

HONG KONG COLLEGE OF PHYSICIANS  
香港內科醫學院

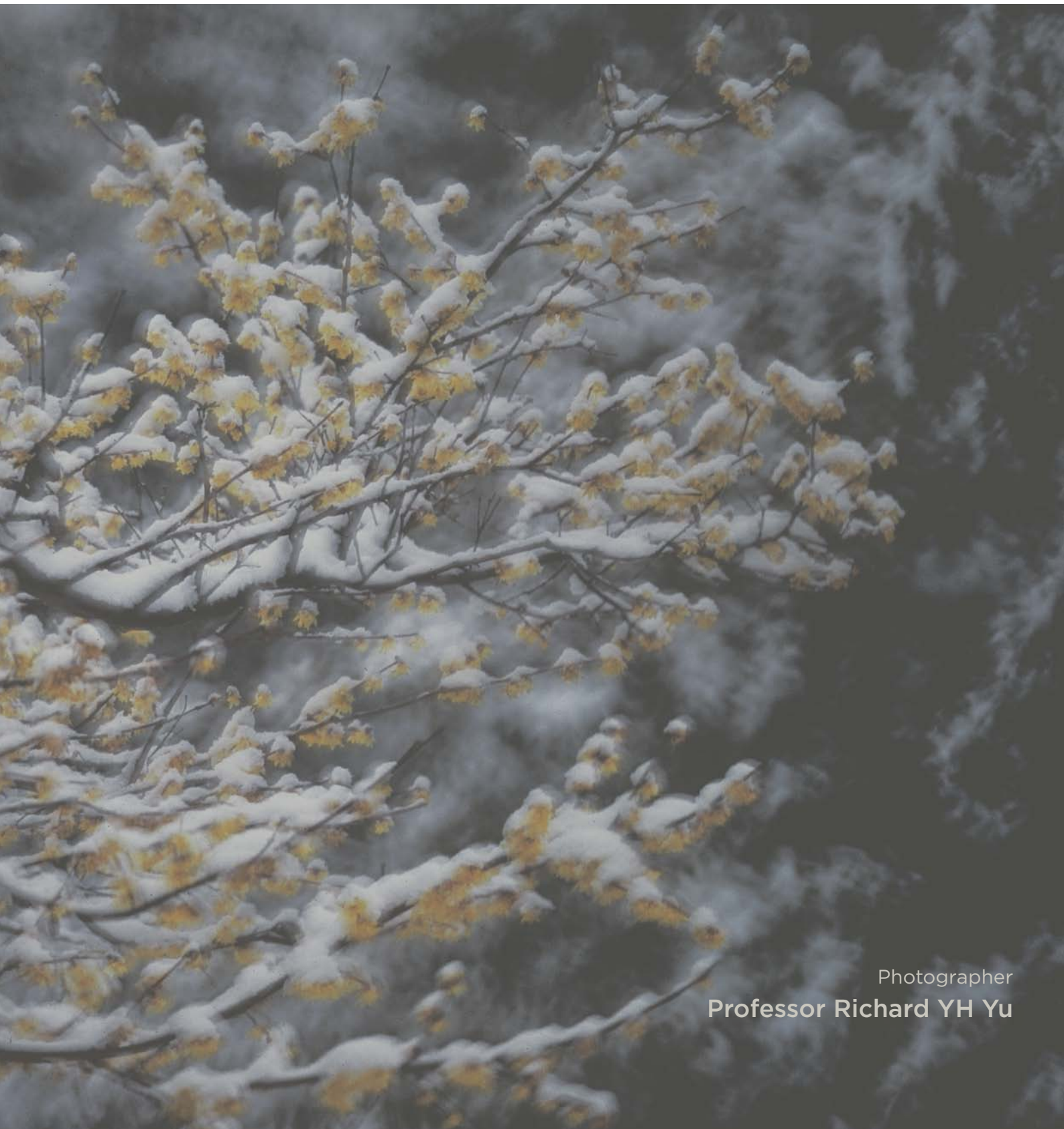


HONG KONG COLLEGE OF PHYSICIANS

# SYNAPSE

RESTRICTED TO MEMBERS ONLY

MARCH 2018



Photographer  
Professor Richard YH Yu

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## Editors Message

The Synapse editorial team wishes our readers a happy new year as we welcome the Year of the Dog.

We hope our readers enjoy this edition which is packed with the activities of HKCP to promote scientific research, to deliver clinical updates and provide practical tips to our trainees. Also, there are articles on the creative links between music and medicine, the ethics of HIV medicine and which pay tribute to our beloved late leader, Sir David.

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香港內科醫學院



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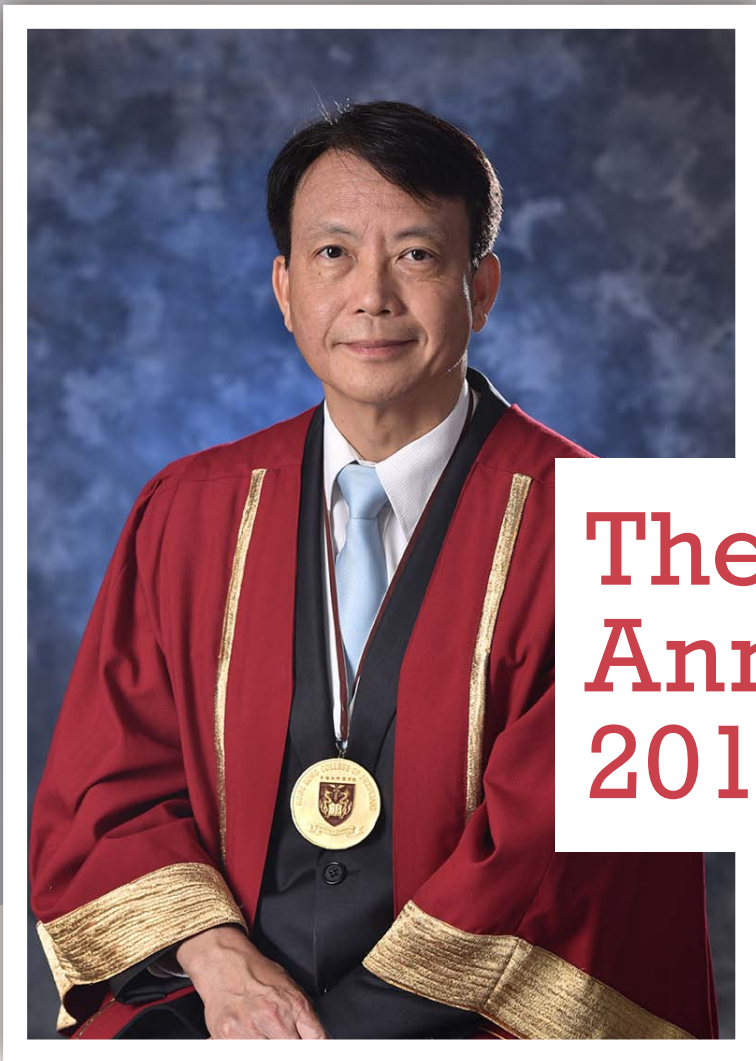
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# The President's Annual Report 2017

**Prof Philip Kam Tao LI**

President, HKCP

It is with extreme sadness that the College mourns the loss of our dearest Professor Sir David Todd, our Founding President. A memorial service co-organised by the College was held on 2 October 2017 for the public to pay tribute to Prof Todd. We will also publish a memorial book to commemorate Prof Todd.

A College Retreat held on 4<sup>th</sup> March 2017 has discussed the important areas related to the College development: Workforce of Physicians – “Manpower related to attraction & retention”, Workforce of Physicians – “Training for trainees and fellows”, College Affairs – “Public image

and advocacy on public health issues” and College Affairs – “Enhancement of academic activities”. This Retreat was well attended by members of College Council, Education and Accreditation Committee, all Specialty Boards and representatives from Coordinating Committee of Medicine of Hospital Authority. Our College feels that addressing workload and manpower provision are important elements in enhancing training and professionalism in our physician field.

The reports of the Standing Committees provide details of their activities and achievements

over the past year. I wish to take this opportunity to thank their Chairpersons and Members for their contribution in upholding the standard of physician training. Some of the important issues have been highlighted below for attention of our Fellows.

Over the past year, our Education and Accreditation Committee (E&AC) has defined the contents of training guidelines of all specialties. The updated version has been uploaded on our College website. Our College also applied to the Medical Council of Hong Kong on a new subspecialty “Clinical Toxicology” to be included in the Specialist

Registry. The new subspecialty is under the Subcommittee in Clinical Pharmacology & Therapeutics of our College. In response to the directives from the Academy, our College has established a Credentialing Committee under E&AC. Its members include representatives from various Specialty Boards and Subcommittee. Our College also nominated representatives from Critical Care Medicine, Gastroenterology and Hepatology and Respiratory Medicine Boards to membership of the Working Group for updating the Guidelines on Procedural Sedation.

Our College always maintains a close relationship with the overseas sister Colleges. In May 2017, I attended the Royal Australasian College of Physicians' annual Congress. In July 2017, I participated in the 51<sup>st</sup> Singapore—Malaysia Congress of Medicine. In September 2017, I, together with representatives from Cardiology and Respiratory Medicine Boards, delivered lectures at a Summit on Resident Training organised by the Chinese Medical Doctor Association in Beijing on highlighting the training conducted by the Hong Kong College of Physicians. I particularly highlighted on the dual accreditation of a broad based physician training and the specialty training in our College.

The College has established a Young Fellows' Committee with a view to enhancing the communication with our Young Fellows in the College. I have asked the Standing Committees and the Specialty Boards to include a young fellow or trainee to enhance communications. Two career talks were organised in June and August 2017 with excellent responses. Besides, the HKCP Scholarship for Medical Students was announced. One of the main objectives is to support and encourage medical students in Hong Kong to undertake clinical or laboratory attachment/research pertaining to the practice and advancement of internal medicine at overseas institutions.

In the recent summer flu season, the stress on public system in the medical wards has been magnified. I, on behalf of the College, have voiced out in the media briefing to the public about the stress to the physicians. Our College has written a letter to the Secretary for Food and Health Bureau to elaborate all the above issues and notably on the deficit of physician manpower in the public health care system.

Another area our College has been working on is the development of clinical practice guidelines. Currently we have collaborated with the Central Renal Committee

of Hospital Authority on drafting the Clinical Practice Guidelines for renal service in Hong Kong. This was also supported by the Hong Kong Society of Nephrology. A Forum was held on 2 July 2017. The Guidelines are likely to be published in a medline indexed journal. The College encourages all specialties to publish guidelines that can update the knowledge based on international evidences and at the same time relevant to the local clinical settings.

The smooth operation and steady progress of the College owe a lot to the contributions of Chairmen and Members of the Specialty Boards as well as Committees. I would like to thank our two Vice-Presidents of their dedication in overseeing training and international liaison. I am also very grateful to our Honorary Treasurer for his very shrewd book-keeping such that the College remains in a healthy state financially. I would like to express my gratitude in particular our Immediate Past President and Senior Advisor for their unfailing support and invaluable advice over the year. My final vote of thanks goes to our Honorary Secretary and the hardworking and dedicated secretarial staff in maintaining smooth operation of the College.

# The President's Address to New Fellows and Members

Prof Philip Kam Tao LI President, HKCP

Dear all New Fellows and Members,

I would like to congratulate all of you to become the New Fellows and Members of our College. You must feel the distinct pleasure to have such a joyful moment to celebrate with your family, your friends and your seniors who are in the audience. Your hard work has paid up and at the same time, you should appreciate all who have supported you in your journey to success.

May I ask all the New Fellows and Members to rise:

Wave your hands to your family, your friends and your seniors in the audience who have supported you to show your gratitude.

Thank you.

The life as a physician, both in pre-Fellowship and post-Fellowship years, is full of challenges. I hope our College can be a partner with you to face these challenges, be it now or in future.

Last year, our College celebrates the 30<sup>th</sup> anniversary. We have now close to 1,800 fellows and

over 300 Members and 560 Trainees. We will try to increase our role further in Enhancing Professionalism, with a view to support you more as our fellows and members.

A **College Retreat** held earlier this year has discussed 4 important areas related to the College development: **the first two on Workforce of Physicians – Manpower related to Attraction & Retention” and Training for Trainees and Fellows; the other 2 on “College Affairs - Enhancement of academic activities and Advocacy on public health issues and Public Image.** Our College feels that addressing workload and manpower provision, especially in the public sector, are important elements in enhancing training and professionalism in our physician field.

In the recent summer flu season, the stress on the public system in the medical wards has been magnified. This has not only brought about a huge challenge and workload to the

public healthcare system, but also exposed an enormous gap and inadequacy in the existing service provision in Internal Medicine for the local population, exaggerated by the rapid ageing and multi-morbidities. In fact, the inadequacy has not been an isolated event due to the “summer surge”. The bed occupancy of Medical wards in most public hospitals has constantly exceeded 100% in the past years, and the limit has frequently been stretched to over 130% in certain hospitals during the peak seasons. Unfortunately, such an increase in workload, both in general and specialty medical services, has not been matched with a parallel injection of manpower in physicians from the Hospital Authority and the Government, with an estimated deficit of at least 100 doctors in the public medical workforce in physicians, just to fill the gap.

