

Issue 1/2015

May 2015

Clinical Trial Collaboration in ASIA What's Next?

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Remembering Dr Wu Lien-Teh A Public Health Hero pg 10

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Words from the Editor

CE TO CLINICAL OUTCOMES IN SION: APPLYING THE STAGES OF AVIORS IN THE CORFIS STUDY

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It is with great enthusiasm that I welcome you to the first issue of the newsletter for 2015. How time flies! The National Conference of Clinical Research is again around the corner and I hope like the previous one, we continue to receive support and see greater passion for research especially among the younger generation.

This issue commemorates the work done by Dr Wu Lien-Teh, a Penang-born doctor who has contributed in the promotion of public health, preventive medicine and medical education. He was famously known as a plague fighter

for his work in containing the terrifying pneumonic pandemic plague in China in 1910. He was also the first Malayan nominated to receive the Nobel Prize in Medicine in 1935. As a man who loved to read, Dr Wu collected donations to set up a free lending library in Ipoh, a town in Perak where he practiced as a General Practitioner. To promote his legacy, the Wu Lien-Teh Society has set up a fund to award exceptional medical researchers. The award will be presented for the first time to the Young Investigator and Best Poster winners in the coming National Conference of Clinical Research 2015 in Penang.

In the Chit Chat section, we have two excellent young researchers to share their stories. We also secured an interview with Anthony Nguyen, one of the initiators of The Regional Asian Clinical Trial Association (REACTA). We have also in this issue a special column to honour the outstanding work of Professor John Chan for receiving the Hunterian Professorship Award this year.

I'd like to recognize our editorial staff for their excellent work in maintaining and producing a quality newsletter. They are one of the inspiring lot of passionate CRC staffs who can do with a little time and a lot of commitment. Keep up the good work!

I hope that you will enjoy reading this issue. The newsletter will continue to be one of the vehicles for promoting research within the CRC family and beyond. Readers and CRC staffs are encouraged to contribute researchrelated news and announcements to the newsletter. We look forward to receiving your contributions.

gollder Dr Goh Pik Pin

Editor-in-Chief

ACHIEVEMENTS

• BABE Accredited Sites

Penang Hospital has been added to the list of sites accredited by NPCB to run BABE trials



NOTICE BOARD

• Visit by Pharmacogenomics Research Centre, Inje





PGRC team with CRC staffs

• MOSTI Research Grants

For more information, visit http://www.crc.gov.my/wp-content/ uploads/documents/research_grants_by_mosti.pdf

METERING SELF-REPORTED ADHERENCE TO CLINICAL OUTCOMES IN MALAYSIAN PATIENTS WITH HYPERTENSION: APPLYING THE STAGES OF CHANGE MODEL TO HEALTHFUL BEHAVIORS IN THE CORFIS STUDY



- Multicenter quasi-experimental design with Stages of Change (SOC) model
- Community clinics
- 6 months
- 379 hypertensive patients

Intervention group, n=209: Dietician counseling

- reduction
- Regular exercise

Control group, n=177:

Standard treatment

Adherence to Na

> fruit & vegetable intake



- Systolic BP
- Diastolic BP



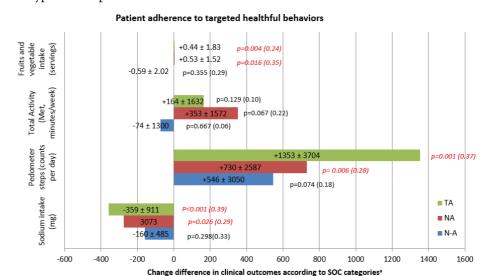
Patients were categorized into 3 groups at 6 months

- Totally adherent (TA)
- Newly adherent (NA)
- Non-adherent (N-A)

Patient-reported compliance to these advocated healthful behaviors yielded clinically beneficial reductions in blood pressure, weight and waist circumference.

SOC application could be metered to behaviour change therapy that is linked to defined clinical endpoints and specific for multiple behaviours.

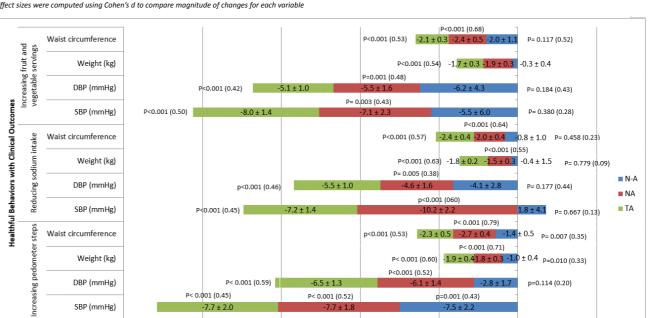
3



Note: p value (Cohen's d) Effect sizes were computed using Cohen's d to compare magnitude of changes for each variable

-25

-20



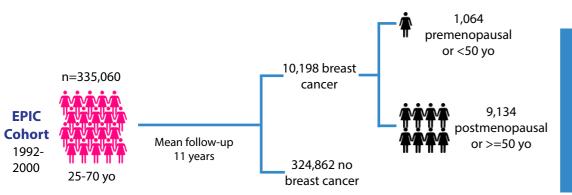
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Source: Karupaiah T, Wong K, Chinna K, Arasu K, Chee WS. (2014). Metering Self-Reported Adherence to Clinical Outcomes in Malaysian Patients With Hypertension: Applying the Stages of Change Model to Healthful Behaviors in the CORFIS Study. Health Education and Behavior.

