aw



1 We understand that you are holding a position as a Senior Consultant in the Division of Dermatology, as well as a registered acupuncturist in NUH. Why did you choose to be an acupuncturist on top of being a dermatologist?

Dermatology was my chosen specialty because I am able to empathise with my patients. You see, I have the top three most common skin conditions: eczema, acne and urticaria! When a patient tells me he can't stop scratching even though he is fully aware that it macerates the skin and causes bleeding, I know exactly why he does that! When a patient tells me she can't stop the urge to squeeze every little pimple that pops up, I understand her compulsion and motivation to do that! When a patient tells me he is so disturbed by the erratic appearance of blobs of hives anywhere on his body, I perfectly appreciate his feelings of helplessness and embarrassment. I use my empathic ability to my advantage in clinical practice: establishing a connection with my patients and getting them to collaborate with me to manage their conditions in an evidence-based, informed and proactive way.

Since young, I had always wondered about the amazing therapeutic effects of acupuncture: no drugs, no words, no creams – yet the skillful use of a handful of thin disposable needles can make a patient happy! For some time, I have been checking out the various courses offered in China and Australia until SMA publicised an advertisement on the inaugural Graduate Diploma in Acupuncture for Doctors. I immediately signed up for it, preparing to burn all the weekends of the year on attending lectures and tutorials as well as certain weekday evenings for hands-on clinical attachments. Since exiting in 2007, I have been running weekly sessions in the NUH Acupuncture Clinic. It was quite a natural (and fortuitous) step for me because I did not want to lose my hard-earned art, unlike most of my classmates who did not find the opportunity or platform to practise acupuncture. It is with pure passion that I do this, and each successful story spurs me to go on. My most memorable encounters are relieving a middle-aged man of his long-standing trigeminal neuralgia, restoring hearing in a young man with sudden hearing loss syndrome, and ameliorating the symptoms of an old lady with crippling sciatica (she wanted to get her driver to bring me to her home to treat her!).



2 How would you describe a typical day in your clinic?

A typical day in my clinic feels frantic and passes by really fast – I usually arrive 15-20 minutes before my clinic begins. My regular cases are often split into two to four rooms to be initially or partially seen by residents/fellows as I move from room to room ensuring that every case is personally seen. In the midst of all this, I also supervise the advanced practice nurse (APN)-led surgical first-visit cases, rapid access clinic and the chronic skin disease clinics.

3 How do you see the development of tropical skin problems and treatments in the past ten years? And how would you predict it will develop further?

We don't see many tropical skin problems here, except for parasitic infestations and leprosy. Scabies is a fairly common and highly-contagious condition most often seen in long-stayer wards and nursing homes. Although many homes proactively implement anti-scabetic treatment, recurrences are not uncommon – could be due to reinfestation, incomplete treatment, or even emerging malathion resistance (personal observation). Of late, we are starting to see more patients with lice infestations on the head (previously lice were more frequently seen as a sexually-transmitted disease). It's too early to comment if this is the beginning of an epidemic. About 1-3 cases of leprosy are newly-diagnosed in our clinic every year; these are all non-resident patients. I don't think this trend is going to change any time because of the nature of this disease – its incubation period is uncertain – and it is generally a disease of the developing countries. To make things worse, we have to extradite these patients to their homelands (thus cutting off their employment) until they are successfully cured.

4 Could you tell us more about your role as clinician – educator at Yong Loo Lin School of Medicine, National University of Singapore?

I am the Undergraduate Phase III Medicine Director, and I champion practical and innovative teaching initiatives for my students (e.g., we started the grading template used in mini-CEX assessments, we rolled out a template for case write-ups and reflective journals, we organised the yearly super-preparatory course, where I use a modified team-based approach to conduct Medicine tutorials for the class). I teach in every clinical skills foundation course. I write, vet and modify examination questions. I take students on their longitudinal patient experience programme every year. I teach in courses organised by Centre for Medical Education. A keen believer in the learning utility of assessments, I enjoy writing such books in Medicine - I am now in the works for my 4th book!

5 Do you have any tips to share with our primary care physician in managing patients with common skin problems, such as acne, eczema, and psoriasis?

First general tip: Do not underestimate the effects these conditions have on your patients. There is a notable lack of correlation between the clinical severity of these diseases and quality of life! Second general tip: Always check on adherence to medication. Poor compliance is the most common reason for failure of response in dermatology. Find out the reason(s) for it – many times it

is due to intolerance or dislike of the texture of the topical product rather than actual ineffectiveness. Third general tip: Most chronic skin conditions need maintenance treatment of some sort upon apparent clearance. For example, when acne has cleared, ensure that your patient continues to apply a retinoid on the face every evening for a couple of years; when eczema has cleared, suggest that your patient continues to apply the steroid cream on the lesional area(s) twice a week for a few weeks before completing stopping it.

6 Lastly, how would you describe your dream holiday destination?

I like peaceful and calm places, but not with a total isolation and silence. I like heights, but I also like the sea. Because of my eczema, I prefer cool (perspiration in hot weather aggravates eczema) but not cold (coldness is associated with very low humidity which makes the skin more dry) holiday destinations. Because of my chronic neck and low back pain, I generally do less strenuous holiday activities while I like frequent strong massages. Is there somewhere you can recommend?



UPCOMING EVENTS +

Medico Apr - Jun 2015 Edition

20 June 2015

Common GI Issues in Children

Khoo Teck Puat – National
University
Children's Medical Institute
NUHS Tower Block Auditorium
2.00 pm – 4.00 pm

4 July 2015

NUH Cardiac, Thoracic, and Vascular Surgery Updates

National University Heart Centre
Singapore
NUHS Tower Block Auditorium
2.00 pm – 4.00 pm

Event information listed is correct at time of print. While every attempt will be made to ensure that all events will take place as scheduled, the organisers reserve the rights to make appropriate changes should the need arises. Please refer to our events calendar at www.nuh.com.sg/nuh_gplc for more updates and information.

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