I am glad that Prof Sophia Chan, **Secretary for Food and Health** can join us tonight as our honorable guest. HKCP has proposed to the Government to increase resources into the public



system to employ more doctors in the public sector. Our College would urge our Government and HA to prioritize the replenishment of the observed gap in the physician manpower of the Departments of Medicine in HA. Experienced and senior physicians are required for the provision of service and training of the junior ones highlighting the importance in retaining them. The College would propose having protected training time for HA doctors in Internal Medicine in order to strengthen the quality of training and service provision for our patients.

Another area our College has been working on is the **development of clinical practice guidelines**. The first we have developed is in collaboration with the Central Renal Committee of Hospital Authority on drafting the Clinical Practice Guidelines for renal service in Hong Kong.

Our College continues to work with the Government on Review of Regulation of Private Healthcare Facilities of the Food and Health Bureau. Senior physicians from

our College serve as Convenors of the Task Forces on Endoscopy, Chemotherapy and Haemodialysis. The College supports upholding the standards of these ambulatory procedures for the whole of Hong Kong.

The enhancement of professionalism cannot be materialized without the injection of new blood with enthusiasm and passion for the practice as a physician. **The College has formed the Young Fellows' Committee** this year and we now have Young fellow representatives in all our standing committees as well as our specialty Boards to have more voices and input from you. The Young Fellows Committee has already organized two very successful **HKCP Career Talk for Medical Graduates** in Prince of Wales Hospital and in Queen Mary Hospital in summer respectively.

The early exposure to the wide range of opportunities in the field of physicians would be very beneficial for our medical students to be interested in the career as physicians. We have established

the **HKCP Scholarship for Medical Students** to support and encourage medical students in Hong Kong to undertake clinical or laboratory attachment and research pertaining to the practice and advancement of internal medicine at overseas institutions. The Deans of the two medical schools welcome this programme with enthusiasm.

**The HKCP Distinguished Research Paper Award, Young Investigator Research Grant and the newly set up Sir David Todd Memorial Scholarship** from our College are to enhance the professional training and research of our trainees and young fellows. I encourage all of you to take advantage of these from our College in your career development.

The support from all of you, as new and current fellows and members is vital for the College to do more for Medicine in Hong Kong.

Once again, congratulations to you all and welcome to our big family of the College of Physicians.

22<sup>nd</sup> AJS McFadzean Oration 2017

# Apollo's Legacy: MEDICINE A

**Prof Gabriel Matthew LEUNG**

Dean, Li Ka Shing Faculty of Medicine  
The University of Hong Kong

Secretary Chan, President Li, honoured members of Council, President Lau of the Academy, Presidents and Officers of the other Academy Colleges, fellows, distinguished guests, ladies and gentlemen,

When President Professor Philip Li rang just before the summer inviting me to deliver the 22<sup>nd</sup> McFadzean lecture, I leapt at the opportunity for two reasons. First, becoming a McFadzean orator is a warm reassurance that I may have finally arrived, having resettled back home for the better part of two decades. More importantly, it was a rather unusual request for a named lecture to have specified the topic a priori, as opposed to allowing the speaker to decide on one's pet subjects usually related to his or her professional expertise. I have been designated to speak on medicine and music. Indeed two successive McFadzean orators, my distinguished predecessor Professor Joseph Sung and yours truly, were previously miscast by our raucous media in an apparent spat over my real domain – medicine or music. Of course nothing could be further from the truth and our cordial relationship is more accurately depicted in this

photograph taken during a recent shoot for a 20<sup>th</sup> anniversary-related RTHK documentary. In any case, the present occasion affords an opportunity to not only clear the air, but also allows me to share a few random thoughts on the topic of the College Council's choice. As the wise aphorism in *The Analects* goes: “夫如是，故遠人不服，則修文德以來之。既來之，則安之。”

The provenance of the aforementioned media incident came from an interview at the beginning of my deanship when a once popular weekly magazine branded my personal profile with the action news (動新聞) headline: “阿爸逼我讀醫”. In it I shared my mental struggle as a high school leaver whether to pursue medicine, a longstanding career ambition since I had been little perhaps affected by my sickly childhood, or music, a romantic adolescent dream. The whole affair settled, as with most things in my family, with my late father's no-nonsense decisive declaration: I was to study medicine or else...so that was that!

The reason I bring up those distant memories from three decades ago is because they ring echoes with what I still hear now as dean every

year during student recruitment. Many of our students, and indeed not a few alumni, are excellent musicians in their own right. For instance, here are but a few superb performing artists who could have made a decent living as professional musicians but chose to pursue medicine first and foremost. As it happens, those shown are all orthopaedic surgeons – intriguing association although hardly causal. There are yet many more *aficionados* who are an informed and supportive audience. Earlier in June, we were able to showcase the musical talents of our students and alumni to a packed house at our 130<sup>th</sup> anniversary concert.

Here you have just heard the resurrected University Anthem performed for the first time by a chorus and orchestra composed mostly of HKU students and alumni, unlike the official recording often played during ceremonial occasions or indeed at its première a century back. The performance was also the last time the late Professor Sir David Todd attended a concert, which incidentally he thoroughly enjoyed. This is a bitter-sweet memory that still stirs the heart every time I think about it.





# N D MUSIC

Coming back to the story of our burgeoning physician-musician tribe, the flip side however is that nowadays many aspiring parents who wish their children to become doctors, or even the students themselves, have confused this apparent association of musical and medical tendencies with causation. In fact, a chain reaction has been set off in the past 20 years as follows: admission into medical school (with a brief exception during the dotcom bubble) has been increasingly competitive, principally triggered by the sudden and drastic reduction of places following the 1997 Asian financial crisis, through SARS and then the 2007-8 global financial tsunami (which has only been corrected very recently) and cessation of recognising Commonwealth qualifications just before the repatriation in 1997. The projected continuing dire shortage of medical manpower in the coming two decades has only made medicine even more of a lucrative career choice for high school leavers.

In parallel, there has been progressive *a priori* quality differentiation of school types, importantly including the direct subsidy scheme (or DSS) schools,

the so-called “international schools” both locally and overseas, in addition to the more traditional elite grant schools and top government schools. Virtually all these schools have enhanced their curricula around the pedagogical ideal of whole-person development, especially experiential learning and participation in team sports and music and the performing arts. This reorientation is backwards reflected in a more and more discriminating admissions process for high school, primary school, stretching back all the way through kindergarten and even pre-nursery. In response, parents have pushed their children to take up musical instruments of all sorts, and of increasingly exotic variety at that, hoping that this would give them an edge to gain entry. Of note, even the contemporaneous slump in total fertility rate, reaching a nadir of 0.9 per woman not so long ago and only recovering to about 1.3 currently, has not threatened their ever desirability, given that these elite schools are only vying for a tiny fraction of the overall pupil pool. Once the students are admitted, they find that their musical talent is nurtured and honed through annual competitions, locally and abroad, which have garnered awards aplenty

for the schools, thus setting up a positive, self-reinforcing feedback loop.

Therefore the conflation of a medical human resources shortage, thus desirability of medicine as the preeminent career choice for high school leavers, with a more differentiating quality gradient, whether real or perceived, amongst elite schools has sharpened the selection for the musical trait in prospective undergraduate recruits. Not intending any puns, the “instrumental” value of a musical education outside as well as inside the formal curriculum from a very early age has commensurately increased.

The recency of this accelerated selection pressure notwithstanding, music has in fact always been a pastime for the bourgeoisie including doctors. Many people could rhyme off the famous 3B’s of classical music, who are of course Bach, Beethoven and Brahms. Less commonly known however is that the third “B” had originally been Berlioz, of *Symphonie fantastique* fame. Even more obscure was the historical footnote that the 18-year-old Hector Berlioz was first a medical student in Paris. He

advanced so far as what in our system was the “first MB”, before having been attracted away by the operas of Gluck at the Paris Opera. He eventually enrolled at the Paris Conservatoire, but not before having been embroiled in an eight-year-old tussle with his family over pursuing music as a vocation. Evidently he won his father over where I failed. Berlioz worked incredibly hard to win the famed Prix de Rome for aspiring composers, and the rest, as the saying goes, is history.

There are in fact an additional 3B's whose careers straddled medicine and music, namely Billroth, Boerhaave and Borodin. Borodin is more popularly known as the composer of *Prince Igor* whereas his full-time profession had actually been Chair of Chemistry at the St Petersburg Medical-Surgical Academy. In other words, he was chair professor of a preclinical discipline at the medical school. He published a series of seminal papers on aldehyde chemistry and his name is immortalised by the Hunsdiecker-Borodin reaction.

Even amongst internists, we would all recall learning about Theodor Billroth's eponymous abdominal operative procedures, the Billroth I and Billroth II. He pioneered many surgical firsts – the first gastrectomy, the first laryngectomy, the first oesophagectomy, and so on. In contrast to Berlioz and Borodin who are better remembered by their musical than medical achievements, Billroth's talents as a violinist and pianist have largely been forgotten. He was in fact one of Brahms' closest friends, whom trusted Billroth's musical sense so much that many of his draft scores were first sent to him for comments. Brahms' first two string quartets were dedicated to Billroth. The former chair of surgery at Zurich then Vienna once proclaimed: *“It is one of the superficialities of our time to see in science and in art two*

*opposites. Imagination is the mother of both.”*

By way of this X ray let me introduce the final “B”. The most astute clinicians amongst you wouldn't need the radiograph to make the diagnosis, after having taken a history of lower chest pain, retching and vomiting, and a recent history of an OGD. But with this X ray clearly showing subcutaneous emphysema, Mackler triad has been fulfilled and the eponymous syndrome is made. The CT showing pneumomediastinum, and free gas in the soft tissue spaces of the neck, around the great vessels, chest wall and the epidural space of the spinal canal confirms the diagnosis definitively. Herman Boerhaave took his first lessons in the lute when he was a young medical student at Leiden, then went on to become a very respectable amateur player throughout his life.

Closer to home and in time, certainly McFadzean himself was an avid music fan. His disciples, like the late Sir David Todd was a most discerning musical connoisseur. I still revel in the wonderful chamber musical moments at Schwarzenberg on the recommendation of the late professor. He used to attend with Dr Betty Young, former Chief of Service in Paediatrics at Pamela Youde Nethersole Eastern Hospital and a HKU Class of 1976 alumna. No less your Senior Advisor Professor Richard Yu was once reminded not to neglect the musical side of his education by Sir David more than half a century ago, shown here in an inscription on the inside cover of a book on Wagner's operas.

Surely music amongst our ilk is not limited to internists but cuts across, with the pun fully intended this time, to the surgical disciplines. While the type of music aired in operating theatres can sometimes be a bone of heated contention around the world, I know many

surgeons who would swear that they could not possibly slice, burn and suture without their favourite tunes stimulating the motor cortex via the Brodmann areas.

In fact the importance of being able to choose one's own music extends to patients who are on ventilatory support in intensive care. Compared to noise-cancelling headphones and usual care, those who are played their choice of music are less anxious and require less frequent and intense sedation. In another study, patients undergoing surgery under spinal anaesthesia with light sedation to the level of giving a lethargic response when called by their name, were randomised to being played music or the sounds of breaking sea waves at the same volume. Those in the music-listening group had lower propofol consumption, and lower cortisol levels, compared to the non-musical control group. Nevertheless I should not wish to leave you with the impression that the state of the science is conclusively in support of the healing powers of music, however much I enjoy and practise it as a favoured pastime. A 2012 Cochrane review of all published studies of the effects of music in hospitalised patients show general but not unequivocal benefits where much better and more research is still required.

On a related note, music therapy has become an actively pursued novel frontier as *bona fide* adjunct therapy in some conditions, such as stroke rehabilitation. The following edited video clip explains how the mesolimbic dopaminergic system could potentially mediate exposure to pleasurable musical stimuli and cognitive or even motor functional recovery. Menon and Levitin at Stanford provided some of the first experimental evidence supporting such mechanisms about a decade ago. More recently, Säkärmö and Soto published two clever

sets of experiments in the *Annals of the New York Academy of Sciences* showing that music may also improve cognitive outcomes through enhancing positive emotional responses, perhaps mediated by neural plasticity, given that cognition and emotion are demonstrably tightly linked. A third mechanism that has been posited concerns the glutamate-NMDA complex. Rat brain studies have shown that an enriched soundscape could upregulate the expression and receptor function of NMDA in the auditory cortex and anterior cingulate, and in contrast sound deprivation could reduce NMDA receptor expression. This then forms the putative path of memory recovery amongst recovering stroke patients. Finally, neurogenesis, synaptic plasticity and axonal myelination elicited by an enriched sound environment may contribute to adaptive rewiring of the brain through molecular and structural plasticity.