-10

-5

COFFEE AND TEA CONSUMPTION AND RISK OF PRE- AND POSTMENOPAUSAL BREAST CANCER IN THE EUROPEAN PROSPECTIVE INVESTIGATION INTO CANCER AND NUTRITION (EPIC) COHORT STUDY



Overall

- Mean age at recruitment = 51 years
- Median tea intake = 29ml/day
- Median coffee intake = 290ml/ day

Questionnaires

- self-administered semi-quantitative food-frequency
- dietary history
- semi-quatitative food-frequency

Analyses

- Multivariable Cox regression
- Exit time: age at diagnosis as first tumor, death, emigration, loss to follow-up or end of follow-up

	Premenopausal breast cancer	Postmenopausal breast cancer	ER+ and PR+ subtype breast cancer	ER- and PR- subtype breast cancer
Total coffee n=335,060	Moderately low intake associated with higher risk compared to low intake (adjusted HR 1.23, 95% CI 1.02 to 1.48)	Each 100ml increase in daily intake inversely associated with risk (HR continuous 0.99, 95% CI 0.98 to 0.99)	No association	No association
Caffeinated coffee n=226,368	No association	High intake associated with lower risk compared to low intake (adjusted HR 0.90, 95% CI 0.82 to 0.98)	For every 100ml higher intake, risk lowered by 2% (adjusted HR 0.98, 95% CI 0.96 to 0.99)	For every 100ml higher intake, risk lowered by 4% (adjusted HR 0.96, 95% CI 0.93 to 1.00)
Decaffeinated coffee n=176,373	No association	Non-consumers associated with lower risk compared to those with low intake (adjusted HR 0.89, 95% CI 0.80 to 0.99)	No association	Non-consumers associated with lower risk compared to those with low intake (adjusted HR 0.69, 95% CI 0.50 to 0.94)
Tea n=200 800	No association	No association	No association	No association

Source: Bhoo-Pathy N, Peeters PH, Uiterwaal CS, Bueno-de-Mesquita HB, Bulgiba AM, Bech BH. (2015). Coffee and tea consumption and risk of pre- and postmenopausal breast cancer in the European Prospective Investigation into Cancer and Nutrition (EPIC) cohort study. Breast Cancer Research 17(1):15.

Professor John Chan Kok Meng

Professor John
Chan Kok
Meng, Consultant
Cardiothoracic Surgeon
at the Sarawak General
Hospital Heart Centre,
recently delivered the
prestigious Hunterian
Lecture to the Society
for Cardiothoracic
Surgery (SCTS) at
their annual meeting



in Manchester, UK. He received the Hunterian Professorship Award from the Royal College of Surgeons of England. The Hunterian Professorship is one of the highest accolades which the Royal College of Surgeons of England can award and is given in recognition of outstanding contribution to research in surgery.

Professor Chan is the first Malaysian in more than 40 years to receive the Hunterian Professorship while working in Malaysia. His main research are in the fields of mitral and tricuspid valve repair surgery and also in aortic valve surgery, aortic surgery, coronary artery bypass surgery, cardiopulmonary bypass and lung cancer surgery, amongst others.

He is actively involved in promoting and developing research capacity in Malaysia in addition to his full time clinical work in the heart centre. He runs a weekly research consultation clinic at the Sarawak General Hospital Clinical Research Centre (CRC) where individuals and teams can consult him about their research ideas and proposals and develop them into proper research studies. He is also a regular facilitator at

the National Clinical Research Centre (NCRC)
Research Camps which are held about once
a month in different parts of the country.
Participants in these camps present and
discuss their research ideas and proposals with
the facilitators who give them feedback and
improve on their proposals.

RESEARCH. 2

Professor Chan also sits on the Technical
Committee of the NCRC, is a member of
the Medical Research and Ethics Committee
(MREC) of the Ministry of Health, and a
founding member of the Malaysian Network
for Surgical Research (MyNETS), which seeks to promote
research in surgery. He is also a founding steering
committee member and is responsible for setting up the
National Cardiovascular and Thoracic Surgical Database
(NCTSD) registry which collects cardiac surgical
activities in the country and its results and outcomes.
He was also on the expert panel for coronary artery
revascularisation which produced appropriate use criteria
guidelines on coronary artery bypass graft surgery and
percutaneous coronary interventions.

Professor Chan has authored numerous book chapters and publications in scientific journals and is regularly invited to give lectures and presentations at national and international meetings including in the USA, Europe and Asia.









UP CLOSE and Personal

CRC speaks to Mr Anthony Nguyen, Director of Business & Project Accelleration at the Dong-A University Hospital Global Clinical Trial Centre.