So we are really just scratching the surface of the many and myriad neural pathways underlying the potential effects of music on health and disease. In time with the brain mapping projects of China, the EU and US steaming full speed ahead, much more will surely be discovered and uncovered.

Regardless of the specific mechanisms however, whether one should prescribe music as a low-cost, little-risk intervention, and indeed whichever songs one chooses to listen to, whether by surgeons, anaesthetists, psychiatrists or patients in the OTs, ICUs or rehabilitation wards, the following must surely top the charts.

Aside from getting oneself admitted into medical school, improving surgical performance, reducing anaesthetic and anxiolytic use, facilitating rehabilitation and so on, music can be used to describe the mastery of clinical medicine.

Let me explain. Except for the jazz *cognoscenti* in the audience, have the rest of you ever wondered how musicians in a jazz band manage to improvise apparently at will, teasing out a seemingly unlimited number of variations that are different every time a piece is performed, all from memory and never getting out of sync with one another? It is in fact remarkably like how expert clinicians make a diagnosis of a condition they have never seen or surgeons overcome challenges imposed by rare anatomical anomalies in a bloody operative field. In medical school, we start with learning the basic sciences that provide the lattice on which clinical knowhow is built. Similarly in jazz, the drums and bass, and occasionally the piano, usually form the musical frame around which the solo instruments carrying the melody revolve. In both jazz and medical practice, the more expert one becomes, the more effortless flexibility there appears to be, even brilliant flourishes that lend an air of elegance to the outcome. Key to it all is the constancy of the structured outer frame that gives a robust architecture, thereby yielding a predictable pattern against which artistry can develop. Therein lies the Florestan and Eusebius of music, or the art and science of medicine.

Let me now illustrate what I just described by playing you one of the most popular pieces of jazz music. Incidentally a prize awaits whomever first comes to me with the name of the piece we just analysed.

Ladies and gentlemen,

Let me finish this talk by returning to its title – “Apollo’s legacy: medicine and music”. Apollo, as the Greco-Roman scholars amongst you will recall, is the Greek god of healing and of music, as well as god of light, sun, truth, prophecy, plague and poetry. As you can tell, he was a rather busy, omnibus god. He represented the ideal of *kouros*, as depicted in this,

which is a sculptural genre of the beautiful, beardless athletic youth. His connection with medicine has been perpetuated through one of his more famous sons, Asclepius and his iconic staff and coiled serpent, which incidentally graces your College’s crest as it does the Academy’s, the World Health Organisation’s and many other medical organisations’. The Apollonian lyre that symbolises the Greek god’s patronage of music is seen here in a statue atop Palaise Garnier, home of the Paris Opera that so captivated the young Berlioz when he was a medical student. Here is another example of Apollo the musician with his choir of the nine Muses in a John Singer Sargent commissioned mural in the rotunda of the Museum of Fine Arts in Boston, which incidentally is a ten-minute walk away from where I studied public health.

So, if in the future should anyone ever again doubt the inextricable link and relevance between the twinned art of healing and of music, I trust I have provided sufficient justification from 8<sup>th</sup> century BC to the latest neuro-immuno-psychiatric experimental postulates. As healers in 21<sup>st</sup> century Hong Kong, Apollo’s legacy is ours to perpetuate in its best tradition. Once again thank you so much for making me a part of the legacy of the McFadzean orators. I shall end by playing you a newly commissioned song to celebrate the 130<sup>th</sup> birthday of my school and that of many in this august audience, the HKU faculty of medicine. Let the students, as always, have the last word.

# GERALD CHOIA MEMORIAL LECTURE

## Aids to Medical Ethics and Internal Medicine Practice



**Dr. Patrick Chung Ki LI**

Neurology Centre,  
Hong Kong Sanatorium Hospital

The emergence of the AIDS pandemic in the 1980s posed a challenge to the medical community to re-examine and reinforce the ethical principles of its clinical practice. Relatively little was known about this transmissible disease for which there was no treatment or cure. There was considerable fear and irrational responses among the public and even with some healthcare professionals towards this deadly disease and the infected individuals were often stigmatised. Issues of debate included disclosure of infected status, consent for HIV testing, need for isolation and access to medical care. Hong Kong has adopted the principles of universal standard precautions in managing the transmission risk, respecting individual patient rights in obtaining consent before HIV testing and disclosure of diagnosis, and ensuring no discrimination in the healthcare process.

The medical care of the HIV-infected patients calls for all-round knowledge and application of the principles of internal medicine. There is a need for good communication skills and empathetic and non-judgmental attitude so as to develop rapport and trust with the patient. As different organ systems can be affected by HIV, the opportunistic diseases and complications of treatment, the clinician needs to have good mastery of general medicine. In-depth assessment of the patient's social background and risk behaviour is necessary to tailor the treatment regimen and devise strategy to limit on-going HIV transmission. The complex physical and psychosocial issues faced by the patients call for the ability to mobilise a multidisciplinary team to address the care needs.

During the first decade of the AIDS pandemic, there was no effective

treatment available and the main objectives were to prevent and control opportunistic diseases and provide palliative care. The patients were desperate to try alternative and experimental treatment to stabilise their health. The clinician needs to have an open yet evidence-based mindset to foster a positive attitude in the patients and yet not create false hopes. Lifestyle modification to enhance physical and psychological well-being and prevent secondary HIV transmission needs to be reinforced.

HIV medicine is one of the branches of medicine that has the fastest evolving research and clinicians caring for the infected individuals need to keep current of the latest advances. By the late 1990s, combination antiretroviral therapy became available and the outlook for patient survival was significantly improved. For

the first time sustained virological suppression can be achieved and immune function restored. Rehabilitation and reintegration into the community became important components of the treatment strategy. The antiretroviral regimens were however complicated and associated with significant side effects and drug interactions. There may also be initial deterioration in the clinical condition resulting from rapid immune reconstitution. Strategies to optimise medication adherence and prevent and manage the long term metabolic complications became important considerations in the care of the HIV-infected individuals. As combination antiretroviral therapy is not a cure for HIV infection, life-long treatment is necessary and the high cost has resulted in difficulty in accessing care especially for those living in resource-limited countries or lacking insurance coverage.

In the past few years, there have been further advances in antiretroviral therapy. The regimens have become simplified, much better tolerated and with improved safety profile. Sustained virological suppression can be achieved for extended duration so long as treatment adherence can be maintained. It is now recommended that all HIV-infected individuals should start antiretroviral treatment irrespective of the stage of disease. However, a large proportion of the infected individuals are still diagnosed late and the rate of infection is again on the increase due to new risk behaviours. Antiretroviral therapy has assumed an important role in limiting the spread of HIV, by rendering the infected individuals less infectious, and in providing post- and pre-exposure prophylaxis to at-risk individuals. The new paradigm of “treatment

as prevention” has put HIV testing and contact tracing in a different perspective from the early days of the pandemic.

While the AIDS pandemic has caused devastation to many communities around the world over the past 36 years, the medical community has learned a lot from the experience in tackling the challenges to mitigate its impact. The ethical principles and clinical skills required for the care of the HIV-infected individuals are equally relevant in our management of patients with various medical illnesses. With the extended survival of the HIV-infected patients and their propensity for developing various chronic medical illnesses as they age, physicians of various specialties will increasingly be called upon to provide their expertise.



# ANNUAL SCIENTIFIC MEETING

(21-22 October 2017)



From left: Dr Patrick Li, Prof SC Ng and Prof Richard Yu



From left: Prof Kathryn Tan, Prof Philip Li, Dr CS Chiang and Prof Daniel Chan



From left: Prof Eric Tse and Prof Daniel Chan

### Symposium 1 Transplantation in Hong Kong: Past, Present and Future



Dr Chow Kai Ming



Dr Fung Yue Yan James



Prof Lie Kwok Wai Albert

### Symposium 2 Update on Endocrine Disorders



Dr Choi Cheung Hei



Dr Lee Chi Ho Paul

### Symposium 3 Immunotherapy for Cancers



Dr Ho Chung Man James



Prof Kwong Yok Lam

The College organised the Annual Scientific Meeting on 21-22 October 2017. The Meeting covered a wide range of hot topics in Medicine with symposia themes such as "Transplantation in Hong Kong: past, present and future", "update on Endocrine Disorders", "Immunotherapy for cancers".

Highlights included the three prestigious named lectures.

Professor Gabriel Leung, our distinguished AJS McFadzean Orator delivered an impressive lecture titled "Apollo's legacy: medicine and music". The Gerald Choa Memorial Lecture was delivered by Dr Li Chung Ki, Patrick on "Aids to medical ethics and internal medicine practice". The Sir David Todd Lecture medal was presented to Professor Ng Siew Chien for her work entitled "The Inflammatory Bowel Disease

Tsunami - A Journey to Prevention and Cure". The Richard Yu Lecturer in 2017 was Dr Yiu Kai Hang. He delivered the lecture "Cardiovascular manifestation in systemic inflammatory disorders". Winners of the College's prizes for the Best Thesis Awards and the Distinguished Research Paper Awards for Young Investigators 2017 presented their work on the second day of the meeting.



# 30<sup>th</sup> Annual General Meeting 19<sup>th</sup> Congregation and Annual College Dinner

At the AGM held on 21 October 2017, Prof Philip Li delivered the presidential report which summarized the work and achievements of HKCP during the past year. In addition, the College mourned with immense sadness the passing away of Prof Sir David Todd, our Founding President, in August

2017. During the Congregation, the College paid a tribute to late Prof Todd and announced the establishment of the Sir David Todd Memorial Scholarship.

New Fellows and Members were admitted during the Congregation held at the Annual College Dinner.

This occasion was well attended by new and old Fellows alike, along with their family members. During the annual dinner, Prof Gabriel Leung delivered the 22<sup>nd</sup> AJS McFadzean Oration. The President presented all the College awards for best academic achievements in the year 2016-2017.



First row (from left to right): Prof TM Chan, Prof Richard Yu, Prof Rosie Young, Prof Philip Li, Prof Sophia Chan, Prof Gabriel Leung, Prof KN Lai  
Second row (from left to right): Prof Anthony Chan, Dr Johnny Chan, Dr Patrick Li, Prof CS Lau



From left: Prof Philip Li and Prof Gabriel Leung



# HKCP Co-organised Event - Joint CME Course with Hong Kong Society of Nephrology and the Asian Pacific Society of Nephrology

**Prof Sydney Chi Wai TANG**

Chairman, Hong Kong Society of Nephrology  
Chairman, BPT Board, HKCP



HKCP and APSN President, HKSAN Chairman and Council Members, Invited Speakers together with participants from Australia and 11 LMICs in Asia

On 30 Sep 2017, the Hong Kong Society of Nephrology (HKSAN) co-organized this first ever Joint CME course with the Asian Pacific Society of Nephrology (APSN) and the Hong Kong College of Physicians to promote medical education not only within the local nephrology community but also among local physicians and young clinicians in training from the Asia Pacific region. The former was made possible through the HKCP offering free registration and providing the iconic venue at the Hong Kong Academy of Medicine. The latter was made possible through a joint sponsorship between HKSAN and APSN to enable participation by trainees in nephrology from low-to-middle income countries (LMICs) from our neighbourhood. In addition, the APSN also contributed speakers who are also eminent figures from their

own countries including the President of the Chinese Society of Nephrology, Honorary President of the Taiwan Society of Nephrology and the Chief of Nephrology of Tokyo University who served the APSN as the CME Committee Chair. We have tapped 2 speakers for the HKSAN Annual Scientific Meeting (ASM) to take place the following day to also speak at the CME course – they were the President of the International Society of Nephrology and a Councillor of the American Society of Nephrology. Finally, 2 dialysis physicians from British Columbia (BC), Canada were among the speakers as they were also faculties at the HKSAN-BC Renal Agency joint symposium at the HKSAN ASM. Together with local experts, this plethora of speakers put up a diverse and highly educational program for the CME course that attracted

a full house of 103 participants, including 55 HKSAN members, 13 HKCP fellows/members, 5 non-members, 22 trainees from 11 low-to-middle income countries (Cambodia, Guangxi of China, India, Indonesia, Malaysia, Myanmar, the Philippines, Sri Lanka, Thailand, Vietnam) and 1 from Australia. For environmental protection, the program book was entirely paperless and accessible via a 2-D barcode on the participants' badges and can be downloaded onto handheld devices at the fully wifi-equipped lecture hall. All in all, this endeavour has been successful as reflected by the very positive feedback from the evaluation returned by the participants, and the fruitful exchange of knowledge that took place during this truly international CME course in terms of speakers and participants.



**Group photo of all local and overseas participants**

Front Row : L-1 : Prof Susan Quaggin, USA, HKSAN Chan Woon Cheung Visiting Professor; L-2 -Prof Sydney Tang, Chairman, HKSAN; L-3: Prof Richard Yu Senior Advisor, HKCP and HKSAN; L-4: Prof Masaomi Nangaku, Japan, APSN CME Chair; L-5: Prof David Harris, President, ISN, Australia, HKSAN Richard Yu Visiting Professor; R-3: Prof Philip Li, President of HKCP and President of APSN; R-2: Prof Xueqing Yu, China, President, Chinese Society of Nephrology; R-1: Prof Hungchun Chen, Honorary President, Taiwan Society of Nephrology



First row (from left to right): Dr Richard Li, Dr Sheng Bun, Dr Winnie Wong (Vice-President, HKNS), Prof. Philip Li, Dr Lau Kwok Kwong (President, HKNS), Dr Fong Wing Chi, Dr Eric Chan, Dr Gardian Fong  
 Second row (from left to right): Dr Jessica Li, Dr Yannie Soo, Dr Nelson Cheung, Dr Carlin Chang, Dr Cheng Wing Keung, Dr Shiu Ka Lock

# 30<sup>th</sup> Annual Scientific Meeting, cum 5<sup>th</sup> Hong Kong Neurological Forum

Council of the Hong Kong Neurological Society

Reaching its 30<sup>th</sup> anniversary, the Hong Kong Neurological Society had organised its Annual Scientific Meeting (ASM) 2017 cum the 5<sup>th</sup> Hong Kong Neurological Congress (HKNC) as its yearly highlight on 11<sup>th</sup>-12<sup>th</sup> November 2017. It was co-organised with the Hong Kong Multiple Sclerosis Society and the Hong Kong Epilepsy Society. This yearly meeting served not only as the largest neurology meeting summoning all academic experts, local practitioners and overseas experts, but also a celebrating summary of the work in various aspects in neurology with different partners.

Hong Kong Neurological Society has a long history of collaboration with the Hong Kong College of Physicians (HKCP). This year, we are honored to have Professor Philip K T Li, President of the HKCP to be our officiating guest. He shared his vision on inseparable collaboration between internal medicine and neurology development.

The ASM had a new face this year, with restructured education program session to enhance local researches in dissertation and free paper presentations. Emphasis was paid to facilitate free paper presentations and posters submission as we believe encouragement on local researches and promulgate for publications are important.

This year we invited fantastic experts in various fields from different regions

including local as we did before. Professor Jose Biller from USA, whom every local neurologist knows his expertise in clinical neuroanatomy, spoke in education session for applied neuroanatomy of cranial nerves, brainstem and the spinal cord vascular supply together with sharing of special and challenging cases in stroke. Professor David Hargroves from UK talked in evidence-based strategy for patients with atrial fibrillation and updated UK use of Telemedicine and recanalization therapy in stroke. While Professor Raffaele De Caterina from Italy talked about general management of vulnerable patients with atrial fibrillation, Professor Martin Grond from Germany emphasised in this talk on reversal agents for NOAC in atrial fibrillation management.

In movement disorders session, Professor Carolyn Sue from Australia talked about phenotype and genotypes in movement disorders, and classification of genetic movement disorders. Professor Ken KL Yung from Hong Kong talked about Stem Cell Development in Hong Kong. For epilepsy, Professor Andrew J Cole from USA talked about his great insight about relationship between epilepsy and dementia. Professor Eugene Trinka from Austria talked about the special challenges in managing epilepsy in elderly. About the topics of multiple sclerosis, Professor Uccelli Antonio from Italy updated us about novel drug targets in Multiple Sclerosis and Professor

Friedemann Paul from Germany also updated us on neuromyelitis optica spectrum disorders management. Finally, Professor Claude M Wischik from UK, the pioneer expert in anti-Tau therapy researches, enlightened us the potential of such therapy in Alzheimer's disease. Prof. Vincent Mok talked on targeting cerebral small vessel disease for dementia. Kate Lui shared on epilepsy, while Jessica Li and Winnie Wong shared on neuromyelitis optica.

No one will disagree that we had a great kick-off in our journey via this locally most important event of our field this year, we have shown our persistence in pursuing perfection and excellence from the high quality of the meeting, the complexity and the advances of neurology demonstrated by the overseas expert had reminded us that Neurology in Hong Kong still have much room for improvement. Despite all the difficulties, we hope that, in collaboration with the Hong Kong College of Physicians and Hong Kong Academy of Medicine, we will succeed in having a big leap forward to reach the international standard in practice with comparable clinical infrastructure like department of neurology and therefore leading to both the clinical and academic excellence that we deserve. This will certainly picture a bright future to us especially young doctors and at the end benefit our patient the best, echoing the principle and the new goal of the College as well.

# Tribute to late Prof Sir David Todd

Prof Philip Kam Tao LI President, HKCP

The College mourns with immense sadness the passing away of Prof Sir David Todd, our Founding President, on 16 August 2017. As a tribute to the late Prof Sir David Todd, a slide show had been presented during the Congregation on 21 October 2017. The slides have now been uploaded to the College website (<http://www.hkcp.org>) for public access.

In addition, the College is now preparing the publication of a memorial book for commemorating Prof Todd.

The College has decided to establish the "Sir David Todd Memorial Scholarship" with an aim to promote excellence in clinical and/or basic research amongst elite physician trainees and young Fellows via supporting their overseas training proposals of six to twelve months' durations. More details about the Scholarship would be announced by the College at a later phase. If you wish to make donations to the said Scholarship, please send your enquiry to HKCP email address: [enquiry@hkcp.org](mailto:enquiry@hkcp.org) or contact HKCP Secretariat at tel: 2871 8766.

## Appreciation

As of 6 March 2018, the College would like to express appreciation for the following donors for their generous donation for the Sir David Todd Memorial Scholarship:

**(1) Donation of HK\$250,000 — HK\$500,000**  
Prof Yu Yue Hong Richard

**(2) Donation of HK\$100,000 — HK\$250,000**  
Dr Tse Sing Sang Bell  
Dr Wong Kwai Kuen Leo

**(3) Donation of HK\$50,000 — HK\$100,000**  
Dr Chan Ka Ho Johnny  
Dr Chiu Shin Chak  
Dr Ma Kin Gay Michael  
Dr Yan Wing Tat Victor

**(4) Donation of HK\$10,000 — HK\$50,000**  
Dr Chan Chun Kwong Jane & Mr Richard Wong  
Dr Cheung King Loong  
Mr Chui Wai Kwan  
Dr Chung Wai Ming William  
Dr Fung Kin Kong William  
Dr Hui Kwun Sue  
Dr Hui Pui Sze Grace  
Mrs Yvonne Ip  
Dr Lam Kwong Ming  
Dr Lee Lit Kee Michael  
Dr Lee Nim Wang  
Dr Lee Tak Hong  
Prof Leong Che Hung and Dr Lilian Leong  
Prof Li Kam Tao Philip  
Dr Loh Kai Tsu Kevin  
Dr Lok Suk Fong Anna

Prof Ma Ching Wan Ronald  
Dr Ng Ping Wing  
Dr So Sing Cho  
Prof Sung Jao Yiu Joseph  
Dr Tang Man Cheung  
Prof Tse Wai Choi Eric  
Dr Wong Kwok Kee  
Dr Yeung Yat Wah  
Dr Yu Yu Chiu Donald

**(5) Donation of HK\$5,000 — HK\$10,000**  
Dr Fung Tang Tat Konrad  
Prof Kung Wai Chee Annie  
Prof Kwaan Hau Cheong and Mrs Louise Kwaan  
Dr Hsu Yau Que  
Dr Hui Wai Mo  
Dr Lee Robert Johnson  
Dr Luk Yiu Wing  
Dr Ma Shiu Kwan Edmond  
Dr Mok Hing Hung  
Dr Ng Hin Kwong  
Dr Ng Ka Kui Philip  
Dr Ng Ka Man Carmen  
Dr Tse Kai Fat  
Dr Wong Lai Hung  
Prof Young Tse Tse Rosie Margaret

**(6) Donation of HK\$1,000 — HK\$5,000**  
Prof Dame Carol Black  
Dr Cheng Fan Fanny

Dr Chow Fu Loi  
Dr Chow King Ho  
Dr Chow Sze Fu Joseph  
Dr Goh King Man Victor  
Dr Ho Lig Kang  
Dr Ip Wing Kin  
Dr Lai Kai Sum  
Dr Lai Sik To Thomas  
Dr Lam Man Fai  
Dr Lau Wing Hong  
Prof Leung Ka Kit Gilberto  
Dr Ma Tao Che John  
Dr Mackay John F  
Dr Mackay Judith Mary Longstaff  
Dr Tai Ling Fung  
Dr Tsoi Tak Hong  
Dr Tsui Kin Ping  
Dr Tsui Yee Ling Elaine  
Dr Wong Ching Yuen Grace  
Dr Wong Chun Yu  
Dr Wong Yiu Nam Johnson  
Dr Yeung Yiu Ming Dominic  
Dr Ying King Yee  
Dr Yip Pui Suen Camille

**(7) Donation of up to HK\$1,000**  
Dr Chan Chin Pang Ian  
Dr Sin Ho Kwan  
Dr Tsang Chiu Chi

## HKCP Scholarship for Medical Students

The College has established the "Scholarship for Medical Students" to support and encourage medical students in Hong Kong to undertake clinical or laboratory attachment/research pertaining to the practice and advancement of internal medicine at overseas institutions. The University of Hong Kong and the Chinese University of Hong Kong recommended outstanding medical students for the scholarship. Our College's assessment panel finally selected the following winners for the scholarship for 2017--2018:

### The University of Hong Kong

- |                     |                   |
|---------------------|-------------------|
| (i) Hui Wan Hin Rex | (ii) Choy Lok Yee |
| (iii) Wang Huishan  | (iv) Mak Siu Fung |

### The Chinese University of Hong Kong

- |                     |                   |
|---------------------|-------------------|
| (i) Kang Di         | (ii) Wong Tsz Yan |
| (iii) Lai Cheuk Yin | (iv) Cheng Fu Him |

The above winners will each receive an award of HK\$20000 and should submit a report to the College within three months from the return.

# Named Lectures and Awards In 2017



**Professor Gabriel M LEUNG**  
Dean, Li Ka Shing Faculty of Medicine  
The University of Hong Kong

**AJS McFadzean Oration**

**Apollo's Legacy: Medicine and Music**



**Dr Patrick Chung Ki LI**  
Neurology Centre,  
Hong Kong Sanatorium Hospital

**Gerald Choa Memorial Lecture**

**Aids to Medical Ethics and Internal Medicine Practice**



**Professor Siew Chien NG**  
Department of Medicine & Therapeutics, Prince of Wales Hospital  
The Chinese University of Hong Kong

**Sir David Todd Lecture**

**The Inflammatory Bowel Disease Tsunami - A Journey to Prevention and Cure**



**Dr Kai Hang YIU**  
Department of Medicine  
Queen Mary Hospital  
The University of Hong Kong

**Richard Yu Lecture**

**Cardiovascular Manifestation in Systemic Inflammatory Disorders**



**Dr Ingrid Yin Fung MAK**  
Department of Medicine  
Queen Elizabeth Hospital

**Award for Obtaining The Highest Score in AIM Exit Assessment**



**Dr Yat Kai LEUNG**  
Department of Medicine & Geriatrics  
Caritas Medical Centre

**Award for Obtaining The Highest Score in PACES**

# Distinguished Research Paper Award for Young Investigators 2017



## Dr Gary Kui Kai LAU

Division of Neurology, Department of Medicine, Li Ka Shing Faculty of Medicine, University of Hong Kong  
Centre for Prevention of Stroke and Dementia, Nuffield Department of Clinical Neurosciences University of Oxford

## Total Small Vessel Disease Score and Risk of Recurrent Stroke – Validation in Two Large Cohorts

*Neurology* 2017; 88: 2260-2267.

Linxin Li, Ursula Schulz, Michela Simoni, Koon Ho Chan, Shu Leong Ho, Raymond Tak Fai Cheung, Wilhelm Küker, Henry Ka Fung Mak, Peter M Rothwell



## Dr Grace Chung Yan LUI

Department of Medicine & Therapeutics, Prince of Wales Hospital

## Liver Fibrosis and Fatty Liver in Asian HIV-infected Patients

*Aliment Pharmacol Ther.* 2016; 44: 411-21.

Vincent Wai-Sun Wong, Grace Lai-Hung Wong, Winnie Chiu-wing Chu, Chun-Kwok Wong, Irene MH Yung, Rity YK Wong, Sin-Lui Yeung, David Ka-wai Yeung, Catherine SK Cheung, Hoi-Yun Chan, Henry Lik-Yuen Chan, Nelson Lee



## Dr Sunny Hei WONG

Department of Medicine & Therapeutics, Prince of Wales Hospital

## Quantitation of Faecal Fusobacterium Improves Faecal Immunochemical Test in Detecting Advanced Colorectal Neoplasia

*Gut.* 2017;66(8):1441-1448.

Thomas N Y Kwong, Tai-Cheong Chow, Arthur K C Luk, Rudin Z W Dai, Geicho Nakatsu, Thomas Y T Lam, Lin Zhang, Justin C Y Wu, Francis K L Chan, Simon S M Ng, Martin C S Wong, Siew C Ng, William K K Wu, Jun Yu, Joseph J Y Sung

## Young Investigator Research Grant 2017

The following doctors received a research grant from the HKCP to complete their respective projects as named. Selection was decided by a scientific panel headed by Professor David Hui. Applications for 2018 will be advertised in the College website around Mar-May of each year.