Q: Please tell us about yourself and your background

A: I graduated from Indiana University, Bloomington, and have a bachelor's degree in Economics. I began my career as a Financial Advisor for Morgan Stanley in Beverly Hills. A few short years later, I moved on to join Merrill Lynch's global private client group. Today I reside in Busan, South Korea, where I have been managing the Business and Project Acceleration Team at Dong-A University Hospital's Global Clinical Trial Center since 2010. I am one of the founding members of REACTA or the Regional Asian Clinical Trial Association. I am also a co-founder of the academic English editing company Streamline Edit Korea. I am married to Rebecca Kim and have 3 amazing children. My first daughter, Khalisi is now 3, her brother Stryker is 2, and the youngest is 5 months, his name is Raiden. Outside of work, I enjoy all

type of outdoor activities, such as hiking with my children, surfing, running and cliff diving. I also enjoy cooking, so I am a big fan of Malaysian foods and its amazing culture.

Q: What is your responsibility at the Dong-A University Hospital Global Clinical Trial Centre?

A: One of my many roles at Dong-A University Hospital is to promote its expertise and experience as a leading academic institution in clinical research, and status as an Asian clinical research hub. This is for the purpose of attracting important clinical studies and partnerships to Dong-A and to all of Asia. To successfully



Anthony's happy family

accomplish this, I am directly

responsible for managing all feasibility tests, reporting, research, event planning and organizing, attending annual meetings/training, budget analysis, recruiting key individuals, public relations, marketing, identifying and developing strategic partnerships at DAUH. One example of our strategic partnerships is The Regional Asian Clinical Trial Association or REACTA (www.reactaforum. org) which my team initiated in 2012. The first REACTA Forum was hosted in 2013 in Busan, South Korea and the founding members include Japan's Chiba University Hospital, Taipei Medical University Hospital, Saint Mary's in Hong Kong, and Clinical Research Malaysia. Currently, my team is in the process of planning and organizing the 3rd annual 2015 REACTA Forum in Japan, where we hope to execute an MOU between all founding members and showcase our collaborative efforts. The 2015 REACTA Forum will also include sites from Singapore, Thailand, China and Vietnam.

Q: Can you tell us more about the role and achievements of CTC at Dong-A University Hospital?

A: The role of Dong-A University Hospital is quite simple. To become a global leader in research and to become a key opinion leader to the pharmaceutical industry. For years, the industry has been talking about globalization and collaboration. Although the US and Europe have quickly responded and adapted to the industry's demand, Asia is still very far behind. So my team at DAUH intends to help change how we work together in Asia by becoming a true leader; a leader that creates more leaders and a leader that leads by example.

With regards to achievements, my team, in collaboration with a few other countries has been successful in launching REACTA Annual Forum. In 2013, we presented the proposal for collaboration in Busan. Our guests included members from Japan, Taiwan, Hong Kong,

USA and Malaysia. In 2014, the attendees from 2013 returned to Busan for a second time to update us on their performance. DAUH shared its detailed business strategy and plans for 2015. This meeting was special, because it drew in more leaders from South Korea, Singapore and the US. The 3rd annual REACTA Forum is scheduled for November 26-27th in Chiba, Japan. In Japan, REACTA members will have the opportunity to present their collaborative efforts to the PMDA and other Japanese Pharmaceutical companies, which we hope will

increase the total number of sponsored initiated studies brought to our partners in future.

Q: What is your opinion regarding Asia-Pacific region's potential to conduct good quality clinical research?

A: In my opinion, the Asia-Pacific region has incredible potential, not only to conduct quality research, but also to become

leaders of the industry. Some of the reasons for my opinion include strong government support and state of the art infrastructure. At DAUH for example, the Korean government invested USD 25mil to build our Regional Heart and Brain Center for the 7 million plus population in Busan. This investment has improved our hospital's ability to perform research and has increased our access to potential patients. However, the biggest and probably the most important contributing factor to Asia's potential is human capital. Asia has a highly skilled labour force with diverse educational backgrounds. For example, Korean Medical Doctors are known to seek training in the US and Europe on top of the rigorous training that they have successfully completed in their own country. So in addition to being diverse, Asian professionals are extremely motivated, disciplined and loyal to their employers - all the ingredients necessary for success.

Dong-A University Hospital foyer area

Q: Do you see any potential for collaboration between South Korea and Malaysia?

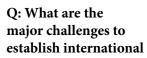
A: In my opinion, there is great potential for collaboration between Malaysia and South Korea. The first way for the two countries to collaborate would be to form some type



Staff at the Regional Clinical Trial Centre

of educational collaboration. For example, Malaysia's CRM and CRC are the equivalent of Korea's KoNECT, so there are lessons to be learned and shared. Another example would be joint training for future research teams (researchers, research coordinators and business strategy unit). The training could be as short as 7 days or as long as 6-12 months. If the training is successful, the next move would be for the two countries to collaborate through Investigator Initiated Research. By sharing protocols, and working on specific projects, this will help to standardize

practices. It will also help to develop relationships between investigators. Once the relationship is established and trust is formed between collaborators, the relationship could expand into Sponsored Initiated Research from Global and Korean Pharmaceutical companies.



collaboration in this region, and how do you think we can overcome these challenges?

A: Successful collaboration depends on several important factors, such as the environment, membership characteristics, organization, purpose, resources and most importantly communication. When we consider the Asian region, I think there is a lack of communication between countries and their decision makers. One of the reasons is because there is no common language. Although English is widely used, there are still many countries that are not fluent in the language. In my opinion, it is really difficult to establish trust, fully understand another's culture and standardize practices, if the collaborators are unable to communicate regularly and effectively. Another major hurdle is the struggle of leadership. I think there is misunderstanding of what a true leader really is. Most people tend to believe that it's a numbers game, but when it comes to research, our efforts should be to help create future leaders for the benefit of humanity, not just for fame or fortune.