The grant was established in 2012, to encourage young members of fellows who are aged 40 years or below to conduct research in Hong Kong. Up to five Grants of up to HK\$50000 each are awarded annually.

A 3 year Longitudinal Study of the Level of Asthma Control and Treatment of Asthma Patients in Hong Kong

**Dr Ka Pang CHAN**

A Phase II Study to Determine the Efficacy and Safety of Induction-maintenance Protocol for Patients with Chronic-phase Chronic Myelogenous Leukaemia

**Dr Yuk Man CHEUNG**

A Randomized Controlled, Single Blinded Study on the Efficacy of a Hybrid Tilt Table and Electromechanical Gait-training Device in Lower Limb Recovery in Patients with Severe Stroke

**Dr Florence Sin Ying FAN**

A Cohort Study of the Natural Course and Prognostic Factors for Predicting Clinical Outcomes in Patients with Malignant Pleural Effusion

**Drs Mei Sze LUI and Ka Yan CHIANG**

Atrial Fibrillation Detection by Smart Phone ECG Monitoring in Acute Stroke Unit

**Dr Sze Ho MA**



# Rehabilitation Medicine

# Advanced Technology in Rehabilitation

**Dr Tsz Kin KWOK**

Consultant, Division of Rehabilitation,  
Department of Medicine, Tung Wah Hospital

## Introduction

“Dreams come true” is the best description for the recent developments in rehabilitation. In the past, we heavily relied on manual training & compensatory techniques to maximize our patient’s ability. However, manual training is labor intensive and not able to cope with the current high patient load. Compensatory technique is actually a passive way for patients to adapt to the environment. With the advancement of technology and computer science, we can now train our patients effectively and safely with robot, virtual reality or augmented reality. Robot, mixed reality and brain computer interface offer autonomy to our patients with disabilities which cannot be seen in the old days.

## Robotic Training

Repetitive training definitely improves recovery<sup>1</sup>. However, due to technical limitation and manpower limitation, manual training cannot manage to provide high quantity of training. Robotic training allowed us to overcome this hurdle. Furthermore, the quality of the training can be guaranteed and progress monitoring can be more objective<sup>2</sup>. This allows us to fine tune the training precisely for the patients and conduct controlled trial more easily. Currently, both upper and lower limb robotic training equipment is available

from the market. These robots move the limbs of the patients and automatically adjust the output according to the patients' ability.

Upper limb robotic training is proven to be useful for stroke patients. When combined with virtual reality, upper limb robotic training helps to transfer the training results to daily tasks. The electromyography-driven neuromuscular electrical stimulation-robotic can offer training to stroke patients. At the same time, it is an exoskeletal type prosthesis that helps patients to use their hemiplegic upper limb functionally.

Lower limb robotic training was developed for patients with spinal cord injury. Increasing evidence now supports the use of lower limb robotic in stroke patients. The training can be combined with virtual reality to enhance patients’ motivation and to facilitate self-monitoring for sensory impaired patients. Different models of lower limb robotic exoskeleton were developed in the past years which help paraplegic or hemiplegic patients to walk again. This gives freedom and autonomy to these patients by improving function. Furthermore, it enhances their social ability and morale.

The major drawback for robotics is the cost. Most of the robots nowadays are relatively expensive. However, with increased users, cost of these robots is expected to decrease in the future.

## Virtual Reality

Virtual reality (VR) is a computer-generated environment that simulates the real world. In clinical use, it is mainly divided into total submersion type and partial submersion type. Total submersion type VR requires the patients to wear a head-mount display (HMD) which blocked all visual distractions from surroundings and patients received computer-generated images only. Therapists can control the stimulation completely with this type of VR but VR "motion sickness" is a major problem for some patients especially after prolonged use. Partial submersion type VR is usually performed by patients looking at computer screen. Partial submersion type VR is less ideal for training control and usually require more space to operate but it significantly reduces VR "motion sickness" and is easy to set up.

VR training provides a safe environment for patients to practise something risky in real situation<sup>3</sup>. Similar to robotic training, it provides accurate assessment for progress and standardizes the training procedure for conducting clinical trials. Some studies postulate that it can improve motivation<sup>4</sup>. With growing evidence of benefit in training stroke patients with hemi-neglect, it is now widely used in this field<sup>5</sup>. Furthermore, patient with executive dysfunction also benefit from this type of training because the simulated environment is safe

and the exact amount of stimulation or distraction delivered to the patient can be controlled<sup>6</sup>.

The combination of VR with robotic training provides highly repetitive training which simulates daily practical tasks. This can help patients to transfer training skills to actual daily life more easily than before. In addition, some VR training can be operated at home and patients can continue the training after discharge.

## Augmented Reality

While VR relies purely on computer-generated images, it can only provide a totally artificial virtual environment for our patients. On the other hand, Augmented Reality (AR) incorporates real-time environment with computer-generated stimulation. It requires the patients to wear a pair of glasses-like HMD mounted with a camera sensor which allow the patients to see the environment. Specific object or stimulation can be added to the training environment by props that can read by the camera mounted on the HMD. The patients will see the props being replaced by the computer-generated image. This can allow therapists conduct the training in real condition but with controlled input and patients remain safe.

AR is extremely useful in occupation therapy training and cognitive training because we can assess

the patients' response in real environment, at the same time, we can change the input to the patients according to their' needs rather than standardized objects. Recently, AR mirror visual feedback therapy was proven to be useful for patients with phantom limb pain or neuropathic pain.

The major drawback of AR is that it requires props that the computer can recognize in order to generate the computer image for the patients. However, due to the exponential growth of the computer technology, we are now entering the era of Mixed Reality (MR).

## Mixed Reality

MR is the advanced version of AR. The main difference between AR and MR is that MR does not require any props to generate the computer image that virtually exists. The camera located in the HMD of the patients can recognize the objects in real world and incorporate the computer-generated image into the real objects seamlessly. A good example is gait training of patients with Parkinson Disease (PD). In order to prevent freezing, visual guide can be projected to the floor of the real environment though the HMD<sup>7</sup>. This kind of training tools can be extended to be used in daily life of Parkinson patients to overcome freezing. The innovation does not end here as this kind of training or assistive devices can further be combined with powered orthoses or robotic devices<sup>8</sup>.

MR combined with Artificial Intelligence and connectivity has a huge potential in the future. For example, patients with hemi-neglect can be alerted when danger approaches from the neglected side of the body. Guidance projected to the HMD can help the patient to escape. It allows patients to have much higher autonomy and decreases the needs for assistance.

## Brain Computer Interface

This may be regarded as the ultimate solution in rehabilitation. Electrodes implanted to cerebral cortex pick up different pattern of electroencephalogram (EEG) signals when patients is thinking about particular body action. The EEG signals interpreted by the computer is then transformed into instructions for external devices such as robotic arm or even the computer keyboard. From this point, patients can control external devices to perform physical tasks which are functional, just by using their mind. Successful cases have been demonstrated in spinal cord injury patients and locked-in patients.

Providing control to the external devices only fulfill half of the ultimate solution. In order to control the external devices smoothly, such as robotic arm, sensory feedback is another important domain. Currently, there are trials starting to transmit sensory impulse to the brain from the robotic arm via the



electrodes connected to the cortex of the patients. These technological advancements remain in the experimental stage but promises to increase the autonomy of highly disabled patients in the future

## Prescription

These devices for training or for functional use require prescription just like a medication and are based on scientific evidences to support their usage. However, the prescription process is more complicated. It is usually a rehabilitation team decision made with the patients and care givers. The decision is usually made with the consideration of 4 major aspects:

*Functional requirement:* All these devices aim to improve the functional level of the patients. The prescription has to match with the functional needs of the patients. For example, if a patient requires large amount of long distance outdoor activities, electric wheelchair may be more suitable than exoskeleton robotic walking aids.

*Cognitive level:* Although all new technologies are highly automatic, they still require the patients or care givers to operate. A considerable mental function is required for using these equipment effectively and safely. However, Artificial Intelligence has advanced quickly in recent decade and requirements for mental function integrity may not be high in the future.

*Acceptance:* Almost all the new technologies are computer operated. In some cases, especially in elderly,

anxiety towards computer operation may be the major hurdle of patients using these new technology. Careful discussion with patients and care givers is essential during the process of prescription.

*Affordability:* Such devices come with a relatively high price tag for initial purchase and maintenance. This will be a barrier if devices have to be bought by patients for home use. It is anticipated that with widespread usage the prices will become more affordable.

Rehabilitation physicians' role is to estimate the prognosis, combine the information from all the therapists in rehabilitation team, offer evidence based options to patients and care givers and monitor the efficiency of the devices as well as the complications. Basically this is a team based operation and patients' progress need to be monitored.

## Local Utilization

Most of the major rehabilitation centers in Hong Kong are operated by Hospital Authority.

## Conclusion

Advancement of technology brings multiple benefits for disabled patients. It is growing fast and beyond our imagination. Robotics combined with VR, AR and even MR create new opportunities for rehabilitation physicians and patients. Brain computer interfaces bring the potential for unlimited possibilities. The ultimate goal is to restore our patients' functions.

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# SIR DAVID TODD LECTURE



Having worked in the United Kingdom for 9 years as a clinician, I joined the Department of Medicine and Therapeutics, The Chinese University of Hong Kong in 2010 after obtaining a PhD degree in Immunology and Bacteriology from Imperial College London. In 2012, I was appointed as Clinical Assistant Professor, and was subsequently promoted to Clinical Associate Professor in 2014 and Professor in 2016.

As a clinician-scientist trained in Gastroenterology, my research mainly lies in inflammatory bowel disease (IBD) and colorectal cancer. IBD, almost unheard in Asia two decades ago, has now become an epidemic in Hong Kong and Asia. It is a potentially life-threatening condition that does not have a cure and costs the healthcare over €4 billion per annum. Seeing that IBD has substantial morbidity and on notably increase in Asia, I developed a team to undertake research on uncovering ways to stop or slow down this “epidemic” disease. I have successfully led to the formation of the Asia-Pacific Crohn’s and Colitis Epidemiologic Study Group to track IBD cases in over 15 countries in the Asia Pacific region, established for the first time disease burden, potential environmental risks and identified preventive strategies. To date, we have published more than 150 peer-reviewed articles (*41 papers with impact factor >10, h-index 33, total citations 3232*) in top notch international journals including Lancet [IF:44.002], Nature

Genetics [IF:31.616] Gastroenterology [IF:18.187] and Gut [IF: 14.921] to report our groundbreaking work and important research findings. Our work has been reported and broadcasted by U.S. based journalists in *Nature* and *Environmental, Health and Science*, regularly highlighted by *Editors of high impact scientific journals*, and frequently cited by *International researchers*. My research team has been invited as advisors to develop epidemiologic platforms in Latin America, Indian subcontinent, Africa and Asia. On top of that, the preventive strategies identified by our team have been incorporated into daily care throughout the world. Our work has not only put Hong Kong in the world map of IBD but it has impacted on our society in that dietary changes and modification of the gut bacteria has emerged as a potential therapy for IBD. Our research has therefore contributed significantly to the world literature and has undoubtedly advanced the state of the art in clinical practice and patient care. Owing to these impactful research outputs, I have been particularly fortunate to be successful in soliciting funding and has over the years obtained more than HK\$60 million institutional income from competitive grant bodies, including US\$1.8 million from the Leona M and Harry B Helmsley Charitable Trust (the first time that it was awarded to an academic in Asia) to support my research. I am also one of the youngest academics ever elected to the highly prestigious International Organization of IBD, and

has been leading this organization as a scientific secretary since 2016. I currently play a leading role in numerous multinational clinical trial research projects.

Within only 5 years since becoming a clinical academic, I have been recognised as an international leader in my specialty. My work has received over 20 *Prestigious Awards* including the Distinguished Research Paper Awards in three consecutive years from the Hong Kong College of Physicians, Research Excellence Award, First-class Ministry of Education Higher Education Outstanding Scientific Research Output Award (People Republic China), Emerging Leader Lectureship Award of the Asian Pacific Association of Gastroenterology, and American Gastroenterology Association Young Investigator Award and the Rustgi International Award in recognition of outstanding basic scientific research. I currently serve as President of the Hong Kong IBD Society and Advisor for the Hong Kong Patient Crohn’s and Colitis Support Group. My other international positions include Management Committee of the International IBD Genetics Consortium, Steering Committee of the World Gastroenterology Organization Research Methodology and Global Guidelines Group and Chairperson of the International Digestive Disease Forum. I regularly serve as journal reviewer and grant reviewer for International grant bodies and funding agencies in the U.S and U.K. I am Associate Editor and editorial

# The Inflammatory Bowel Disease Tsunami - A Journey to Prevention and Cure

**Prof Siew Chien NG**

Department of Medicine & Therapeutics, Prince of Wales Hospital  
The Chinese University of Hong Kong

board members for 8 journals. As the chair organizer of over 20 national and international meetings in IBD, and as Advisory board members for several Pharmaceutical and Corporate partners, I strive to advance the care of IBD patients via designing preventive strategies and developing new drug therapies for personalized IBD care. To impact on patients' lives, I have organized over 15 public health talks and media interviews to promote disease awareness in IBD, colorectal cancer and bacterial manipulation for disease treatment. We have developed dedicated patient programs, education forums and a multi-disciplinary team for optimization of IBD patient care. I currently lead extensive collaborative basic science, translational and clinical studies in IBD with over 20 universities in Europe, Australia, North America and Asia, to define, and examine causes of, and implement preventive strategies to halt the rising incidence of IBD globally.

Though much occupied in research and clinical services, I have never sacrificed my time with students and in teaching. I strive to inspire the next generation and I care about my student's learning experience, and hope to motivate them to explore and embrace challenges for personal growth, apart from academic pursuit. I also put much emphasis on training and guiding students to have a serving heart and be highly resilient such that they can adapt to the vibrant and diverse working and academic environment when they

embark on their career journey. I have been voted by students as one of the best teachers in the Faculty. I currently lead a dedicated research and clinical team of 4 clinical fellows, 10 research assistants, 3 post doctorate scientists, 8 undergraduate research students and 6 postgraduate students. Under my supervision, my students consistently receive regional and international research awards and have published full articles in over 8 high impact journals.

My goal is to enhance leadership role in IBD and microbiota research through multi-centre studies, international partners and professional organizations. Our group aims to develop predictive models to estimate global IBD burden and healthcare cost of this chronic disease in the next decade. Our future work will combine basic science and clinical science to form a unique and powerful research combination - representing true 'bedside to bench and back again' translational research - to address

the cause of the surge of digestive disease prevalence including IBD. Our scientific and clinical platform of experts, that crosses geographical and ethnic boundaries, offers the prospect of exciting discoveries of immediate relevance to patients. Ultimately, we will strive for research endeavor that seeks to unlock the cause, and to develop specific new personalized treatments for IBD. Through pioneering discoveries and research accomplishments, my career mission is to inspire the next generation to be successful clinician-scientist for the advancement of clinical research, education, and professional services. Through my unfailing and impactful scholarly work, I hope to fulfil my vision to pursue scientific excellence and conduct research that would change clinical practice and benefit patients. My long term aspiration is to position Hong Kong as a world-leading and international benchmark and role model for medical leadership training and cutting-edge research.



# RICHARD YU LECTURE



Systemic inflammatory diseases, including those of rheumatology and dermatology, are associated with an increased occurrence of cardiovascular events. Substantial evidence suggests that the chronic systemic inflammation in these diseases plays a pivotal role in all stages of atherosclerotic plaque formation, from initiation of the fatty streak to plaque rupture and consequent acute coronary syndrome. A number of studies using different cardiovascular imaging modalities have investigated the disease pattern, pathophysiology and clinical outcomes of cardiovascular manifestations in patients with systemic inflammatory disorders.

## **Prevalence and disease pattern of atherosclerosis**

Multi-detector computer tomography (MDCT) is one of the most common imaging modalities for the heart and can assess coronary calcification and the coronary arteries and structure of the heart. A study that used MDCT to compare 85 rheumatoid arthritis (RA) patients with 85 controls and first demonstrated the differential calcification pattern in the aorta, coronary and carotid arteries detected by MDCT in the patients with RA. Compared

with the pattern of calcification in controls, which mainly occurred in the coronary arteries, patients with RA had early and more extensive preferential involvement of the aorta (*J Intern Med* 2009). A follow-up study of 49 patients with RA demonstrated that calcification in all vascular beds significantly increased over 10 years and was higher than the predicted value based on the general population (*Clin Rheumatol* 2017). Similarly, the prevalence of aortic, coronary and carotid artery calcification detected by MDCT was higher in patients with systemic lupus erythematosus (SLE) than in matched controls. Nonetheless coronary artery, rather than aorta as in patients with RA, was the most prevalent vascular bed with calcification in patients with SLE (*J Rheumatol* 2009). Coronary calcification and carotid intima media thickness (cIMT) were increased in 70 psoriasis patients compared with matched controls. Importantly, psoriasis was associated with a 10-fold increased risk of subclinical coronary atherosclerosis. This very high risk should prompt close cardiovascular surveillance and aggressive control of risk factors to prevent the development of adverse cardiovascular disease events (*J Intern Med* 2013). In a subsequent study, patients with RA and SLE were found to have a high prevalence of aortic valve (AVC)

and mitral valve (MVC) calcification compared with matched controls. Importantly, this study was the first to show that the presence of MVC, not AVC, is associated with calcification in most vascular beds in patients with RA and SLE. (*J Rheumatol* 2011).

Recent advances in echocardiography of 2-dimensional speckle tracking analysis enable the detection of subtle myocardial dysfunction before the development of adverse clinical events. With the use of this advanced technique, I have first demonstrated that patients with systemic sclerosis (SSc) have subclinical left ventricular (LV) myocardial dysfunction compared with controls. Importantly, decreased LV myocardial strain is associated with lower functional capacity and rhythm disturbances in these patients (*Arthritis Rheum* 2011). Right ventricular (RV) dysfunction is of great prognostic value in patients with SSc. Another study demonstrated that patients with SSc have impaired right ventricular (RV) myocardial strain compared with controls. Presence of pulmonary fibrosis, pulmonary pressure and LV ejection fraction were all independently associated with impaired RV strain (*Rheumatology* 2016). I have further demonstrated that patients with spondyloarthritis (SpA) have

# Cardiovascular Manifestation in Systemic Inflammatory Disorders

Dr Kai Hang YIU

Department of Medicine, Queen Mary Hospital  
The University of Hong Kong

worsened LV myocardial strain and diastolic dysfunction compared with controls. Moreover, the myocardial dysfunction is closely associated with radiological disease severity indicating that the cumulative inflammatory burden of the spine may contribute significantly to myocardial dysfunction (*Rheumatology* 2014).

## Pathophysiology of cardiovascular abnormalities

One of the proposed mechanisms that leads to premature atherosclerosis in patients with systemic inflammatory disease is the burden of chronic inflammation. This has been confirmed by a study of 52 patients with psoriasis, demonstrating that systemic inflammation as measured by hs-CRP is positively correlated with arterial stiffness (*Br J Dermatol* 2011). In addition to systemic inflammation, experimental studies suggest that bone marrow-derived endothelial progenitor cells (EPCs) play an important role in the maintenance of endothelial integrity and haemostasis. Among 77 RA patients, those with coronary atherosclerosis had a lower CD133+ and CD133/KDR+ EPCs count than those without. Furthermore, the circulating level of CD133/KDR+ EPCs was inversely correlated with

CRP level (*J Rheumatol* 2010). Another study that evaluated 35 psoriasis patients revealed that EPC reduction was closely associated with arterial stiffening (*J Dermatol* 2016). These combined findings suggest that depletion of EPCs may in part explain the occurrence of premature atherosclerosis in patients with RA and psoriasis. In patients with severe psoriasis, parathyroid hormone (PTH) has also been found to be associated with impaired LV myocardial function, possibly via an increased intracellular calcium level in the myocardium, activation of the renin-angiotensin-aldosterone system and activation of vascular receptors (*J Eur Acad Dermatol Venereol* 2014).

## Clinical outcome

In a prospective study of 154 patients with RA and SLE and mean follow-up of 4.3 years, a total of 10 major cardiovascular events occurred. The annualized major cardiovascular event rate was 1.5%. Importantly, coronary CS > 100 (Hazard ratio 11) independently predicted cardiovascular events. These results demonstrate that coronary CS measured by MDCT is a clinically useful indicator that improves risk stratification for cardiovascular events in patients with RA and SLE (*Clin Exp Rheumatol* 2012). Currently,

I am investigating the potential therapeutic use of Vitamin K supplementation to prevent vascular calcification in patients with RA in an attempt to reduce progression of premature atherosclerosis (*HK Research Grant Council-General Research Fund (GRF) – 2014; Amount: HK\$670,000*).

## Conclusion

Based on these studies, a review article has concluded that cardiovascular risk and manifestations are common in patients with systemic inflammatory disease with potential ethnic differences (*Nat Rev Rheumatol* 2011). The use of advanced imaging techniques to identify those who have premature cardiovascular disease may improve risk-stratification. Finally, future studies should focus on the relationship between the cumulative burden of inflammation and cardiovascular disease development, and the effects of aggressive treatment on the long-term cardiovascular outcome in these patients.

# BEST THESIS GOLD AWARD



## The Prevalence of Asymptomatic Carriage of *Clostridium Difficile* in an Institutionalized Population Upon Hospitalization and The Risk of Developing Pseudomembranous Colitis

**Dr Wai Lok CHOI**

Department of Medicine & Geriatrics, United Christian Hospital

### Background

*Clostridium difficile* (*C.difficile*) is an increasing health care burden. Institutionalized population was postulated to have a higher carriage of *C.difficile*. There was no local data on the prevalence of its carrier rate. Newer evidence suggested that *C.difficile* carriage may confer higher risk of subsequent infection. Its prevalence had infection control implications.

### Objectives

To find out the prevalence and risk factors of *C.difficile* carriage in residents of long term care facilities upon hospitalization. To study the risk of acquiring it during hospitalization and the risk of developing pseudomembranous colitis in 6 months.

### Methods

This was a prospective observational cohort study carried out in a regional hospital. Long-term care facility residents admitted to two acute geriatric wards for any causes were recruited from December 2015 to February 2016. Rectal swabs were obtained for *C.difficile* culture within 48 hours. Toxigenicity was confirmed by polymerase chain reaction analysis. Rectal swabs were repeated after discharge. Subjects were followed up for 6 months. Risk factors and background demographics and association with *C.difficile* carriage and infection were studied.

### Results

The carriage of toxigenic *C.difficile* upon hospitalization in this population was 10.4%. No significant risk factors of toxigenic *C.difficile* carriage upon admission could be identified. Mobility was associated with toxigenic *C.difficile* positivity after a single admission and acquisition of it. The majority (94.1%) of toxigenic *C.difficile* carriers remained asymptomatic. No difference in *C.difficile* infection risk was found between carriers and non-carriers.

### Conclusion

The carriage of toxigenic *C.difficile* upon hospitalization in this population was 10.4%.

# BEST THESIS SILVER AWARD



## Retrospective Review of The Prevalence and Associated Risk Factors of Asymptomatic Genital and Extragenital Chlamydia Trachomatis and Neisseria Gonorrhoeae Infections in HIV-Infected Men Who Have Sex with Men

**Dr Wai Hung LEUNG**

Social Hygiene Service, Department of Health

Many overseas studies confirmed the higher prevalence of asymptomatic rectal and pharyngeal GC/CT infections than at urethral sites among MSM. Asymptomatic STI infections enhance HIV transmission to uninfected partners. International guidelines advocate annual screening of sexually active MSM.

### Objectives

To determine the local prevalence and risk factors of asymptomatic genital and extragenital *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (GC) infections in HIV-infected men who have sex with men (MSM), in order to inform public health control; and to enhance the diagnosis and treatment of asymptomatic CT and GC infections at genital and extragenital sites in HIV-infected MSM.

### Method

A retrospective review examining clinical and epidemiological data of asymptomatic HIV-infected MSM screened at genital and extragenital GC and CT infections from October, 2013 to April, 2015 at KBITC. The prevalence of GC and CT infections at the rectum, pharynx and urethra are determined. Psychosocial and demographic data collected are analyzed and associated factors evaluated.

### Results

828 specimens were collected from 294 patients. Almost one-third (32%) of all subjects were infected by either infection at any one of the three sites. The only factor associated with infection was Chinese ethnicity. The prevalence of infection at any site was 14%. The prevalence of CT was 22% at the rectum, 4% at the pharynx and 5% at the urethra. The prevalence of GC was 11% at the rectum, 5% at the pharynx and 1% at the urethra. Twenty-seven percent were infected by either infection at the rectum.

### Conclusion

As much as 32% of all subjects were infected at any one site; and the prevalence of rectal CT was as high as 22%. A urine only screening strategy misses more than 70% of GC or CT infections. There exists an enormous gap in service provision to test more patients, test more sites, and to test asymptomatic persons.

# BEST THESIS BRONZE AWARD



## Use of Novel Oral Anti-Coagulant (NOAC) and its Outcomes on The Elderly Patients: A Local Study

**Dr Sai Tim LAM**

Department of Medicine, Pamela Youde Nethersole Eastern Hospital

### Background

Atrial fibrillation is common in the elderly. Novel oral anti-coagulants (NOACs) are nowadays more and more commonly used as stroke prophylaxis in patients with non-valvular atrial fibrillation and systemic thromboembolism. Elderly patients are known to have a higher risk of bleeding, however the safety profile of NOACs in the older-old (age  $\geq 85$ ) in Hong Kong is not known.