In order to overcome these challenges, I think we need proof of concept. And REACTA was formed to do just that, to show that collaboration in Asia is possible and it does have major benefits. So to start, we must identify 2-3 collaborators and establish a working relationship. The group must then reveal their true feasibility and expertise. Once the strengths and weaknesses are revealed, we can move forward with a potential project. The project should have clearly defined goals and roles, require equal involvement, realistic demands, an organized structure, and shared risks and resources. If the project proves to be successful, it will be used as a model for all future collaborations in Asia.

CHIT CHAT Why I do research

Two Clinical Research Centre researchers, Ooi Qing Xi and Hor Chee Peng speaks to us about their research adventures

Q: Can you tell us when were you first exposed to research?

A: I did my first research in computational drug design during my undergraduate study at the School of Pharmacy, University of Manchester, as part fulfilment of the Master of Pharmacy (MPharm) degree. I did not have any expectations when I first started. It felt like it was just another assignment that students are forced to complete. However, as I carried on my journey, I found myself getting addicted to the research work and I irrationally spent disproportionate amount of time on it. It was a wonderful journey and since then I have had fond memories of doing research.

Q: What motivates you to do research?

A: I joined Clinical Research Centre (CRC) Perak in 2012 and it was a life-changing decision. I felt blessed for the opportunities to meet many amazing people including a few of my colleagues with obsessive compulsive disorders (OCD) when it comes to research, my unconventional "boss" and not to mention the many people in the workshops, conferences or research collaborations that I have attended. They are all a reservoir of inspiration for me to continue to do good research work.



Qing Xi (second from right) with fellow colleagues at the 8th National Conference of Clinical Research 2014

Q: What research are you interested in?

A: I do not have special interest in specific disease area. I am a pharmacist however, since I have joined CRC Perak, I am hopelessly hooked by the beauty of statistical modelling technique. Statistics is very foreign to me but I find everything very interesting and I want to learn and understand them all. For the first time in my life, I find myself enjoying to study, to the point that I eat, sleep and dream statistics (yes literally!). I know it sounds crazy but it feels absolutely amazing to find a new love or rather a new purpose in life at this stage in life. I am

planning for admission to the University of Otago, New Zealand, to do my PhD in Pharmacometrics (also known as quantitative pharmacology) under the supervision of Professor Stephen Duffull. I look forward to the learning journey; I think it will be a very exciting one.



Ooi Qing Xi

Q: Is there a quote that you live by?

A: Albert Einstein had once said that "play is the highest form of research". I love the quote and faithfully believe that if research can be done as if we were playing, while we may not make ground-breaking discovery just like what Einstein did, at least we enjoy the process.

Q: Do you have any advice for other young researchers?

A: As a very young researcher, I am used to receiving advices rather than giving them. If there is one advice that works for me, it is to give enough space, chance and freedom for your curiosity, instinct and logic to grow. Never ever ignore the screaming "WHY?" in your mind even if it means defying the current accepted practice and standards. Most importantly, do not stop asking "WHY?" because you are worried of how other people (including your "bosses"... Opps! Sorry for the rather incendiary advice) will perceive and judge you, researchers should be able to agree to disagree anyway!

Qing Xi is a Research Pharmacist in CRC Raja Permaisuri Bainun Hospital, Ipoh. She will be pursuing her PhD in Pharmacometrics this year.



Never forget to have fun!

Hor Chee Peng



I remember getting a touch of "research" during my college year in Banting. I call it "research" because at that time its concept was still vague to me and I was only doing it to fulfil my course requirements. For three months, I investigated if it was better to

grow Chinese chives with organic (chicken dung) or chemical fertilizers. Although I spent a lot of time on the project, the results were unremarkable and the effort in vain. Reflecting back, I probably must have overlooked some confounding factors. Nevertheless, it was a good experience.

After that, I moved on to university in Galway. The school had posters of Nobel Prize winners in Physiology or Medicine in shiny frames hanging on the corridor walls. Whenever I walked along that corridor, the posters never failed to mesmerize me and spark my curiosity of the amazing stories behind each discovery. That humbling knowledge and Dr John Donlon, who, if I may add, was an Albert Einstein look-alike, instilled my love for biochemistry. These were the beginnings of what would be my vibrant research journey.

My love for biochemistry and cellular biology led me into stem cell research during my summer break. I was fortunate enough to be enrolled in the Undergraduate Research, Education and Knowledge Award (UREKA) programme as a research assistant at the Regenerative Medicine Institute (REMEDI). It was fascinating to culture stem cells, transfect them with recombinant HIV, lyse them up and then analyse how these lentiviral vectors integrate into human mesenchymal stem cells. This programme equipped me with abstract writing, presentation, and public communication skills. That summer, I also had many intellectual discussions with renowned scientists in fun weekly activities such as boat trips and barbeques. It was the infectious enthusiasm of my mentors, Professor Timothy O'Brien and Dr Barry McGrath that I decided to return to the same lab the following summer. I worked on a similar project which gave me an opportunity to present at the International Student Congress of Medical Sciences (ISCOMS) in Groningen and later at the European Student Congress (ESC) in Berlin in 2007.