### Purpose

We aim to evaluate if the older-old (age  $\geq 85$ ) had a higher bleeding risk when taking NOACs, when compared with the younger-old (age  $\geq 65$  to  $<85$ ), and to identify the risk factors for bleeding events in the elderly taking NOACs. Prescription pattern of the NOACs in the elderly was also reviewed.

### Methods

This was a retrospective cohort study being done in a regional hospital in Hong Kong, Pamela Youde Nethersole Eastern Hospital (PYNEH). The elderly with age  $\geq 65$  started using NOACs, including Dabigatran, Rivaroxaban and Apixaban in the year 2014 were recruited via the Clinical Data Analysis and Reporting System (CDARS). Relevant information was recorded from the computerized Clinical Management System (CMS), electronic Patient Records (ePR) and medical records, until discontinuation of the drug or 30<sup>th</sup> June, 2015. Baseline characteristics of patients and the prescription pattern of NOACs were analyzed with descriptive statistics. Older-old (age  $\geq 85$ ) group was compared with the younger-old (age 65 to  $<85$ ) group for the bleeding events, including total bleeding events, major bleeding, minor bleeding, gastrointestinal bleeding and extra-cranial bleeding. Statistical differences between groups were assessed and relative risk was calculated by using Chi-Square test and Fisher's exact test when appropriate for categorical variables, and Mann-Whitney U test for the continuous variables. Kaplan-Meier curve estimator was used to evaluate time to bleeding events.

### Results

Older-old was associated with a higher risk of gastrointestinal bleeding compared with the younger-old (RR 2.62, 95% CI 1.12-6.12,  $P=0.027$ ). There was a trend that older-old were at a higher risk of total bleeding events (RR 1.74, 95%CI 0.99 – 3.06,  $P=0.068$ ). The following risk factors for total bleeding events were identified: History of ischaemic stroke (RR 1.74, 95% CI 1.02 – 2.99,  $P=0.048$ ), body weight  $<50$ kg (RR 2.45, 95% CI 1.15-5.19,  $P=0.023$ ), being chair- to bed-bound in mobility (RR 2.45, 95% CI 1.20-5.03,  $P=0.034$ ) and being dependent in daily activities of living (RR 2.62, 95% CI 1.27-5.40),  $P=0.036$ ). Concurrent use of non-steroidal anti-inflammatory drugs (NSAIDs) or anti-platelet was associated with a higher risk of gastrointestinal bleeding (RR 3.25, 95% CI 1.18-8.95,  $P=0.034$ ). Body weight, which is an important parameter in calculating creatinine clearance by Cockcroft-Gault equation for the correct dosage of NOAC, was not well documented before starting NOACs. Only 44 patients (31.7%) were prescribed with the correct dosage of NOACs. Inappropriate dosage of NOACs was associated with a higher risk of total bleeding events (RR 2.56, 95%CI 1.12-5.85,  $P=0.022$ ).

### Conclusion

The risk of gastrointestinal bleeding was higher in the older-old taking NOACs, when compared with the younger-old. There was also a trend of higher risk in total bleeding events in the older-old. Mobility, functional status and medication history are important when assessing the bleeding risk of NOACs in the elderly. Comprehensive geriatric assessment before prescription of NOACs in the elderly is therefore advised. Awareness about documentation of body weight and calculating the creatinine clearance by Cockcroft-Gault equation for the correct dosage of NOACs should be raised.





# Engaging Interns and Medical Students for a Career in Medicine

## 2<sup>nd</sup> Career Talk Organized by the HKCP Young Fellows' Committee

**Dr Thomas Sau Yan CHAN**

Committee Member, Young Fellows' Committee, HKCP

It gives me great pleasure in reporting our second career talk, held in last August, at the underground lecture theatre of Queen Mary Hospital. The first career talk held in June was a great success and the second one was no exception. The attendance was remarkable with more than 100 undergraduates and interns joining us.

Opening remarks were given by our College President, Professor Philip Li. It was followed by several seminars. Although the titles of the seminars were the same as in

the first session, we have tried to enrich the contents. For example, in the 'life as a physician' session, Dr. Margaret Ma shared with us for the first time her funs and challenges in raising kids as a full-time working mom. The talks on introduction to internal medicine, interviewing skills and common pitfalls in interns were also well received by the audience.

Based on the feedback from the audience of last session, we have decided to put the sharing session to the last, allowing ample time for discussion and more flexibility. The attendees' interest in joining

internal medicine was evidenced by the enthusiasm in their conversations with the speakers.

The feedback and evaluation from the audience were positive in general. We believe the two career talks will help us to set the grounds for future activities and engagements with the younger generation of doctors.

The committee is in debt to the speakers and representatives of different specialties in the sharing session, for the event would not be a successful one without their contributions.



# PACES - Practical Assessment of Clinical Examination Skills

## Observations from the Examinee: Tips for Conquering PACES

**Dr Heyson Chi Hey CHAN**

Chairman, Young Fellows' Committee, HKCP

Every medical graduate is no amateur in taking clinical examinations, yet, when it comes to PACES, everyone is anxious and uncertain about how to pass it. In this article, I am going to share my experience in how to be best prepared for the examination.

### Few months before the examination:

Practice is the best preparation for PACES. Start early and find a group of buddies and prepare together.

There is no need to emphasise on the importance of seeing as many patients as possible. Repeated practice will refine your examination technique to become fluent and flawless, imparting on the examiner a good impression. By seeing more patients, the art of eliciting signs will be your second nature and allow you to concentrate on interpreting the clinical signs.

It is important to practise according to the examination format. Time yourself when you see each patient. Take turns to role play the 'candidate' and 'examiner'.

The mock 'candidate' should practise presenting findings in the examination format. Try to formulate a personal presentation template for each system incorporating all the

important findings that one should report in that particular examination. This makes sure you are familiar with that particular presentation format and will not miss out reporting important findings (e.g. heart sounds in cardiovascular examination and quality of breath sounds in respiratory examination).

The one who simulates the 'examiner' should ask the candidate questions and be tough to the candidate. By practising in this format, the candidate will be used to presenting findings and answering to questions under pressure. The mock examiner puts himself or herself into the shoes of the examiner and understands more about what the examiner is expecting.

Preparation for stations 2 and 4 is facilitated by going through sample scenarios found in various books or websites. Not being native English speakers, we are unaware of our frequent use of jargon. Sample scripts written in these textbooks provide examples of suitable layman terms to use (or jargons to avoid). Alternatively, sample consultation videos are available on websites such as YouTube which provide additional benefit in demonstrating the appropriate tone and various non-verbal cues of use.

You may be exhausted after a long day of practice. However, you are strongly advised to do a quick reading on the cases that you saw that day before bed. Spend half an hour or so to read about the diagnosis, expected signs and common questions about the patients that you saw is best when your memory is still fresh.

### Few days before examination:

Anxiety level builds up when time approaches. The crucial part to do in this period of time is to build up your confidence. The best way to achieve this is to practise examination skills with each other and presentation skills with your buddy. Go through some common questions and practise in viva format. Also pick a few scenarios for stations 2, 4 and 5 to make sure you are familiar with the template of history taking and counselling skills.

### Night before examination:

Check that you have all the necessary documents and equipment with you. Choose appropriate attire – make sure you feel comfortable and look professional. Make sure your attire is

ironed straight, shoes are polished. Trim your nails.

It may be hard to fall asleep, but at least try to go to bed early. Having a refreshed mind is crucial. If you happen to have an early morning wakening and can't sleep again, mentally run through the physical examination technique to ensure that the skills are now stored in your spinal cord, so that your examination technique will be a reflex and flawless under stress.

### **Day of examination:**

Although you may have functional dyspepsia that morning, eat something. Hypoglycaemia will affect your performance. If time allows, refresh yourself with a shower before leaving for the examination.

Before you leave home, double check that you have all the necessary documents and equipment with you. Don't rush, allow time for traffic and arrive at the examination centre early.

### **During the examination:**

#### **Before each station**

There is a preparation time of 5 minutes before each station, one's mind is usually blank and heart is pounding faster than a SVT patient during the wait. However, if you use this preparation time wisely, you are already half-way to passing the exam!

For stations 1 and 3 (physical examination): Mentally rehearse the examination skills and go through your personal generic presentation for each system.

For station 2 (history taking): Read the scenario carefully and underline the important information, including the name, age and gender of the patient, the presenting problems. Once you have done this, start formulating your consultation. Jot down the headings like history of present illness (HPI), social history, family history, drug history... One may forgets to ask these (e.g. totally forgets about family history) under stress. If the scenario involves a diagnostic challenge, include the differential diagnoses in your mind and key questions to rule in / out these differential diagnoses. Always remind yourself to explore any concerns for the patient (there are usually some in the script). There is no need to write all questions -- main points and major differential diagnoses will be good enough.

For station 4 (communication skills and ethics station): Preparation is similar to station 2.

For station 5 (brief clinical consultation): Preparation is similar to station 2 with the addition of essential physical examination that you need to do. Try to formulate a list of possible differential diagnoses during the preparation.

#### **In the station**

Be confident, but not arrogant. Smile, and be calm. Maintain eye contact with the examiner and present in an unambiguous way. Don't be scared off by the examiners' "mask face appearance".

Be nice to the patients. Respect them, ask their permission for examination, be gentle and at the end of the examination ensure that your patient is as comfortable as you found them. And finally don't forget to thank them.

#### **Between the stations**

If you happen to do not so well in one station, limit yourself to one minute to have the flash back. I know it is hard, but it is very important to spend the preparation time well and get yourself out from whatever happened in the previous station. Do not let the "downward spiral syndrome" take you. Take a deep breath and clear your mind before you go to the next station.

### **After the examination:**

RELAX! Time to forget about the examination! Enjoy the rest of the day with your loved ones or friends. Treat yourself a nice dinner and do something that you enjoy most. You well deserve some quality personal time after months of hard work!

May I wish every candidate best of luck in their upcoming PACES! Let's conquer PACES!

## Passing Rates : Joint HKCPIE/MRCP (UK) PART II (Written) Examination – 2002 - 2017

	Sitting	Pass
2 July 2002	53	27 (51%)
13 November 2002	50	24 (48%)
13 August 2003	110	62 (56%)
10 December 2003	54	31 (57%)
28 July 2004	65	42 (65%)
8 December 2004	46	32 (70%)
13 April 2005	32	15 (47%)
27 July 2005	76	56 (74%)
7 & 8 December 2005	26	16 (62%)
12 & 13 April 2006	29	13 (45%)
26 & 27 July 2006	91	68 (75%)
6 & 7 December 2006	33	18 (55%)
11 & 12 April 2007	34	22 (65%)
25 & 26 July 2007	80	70 (88%)
5 & 6 December 2007	19	13 (68%)
9 & 10 April 2008	21	13 (62%)
30 & 31 July 2008	47	36 (77%)
3 & 4 December 2008	17	10 (59%)
8 & 9 April 2009	32	25 (78%)
29 & 30 July 2009	50	43 (86%)
25 & 26 November 2009	12	7 (58%)
7 & 8 April 2010	41	34 (83%)
28 & 29 July 2010	25	19 (76%)
24 & 25 November 2010	8	2 (25%)
6 & 7 April 2011	45	35 (78%)
23 & 24 November 2011	32	25 (78%)
28 & 29 March 2012	55	43 (78%)
12 & 13 December 2012	57	44 (77%)
10 & 11 April 2013	60	52 (87%)
11 & 12 December 2013	48	34 (71%)
9 & 10 April 2014	54	46 (85%)
10 & 11 December 2014	26	25 (96%)
25 & 26 March 2015	53	45 (85%)
9 & 10 December 2015	68	65 (96%)
6 & 7 April 2016	29	28 (97%)
7 & 8 December 2016	62	50 (81%)
29 & 30 March 2017	25	21 (84%)
28 & 29 November 2017	58	54 (93%)

## Passing Rates: Part I Examination – 2002 - 2017

	Sitting	Pass
September 2002	100	33 (33%)
January 2003	124	55 (44%)
May 2003 (SARS Special)	21	7 (33%)
September 2003	54	29 (54%)
January 2004	93	39 (42%)
September 2004	29	16 (55%)
January 2005	96	68 (70.8%)
September 2005	24	15 (62.5%)
January 2006	95	74 (80%)
September 2006	21	13 (62%)
January 2007	87	67 (77%)
September 2007	23	12 (52%)
January 2008	56	38 (68%)
September 2008	47	32 (68%)
January 2009	59	47 (80%)
September 2009	47	28 (60%)
January 2010	45	28 (62%)
September 2010	62	39 (63%)
January 2011	44	23 (52%)
September 2011	64	49 (77%)
January 2012	45	28 (62%)
September 2012	80	59 (74%)
January 2013	41	22 (54%)
September 2013	76	60 (79%)
January 2014	30	20 (67%)
September 2014	84	64 (76%)
January 2015	29	20 (69%)
September 2015	100	71 (71%)
January 2016	33	18 (55%)
September 2016	84	63 (75%)
January 2017	36	19 (53%)
September 2017	69	56 (81%)

## Passing Rates: PACES – 2001 - 2017

October 2001	36/72 = 50%
February 2002	34/74 = 46%
October 2002	29/72 = 40%
February 2003	30/69 = 43%
October 2003	27/59 = 46%
March 2004	39/64 = 61%
October 2004	26/69 = 38%
March 2005	35/75 = 47%
October 2005	28/75 = 37%
March 2006	36/75 = 48%
October 2006	16/73 = 22%
March 2007	44/74 = 59%
June 2007	44/74 = 59%
October 2007	36/55 = 65%
March 2008	36/74 = 49%
October 2008	29/65 = 45%
February 2009	39/75 = 52%
October 2009	24/72 = 33%
March 2010	33/75 = 44%
October 2010	40/74 = 54%
February 2011	23/66 = 35%
October 2011	34/70 = 49%
February 2012	32/74 = 43%
October 2012	32/74 = 43%
March 2013	28/75 = 37% (for HK local candidates)
October 2013	28/74 = 38%
February 2014	29/74 = 39% (for HK local candidates)
October 2014	21/74 = 28%
March 2015	36/75 = 48%
October 2015	35/75 = 47%
March 2016	40/75 = 53%
October 2016	36/75 = 49%
March 2017	26/74 = 35%
October 2017	26/75 = 35%

## Pass list (2017): Joint HKCPIE/MRCP(UK) Part II PACES Examination October

Chan Tin Yau  
Cheng Tsz Fai  
Chung Vivian Chi Yee  
Fung Hiu Fai Faraday  
Lam Pui Yung  
Lau Kendrick Pui Hong  
Lau Wun Nam  
Lee Ching Him  
Lee Yin Ling  
Lui Wai Cheung  
Lung Cheuk Pan  
Ng Ka Ching  
Ng Lun Pei  
Se Hoi Yip  
Shong Lynn Yim Wah  
Siu Long Hei  
Szeto Cheuk Ling Charing  
Tsang Lok Man  
Tsang Tsz Wai  
Tsang Wai Ping  
Wong Sai Man  
Wong Tin Wai  
Wong To Shing  
Wong Yu Wai  
Wu Kwun Yat  
Yuen Joseph Hin Ho

# PACES - Practical Assessment of Clinical Examination Skills: The Examiners' Perspective

**Professor Anskar Yu Hung LEUNG**

Chairman, HKCP Examination Committee

## Background

PACES (Practical Assessment of Clinical Examination Skills) was first introduced in 2001 to replace the then Part 2 clinical examination. It provides a more objective and structured assessment of clinical skills of basic physician trainees before entrance into specialist training. In its original format, the marking scheme of PACES was *station-based*. The marks at each station could compensate and were summed to give a total score that determined a pass or failure. In 2010, the scheme was revised to become *skill-based* and candidates in each station were assessed and marked based on separate skills. They had to pass not only the overall score, but also each of the seven skills (Table 1).

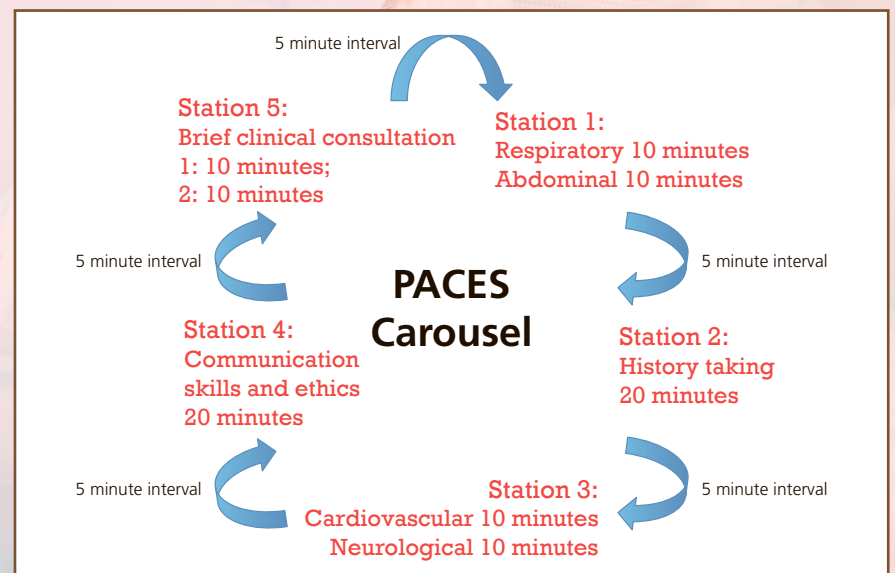
## PACES 2018

Two PACES "diets" are held in Hong Kong each year. Each diet lasts for 5 days and is conducted in 5 designated hospitals. Fifteen candidates are examined in three cycles each day, 2 cycles in the morning and 1 in the afternoon. As a result, a total of 75 candidates, mostly local medical graduates, are examined in each diet. In its present format, each PACES cycle comprises 5 clinical stations (Figure 1) where a set of core clinical skills are evaluated by two examiners (1 UK and 1 HK examiner) using an objective marking system. MRCP

**Table 1.** The 7 core clinical skills that are evaluated in the 5 stations of PACES. Candidates would have to pass each skill as well as the overall score.

Clinical Skill	Skill Description
A Physical examination	Demonstrate correct, thorough, systematic, appropriate, fluent and professional techniques
B Identifying physical signs	Identify physical signs correctly, and not find physical signs that are not present
C Clinical communication	Elicit clinical history relevant to patients' complaints in a systematic, thorough, fluent and professional manner.
D Differential diagnosis	Create a sensible differential diagnosis for a patient.
E Clinical judgment	Select or negotiate a sensible and appropriate management plan for a patient or clinical situation
F Managing patients' concerns	Seek, detect, acknowledge and address patients' or relatives' concern
G Maintaining patient welfare	Treat a patient or relative respectfully and sensitively. Ensure their comfort, safety and dignity

**Figure 1.** The PACES Examination Cycle.



(UK) emphasizes the importance of 2 examiners setting, or calibrating, the standard of each case before each examination and they will have to agree on the set of physical signs, history or communication and ethical issues that candidates should

identify (or exclude) to qualify each clinical skills. In most circumstances, the examiners aim for obvious and clear-cut rather than subtle and occult physical signs or issues to determine if a candidate should pass or fail a particular skill.

## Performance of candidates in Hong Kong

In U.K., the pass rates of PACES among U.K. graduates have been around 60-70% in the past 10 years and apparently they were on the rise in recent years. On the contrary, those in H.K. have been fluctuating between 30-60% and alarmingly hovering around the lower end of the range in the past few examinations. In many occasions, the overall performance of local candidates compared unfavourably even with those in neighbouring PACES centres like Singapore (personal communications). The exact reasons for the apparent inferior performance among trainees in H.K. are unclear. As the implementation of PACES has always been structured and meticulously administered by a team of highly experienced U.K. as well as local examiners, the examination or examiner factors should be considered constant against time and across all MRCP centres worldwide. Admittedly the levels of difficulties of patients and scenarios selected for each examination do vary but given the robust calibration procedures required by MRCP (UK), any such factor should also be considered random.

### So why?

### Do physical signs still matter?

Postmortem review of the local failure cases revealed that while some candidates failed in multiple skills and overall scores in PACES, often by a large margin, indicating inadequate examination preparation and skills, a substantial number of candidates with hitherto satisfactory overall pass marks, failed singly

in their ability to detect physical signs. These observations echoed the criticisms that modern day clinicians in general or physician trainees in particular count more on investigations than their clinical skills and acumens for decision-making and patient management. The temptation of more investigations in lieu of bedside examination often arises from patients' expectation and pressure of shortening hospital stay. That may be understandable. However, the relevance of physical signs is by no means trivial in common clinical encounters, for instance, bone marrow examination rather than an abdomen imaging appointment for a patient with splenomegaly, raised neutrophils and basophilia; acyclovir and analgesia instead of MRI (magnetic resonance imaging) of the hip joint for a patient with herpetic neuralgia of L1 dermatome; urinary catheterization rather than a kidney ultrasound appointment for an elderly man with raised serum creatinine and grossly enlarged urinary bladder ... just to name a few.

### A new integrated training programme

PACES is considered a safeguard for the basic skills and competence expected of a trainee physician. Therefore, recent outcry from candidates (and their trainers) about low pass rates should call for a collective reflection on the quality of training given to the trainees as well as the relevance of clinical skills to our profession as physicians. After a few rounds of discussion, the College has recently proposed the organization of an integrated training programme to target specifically at candidates who intend to sit for PACES. A working group has been formed that comprises members of HKCP

council, young College fellows, university academics and HA (Hospital Authority) Consultants. The new training programme, tentatively planned in August-September 2018 for its first run, will replace the training workshop on communication skills previously commissioned by HA as well as the PACES training day that was usually held on Saturday right after PACES. While the programme details have yet to be confirmed, it was decided that U.K. PACES examiners with experience in chairing PACES in overseas centres will be invited as mock examiners and share with local candidates their experience as examiners and expectation on candidates. To increase the exposure of candidates to PACES territory-wide and familiarize them with the examination format, the integrated training programme will be held in hospitals outside the 10 designated examination centres. Updated information and registration will be posted in the HKCP website as soon as possible.

### Conclusion

The recent concerns about unsatisfactory performance in PACES among H.K. candidates have not only raised the awareness of the importance of core competence in clinical skills and acumens, but the reflection on how physicians can make use of these unique skillsets and leverage on the rapidly emerging medical information and advanced diagnostic technologies to benefit our patients. New training programmes spearheaded by HKCP may provide an initiative and ground for more thoughtful discussion but would have limited impact on our way forward without the collective wisdom and determination of all trainees, trainers and each one of us in the physician communities.

# Road to Success in AIM Exit Assessment

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The objective of the AIM Exit Assessment is to ensure candidates acquire solid competence as independent specialists in Internal Medicine, capable of tackling acute and chronic medical problems for patients within prevailing ethical principles. Both depth and breadth of knowledge in Internal Medicine are expected. AIM candidates will be examined with a clinical viva for 45 minutes by three Panels (15 minutes for each Panel). Generally, each Panel will ask two scenario questions on Acute Medical Problems, Chronic Medical Problems or Ethics and Communication consecutively. Those AIM candidates who have submitted dissertations will be examined on the dissertation for 15 minutes by an extra Panel.

The average passing rate for the past three years is 90.4%, ranging from 82.9% to 100%.

Time is gold. Candidates should make use of this precious period (7.5 minutes only for each scenario) to show their competency as an independent physician. Keeping silent, up to 1-2 minutes, is a common problem noted during the assessment. Not only will the candidate be unable to finish the scenario questions, the examiner is given an impression of hesitancy in tackling clinical problems, a lack of knowledge and organization. If one has no idea about the answer, he/she should initiate the description of abnormalities in the scenario, demonstrate a basic bedside approach seasoned through daily practice using reasoned history

taking and physical examination. Most of the time, examiners will guide the candidates smoothly to approach the answers. On the other hand, requirement of excessive prompting is a common characteristic of failed candidates.

The section of Ethics and Communication seldom cause failure. Firstly, the spectrum of topics in this section is quite confined and candidates can be well prepared from experience of their predecessors. Secondly, there may not be absolute right answers to the clinical issues but candidates are assessed on the approach to the controversies in daily practice. The big steps in achieving a successful discussion should include analysis of the problems according to the principles of medical ethics, consideration of patient's own preference, getting advice from ethics committee and initiating application of guardianship in the absence of patient consent.

Despite good performance and scores in the Ethics and Communication section, the aggregate score obtained in the Acute and Chronic Medicine Panels must be 50% or above of the total score of the two Panels in order to secure a Pass in the Clinical Viva. Most of the failures in the past fell into this category. Exposure to general medicine or other subspecialties may be limited when a candidate focus too much on their concurrent subspecialty. Candidates should enrich and update their general medical knowledge by joining

grand rounds, rotating to clinics of other subspecialties and attending the three local scientific meetings recommended for Advanced Internal Medicine.

Since most of the scenario questions are selected from daily clinical practice, candidates should consolidate their daily knowledge and experience into a systematic approach to different medical conditions, for example approach to pyrexia of unknown origin. Listing out the differential diagnoses and suggesting purposeful investigations which are essential to solve the clinical problem. Interpretation of the test results should take into account of the sensitivity, specificity and limitations of the tests. After trimming down the possible differential diagnoses, candidates should actively propose the relevant diagnostic investigation. In the establishment of management plan, though disease specific treatment is important, one should start with general measures including patient education, life style modification, diet control etc. Similarly, advice on related issues for instances long term prophylaxis, risk factors control and disease notification could not be missed. Last but not least, the initial dose, route and precaution of common medications in emergency settings are expected in the Acute Medicine Panel, demonstrating that a candidate is independent, competent and ready to be a fellow in Advanced Internal Medicine.