By then I had already formed an idea of what research was all about. I was lucky to subsequently be exposed to biostatistics in an immensely engaging discussion on the statistical results published in a BMJ paper with my Dutch lecturer, Dr Thomas Kropmans. Later, together with Dr Jim O'Donnell, we worked on a survey about

e-prescribing among general practitioners in the west of Ireland, with funding from the Healthcare Informatics of Ireland Society (HISI). This led to my first and only publication so far.

My interests in health beyond individuals were heightened after taking a module on International Health and Development. I decided to do my internship at the World Health Organization and with recommendations from Professors Martin Cormican and Máire Connolly, and funding from the Irish Health Research Board (HRB), I travelled to Geneva for 8 weeks. I worked with Dr Pierre Formenty, an emerging infectious disease expert, reviewing global Henipavirus infections and creating webpages with updated information. During the Beijing Olympics, I was a part of the Epidemic and Pandemic Alert and Response team and had the chance to attend daily update meetings on global outbreaks and surveillance.

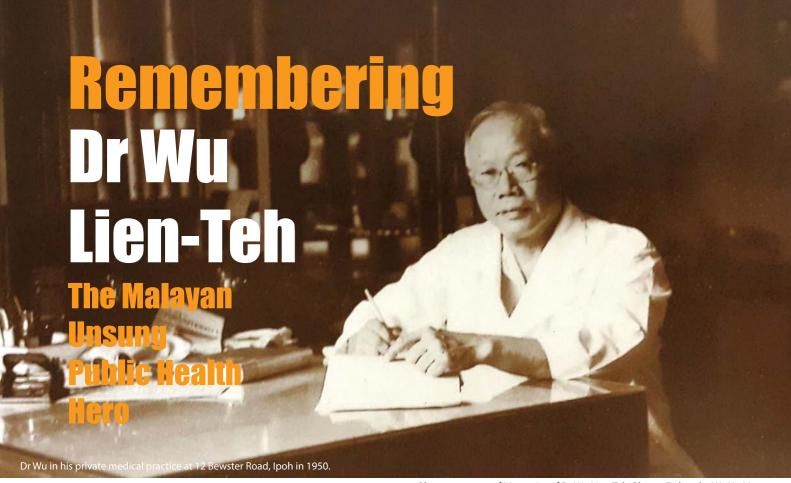
I am now back in Penang and my research journey continues. It is no doubt challenging to actively carry out both research and clinical work at the same time but it is also not impossible. I am grateful for the enormous support from my hospital directors Dr Norsidah Ismail (former) and Dr Nur Aslina binti Bahakodin (present), my fellow colleagues, and also Dr Irene Looi who got me involved in my first clinical trial – Vitamin E in Neuroprotection Study (VENUS). Through Clinical Research Centre (CRC) I have the opportunity to collaborate with experienced researchers from the region. I am currently developing my clinical research interest in stroke, diabetes and infectious diseases.

So, why do I do research? For me, it started off as to feed my curiosity before the passion gradually grew and has now become a part of my routine. I like what I do. I believe that research can shed light at the end of the tunnel in searching for solutions for many issues that matter to mankind. I am lucky to have met many excellent mentors and be in a conducive environment with opportunities to learn and grow! It will be a journey worth the bumpy ride!

Peng is a Medical Officer in Kepala Batas Hospital and is also affiliated with CRC Hospital Seberang Jaya as a researcher. He is involved in quite a number of researches with keen interests in infectious diseases and has recently obtained his MSc in Global Health and Infectious Diseases.



Peng, as he is affectionately known as, together with the other rapporteurs of National Conference of Clinical Research 2014



Photos courtesy of Memories of Dr Wu Lien-Teh: Plague Fighter by Wu Yu-Lin

Virtually unknown to most Malaysians, Penangite Dr Wu Lien-Teh was a highly respected public health physician and internationally acclaimed plague fighter in the medical fraternity. His life story and heroic achievements has remained an inspiration for generations. This is the story of his unyielding passion and determination as a doctor.

D orn on 10th March 1879 under a lucky shinning **D**moon, Dr Wu Lien-Teh was a remarkable Malayan doctor and the first student from Malaya to study medicine at Cambridge, Great Britain. In the early days, he was better known by his Cantonese name Ng Leen Tuck or his Hokkien name Gnoh Lean-Tuck. His father was a young Cantonese immigrant from Taishan, China while his mother was a second generation resident of Malaya. Dr Wu was the eighth child and the fourth son in the family of 11 children.

Early influences in his education

Dr Wu received his early education in Penang Free School. He was the youngest among 20 boys in a special class for coaching the most promising students for the Queen's Scholarships¹, a competitive examination held annually in Singapore. He won the prestigious scholarship in 1896 which opened the gateway for him to pursue medicine in Emmanuel College and he took a first-class in the Natural Sciences Tripos². Dr Wu won almost all the prizes and scholarships, including the Cheadle Gold Medal in Clinical Medicine and Kerslake Scholarship in Pathology. He graduated with an M.B., B.Ch. in 1902.

Subsequently, he was elected to the Emmanuel College Research Studentship and spent a year working under

Ronald Ross (Nobel Laureate in Physiology or Medicine in 1902 for his discovery and work on malaria) at the Liverpool School of Tropical Medicine, Karl Fraenkel at the Bacteriological Institute of Halle in Germany, and Élie Metchnikoff (Nobel Laureate later in 1908 for his work in immunity) at the Pasteur Institute in Paris. He proceeded for his M.D. at Cambridge with his first scientific paper titled Presence of Tetanus Spores in Gelatin Injections and held a resident post at the Brompton Hospital.

Early research interest and career path

r Wu returned to the Straits Settlement after Completing his degree. However, there was no specialist post for him as at that time only British nationals could hold the highest positions as fully qualified medical officers or specialists.

With his College Studentship renewed for a second year in 1903, he was recommended by the Colonial Office to join as voluntary staff in the newly established Institute for Medical Research, initially known as the Pathological Institute. This prompted him to conduct investigations on beri-beri, together with malaria and dysentery being the most prevalent diseases affecting local populations.

He also worked on parasitic nematodes (Ascaridae) in bullocks during his time in the institute and published in the third volume of the Institute's Study Series. Upon

1 Formerly known as the Higher Scholarship, the Queen's Scholarship was founded in 1885 by Sir Cecil Clementi Smith (then Governor of the Straits Settlements) to enable promising youths from the entire Straits Settlements to pursue advanced studies in Great Britain

completion of his Research Studentship, he returned to his hometown of Penang, bought over a dispensary from a British lady doctor and started his own private practice in Chulia Street.

Early career in Penang

D y the age of 25, he was actively participating in a Bmyriad of contemporary social issues, advocating for elementary education for girls, forming debating and literary clubs and writing articles in newspapers calling for abolition of gambling and spirit farms. He was very vocal in banning the opium trade and established the Anti-Opium Association in Penang and organised the first Anti-Opium Conference in the Straits Settlements and Federated Malay States in Ipoh. His moves attracted the attention of powerful unscrupulous parties involved in the lucrative trade and led to a discovery of almost an ounce of tincture of

opium in his dispensary in a raid by the

Senior Medical Officer of Penang. This opium had been inherited from the previous doctor and had never been used. Although opium was freely available to anyone who wanted to buy it, a registered doctor needed to have a special licence to dispense it. He was charged with illegal possession of a "deleterious drug", fined \$100 and ordered to apply for a licence without delay.

His prosecution and appeal rejection attracted worldwide publicity, including an invitation from the then Grand Councillor Yuan Shih-Kai of the Chinese Government in 1907 to take the post of Vice-Director of the Imperial Army Medical College in Tientsin (now Tianjin) to train Chinese doctors for the army. Thus he entered his official career in China where he successfully served unperturbed through several revolutions and regimes, as he so picturesquely recalled in his autobiography.

In order to prepare for his new job, he studied the methods adopted by the Royal Army Medical Corps in London and the General Staff in Berlin for six months. He attended an Anti-Opium Meeting at the Queen's Hall while he was in London and gave an impromptu speech describing the situation in the Straits Settlements. He appealed to the conscience of the British people to find an alternative source of revenue and halt the traffic of this "alluring poison" to which he received a standing ovation from 500-strong delegates.

Fighting the plague in China

Tn the winter of 1910, at the age of 31, he was ▲ appointed as head of mission to fight a terrible

> Dr Wu working in his office at the Administration and Laboratory Block of Harbin Hospital in 1920. The newly constructed building is equipped with steam heating.

mysterious epidemic raging in Northern Manchuria and spreading south to Peking. The sick displayed fever, cough with streaked sputum and purplish discolouration of skin with death invariably ensuing within a few days. He was instructed by the Foreign Office to travel to Harbin, an international township that grew from development of railways,

to investigate this disease which killed 99.9% of its victims. There were no known remedies and only the vaguest notions of defence. It took a long time before the danger of droplet infection sank in. Doctors had worked with their patients without protection and the mortality rate among health care staffs rose to 46%.

Dr Wu had a stroke of luck when he performed a postmortem on the third day of his arrival, probably the first ever in Manchuria on a plague victim. He confirmed the epidemic to be a pneumonic plague from organisms he cultured from the lungs of the victims. He quickly formulated a policy to investigate its spread and instituted public health measures to halt the outbreak. Plague victims must be hospitalized, contacts isolated and homes disinfected, and people were encouraged to wear gauze-and-cotton masks. Population movement must be restricted especially on the railways, a proposal that was met with violent resistance as the period was close to the Lunar New Year.

With the ground iron-hard in the cold winter, graves could not be dug and bodies of the victims were piling up, creating an incubation ground for the plague. Dr Wu suggested mass cremation of the corpses however, as it was against the tenets of Confucianism which venerated filial piety and ancestor worship, the idea was also met with resistance. Through his ingenuity and relentless struggles, he carefully sought support from local officials to avoid mass revolt and finally obtained the Imperial Edict for mass cremation.

On 31st January 1911, 1416 corpses were cremated, marking the first mass cremation in Chinese history and



²Tripos was named after a three-legged stool occupied by the 15th century examiners when testing a candidate for Honours

the turning point of the epidemic. Death toll began to decline and within two months, the epidemic which lasted seven months, covered a distance of 1700 miles, took 60,000 lives, and cost \$100 million in losses reached zero count with the last case recorded on 1st March 1911. The origin of the plague epidemic was eventually traced back to marmot trappers who had inhaled *Pasteurella pestis* from skins of Tarbagan marmots (*Arctomys bobac*).

In recognition of his contribution Dr Wu was asked to organize and chair the first International Plague Conference in Mukden (now Shenyang) in April 1911. Many questions on the genesis of plague were brought forward by him at the conference, attended by scientists from all over the world: United States of America, France, Germany, Italy, Great Britain, Austria-Hungary, Netherlands, Russia, Japan, Mexico and China. He presented a plague research paper at the International Congress of Medicine, London in August 1911, which was published in The Lancet the same year, titled *Inaugural address on plague*. In 1923, he published another paper titled *Investigations into the relationship of the Tarbagan (Mongolian Marmot) to Plague* in The Lancet.

He had become world-famous for this achievement, nevertheless it never affected his innate modesty. Twice he declined high office positions, first offered by the Manchu Court and later by Chiang Kai-Shek to be Chief of the Army Medical Service with the rank of Surgeon General to the Ministry of Defence, preferring instead to pursue his work on plague.

His other works

A fter the plague epidemic, Dr Wu spearheaded the North Manchurian Plague Prevention in 1912 in Harbin and expanded the scope of its service to cholera, scarlet fever and anthrax. This was the only properly organized attempt by the Chinese Government to provide a public health service in the country. Later, he became the Inspector General for the National Quarantine Service (1931-1937) and the Executive Chairman of the Cholera Bureau.



Dr Wu acting as a chair in a banquet held in honour of two Malayan political leaders, Tunku Abdul Rahman, President of the United Malays National Organisation (UMNO) (left) and Dato Sir Tan Cheng Lock, President of the Malayan Chinese Association (MCA) (right) during their visit to Ipoh in 1954.

He attended the 1911 International Hague Opium Convention and the 1913 International Hague Narcotic Convention and was appointed as one of the three official delegates to sign an agreement under which 12 participating countries undertook to enact effective laws and regulations for the suppression of opium and other narcotics. He published over 92 papers including 31 on plague and numerous others on infectious diseases, public health, narcotics and medical history.

His 30 years of experience in that region had brought compensation in the form of two bulky monographs - *A Treatise on Pneumonic Plague* published by the League of Nations, Geneva in 1926 and two editions of the *History of Chinese Medicine* in 1932 and 1936, the latter in collaboration with Dr Chimin Wong from Shanghai. At his seventieth, he produced his masterpiece, *Plague Fighter: The Autobiography of a Modern Chinese Physician*, a remarkable book packed full of his life episodes, but revealing him as a warm-hearted family man, intensely proud of his kith and kin and of his offspring.

Modernizing medical education and services in China

In a long memorandum on "Medical Education in China", Dr Wu advocated radical improvements in training of medical students, including the adoption of human dissection in recognition of the value of post-

Delegates from 11 nations, Chinese officials, members of diplomatic corps and some guests at the International Plague Conference in Mukden, April 1911. Dr Wu was the Chairman of this month-long historic conference.





Institute for Medical Research, Kuala Lumpur in 1994. Dr Wu was the first local research staff at the institute on his return from Cambridge University in 1903.

mortems and systematic clinical teaching in hospitals, and established the Central Medical Council and the essential use of English as a teaching medium in addition to Chinese.

Together with 22 Chinese doctors, the China Medical Association was formed on 5th February 1915 with Dr Wu as its first Honorary Secretary. He later served for two terms as President. He was also the editor of its journal, *National Medical Journal of China*. He then continued his work in modernizing China's relatively backward medical services by building hospitals and reorganising the essential branch of the International Preventive Medicine at various seaports.

Recognition of his contributions

r Wu acquired substantial reputation both **U**in China and in the international scientific community. He was appointed the Physician Extraordinary to President Yuan Shih-Kai in 1912 and to successive Presidents of China. He received his Doctor of Laws (LLD) honorary degree from Hong Kong in 1916, was awarded Paokuang Chiaho (brilliant jewel and cereal) in 1919 by the President of China and conferred the Doctor of Science (D.Sc.) honorary degree by the University of St. John's in Shanghai. In 1923, he became the first Chinese to be invited to Japan as an exchange professor and in 1926, the first non-Japanese to be honoured with the high degree of Igaku-hikushi (Doctor of Medical Sciences) by the Imperial University of Tokyo. In 1924, the Rockefeller Foundation awarded him a Fellowship in Public Health for his Master of Public Health study at the Johns Hopkins University.

Besides being the first Malayan nominated for a Nobel Prize in 1935 for his work on pneumonia plague and especially the discovery of the role played by Tarbagan in its transmission, he was awarded the Legion d'honnuer by the French Government and the Order of Stanislaus, Class II by the Czar of Russia.

Later years in Malaya

At age 58, Dr Wu moved back to Malaya for his retirement and lived quietly in Ipoh where he worked as a General Practitioner where he gave free consultations and treatment to the poor. More and more, he longed for a "peace and quiet" life. Although he still read as much as he did before, his interest had shifted from medical books to arts, history and philosophy. To encourage the young to read, he collected donations to start the Perak Library (now the "Tun Razak Library"), a free lending public library. He practised medicine until the ripe age of 80, before retiring in Penang. Not too long after, he began feeling unwell and woke up one morning to find his tongue thickly furred. He asked for his second daughter and told the *amah* to send for the ambulance but before either could arrive, he passed away. It was 21st January 1960 and he

was 81.

Regarded as the first person to modernize China's medical education and services, Dr Wu Lien-Teh's contributions in promoting public health, preventive medicine and medical education was commemorated in bronze statues of him in Harbin Medical University and in Penang Medical College. A road named after him can be found in Ipoh Garden South and in Penang, a road near Penang Free School was named Jalan Taman Wu Lien-Teh to honour him.

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One of the last photographs taken of Dr Wu, 1960.



CRC DUCHESS OF KENT HOSPITAL SANDAKAN

CRC Duchess of Kent was established on 21 July 2014. The CRC office is located on the first floor of the Specialist Clinic Building and it is equipped with an ISR and an IIR room on the second floor of the same building. A section of the library was converted into the office while the Medical Outpatient Department (MOPD) consultation room was transformed into the ISR and IIR rooms.



CRC HDOK Head Dr Lai Chung Ket with Deputy Dr Wong Hui Chin, Manager Dr Eswaran and participants of the HDOK Research Methodology Workshop



ISR and IIR rooms Meeting area and workstations



Dr Heric Corray, Director of HQE in 2013 (not in photo: Dr Ahmad Toha, Dr Michal Christina, SN Ammar Rafidah and



Mini library



Administration room

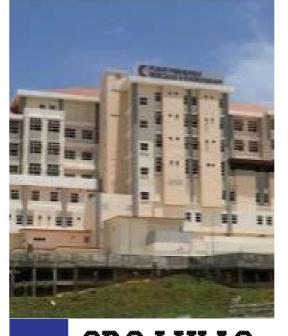


Meeting room

Previously known as CRC Sabah, CRC HQE was first established in Sabah in 2007. Headed by Datuk Dr Jayaram, assisted by Deputy Dr Ahmad Toha Samsudin and Manager Juhanah Gimbo, the center was operational by 2008. The unit moved to its current building in March 2010. In October 2013, the building was officially launched by Dato Dr. Jeyaindran Tan Sri Sinnadurai. The unit has a workstation dedicated for ISR activities.

CRC QUEEN ELIZABETH HOSPITAL KOTA KINABALU





CRC LIKAS HOSPITAL KOTA KINABALU

In 2008, CRC Likas operated as part of the CRC Sabah network with Dr Jayendran Dharmaratnam as the Head. CRC Likas saw a change in Heads with Dr Daren Teoh taking over in 2010 followed by Dr Flora Chong in 2013. The unit was officially established and launched by the Director General of Health in February 2011 before moving to its current location at Level 7, PPNR Building in November 2012.



CRC Office



Monitoring area







CRC Likas team From left: Vu Oi Ling, Roslin Guadih, Kueh Bing Ling (Manager), Dr Flora Chong Li Tze (Head), Dr Tan Bee Hwai (Hospital Director), Dr Fong Siew Moy (Deputy Head). Dr Raia Nurul Izni Binti Raja Mohd Nordin, Fatrina Simon and Katinah Majunkob



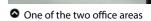
CRC HQEII team with participants during the Good Clinical Practice course in 2014

Laboratory











Officially set-up on the 22 December 2011, CRC HQEII is strategically set up within the cardiology department of the hospital. Headed by Dr Liew Houng Bang and assisted by Deputy Liau Siow Yen and Manager Wong Mui Nyuk @ Linda, the unit

areas, a laboratory, a meeting area and a lounge.

currently houses 3 consultation rooms, 2 office

CRC QUEEN ELIZABETH II HOSPITAL KOTA KINABALU



JANUARY to APRIL 2015



CRC Network Meeting 2015 Date: 9-10 March 2015

Venue: Palm Garden Hotel IOI Resort, Putrajaya

The Clinical Research Centre network congregated at Palm Garden Hotel for its first network meeting of the year. A dialogue was held with Datuk Dr Jeyaindran a/l Tan Sri Sinnadurai. Dr Shahnaz Murad and speakers from the Pharmacy Practice and Development Division were invited to share on the career paths of doctors and pharmacists respectively. The new CEO of Clinical Research Malaysia was also invited for a dialogue. Each Regional CRC presented their plans for 2015 and discussed on ways to move forward.





NIH Research Dialogue Date: 27 January 2015

Venue: Auditorium Mutiara, Institute of Health Management (IHM), Bangsar, Kuala

Lumpur

A research dialogue was held at the Institute of Health Management (IHM), NIH on dengue fever, a global public health challenge. The distinguished speakers include Dato' Dr Amar Singh, Consultant Paediatrician, Dr Ho Bee Kiau, FMS Botanik Health Clinic, Dr Maria Lee, Anaesthetist and Head of CRC Sultanah Aminah Hospital, Johor Bahru, to name a few. This dialogue successfully addressed the current epidemiology in Malaysia including incidence and trends of the disease, predictors of treatment outcomes and evaluation of mortality risk.



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