



College of Public Health and Occupational Physicians

Newsletter Issue 9

December 2016

President's message



A/Prof Vernon Lee

Dear Fellows,

During this festive season, I would like to recap on our activities in the second half of this year. The College Council has been working hard to move our College from strength to strength. The 2nd Singapore International Public Health Conference and 11th Singapore Public Health & Occupational Medicine Conference held on 29 and 30 September 2016 was a major success, and saw more than 500 participants sharing their experiences on public health, occupational medicine, and aviation medicine. I would like to thank the members of the Organizing Committee for their hard work over the year.

Next year will be the 60th anniversary of the Academy of Medicine, Singapore, and there will be a major celebration at the 51st Singapore-Malaysia Congress of Medicine (SMCM). To show our support for the Academy and this event, the 12th Singapore PHOM Conference will be incorporated into the SMCM as one of the major activities. We hope that this will allow more Fellows, both local and overseas, to learn more about public health and occupational medicine, and for us to network beyond our College.

We had also recently conducted a survey to understand your interests and where our College can meet your immediate needs. After listening to you, we organized our annual year-end dinner together with a very interesting CME talk by Dr Wong Chiang Yin. The event was well attended with 40 Fellows and Residents, and we will be organizing more such events in the future. In addition, to seek your guidance as we set the new direction for the College, more surveys will be conducted in the near future, and we hope that you will provide your opinion.

Thank you for your continued support of the College and the College Council, and on behalf of the Council I wish all of you a very Merry Christmas and a Happy New Year.

Yours Sincerely,
A/Prof Vernon Lee
President (2016-2018)

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Hyperbaric Oxygen Therapy (HBOT): An introduction

By Dr Jake Goh

Dr Jake Goh is a medical officer with the Singapore Armed Forces, and is currently heading the Naval Healthcare Branch, where he manages the healthcare policies and medical centres of the Republic of Singapore Navy.

What is Hyperbaric Oxygen Therapy (HBOT)?

HBOT is a clinical intervention where an individual intermittently breathes 100% oxygen delivered under pressure, usually inside a hyperbaric chamber that is pressurized to greater than sea level pressure (1 ATA). The pressure of the 100% oxygen within a hyperbaric chamber must be equal to or exceed 1.4 ATA for clinical efficacy, as indicated by the Undersea and Hyperbaric Medical Society (UHMS). No clinical benefit has been proven at lower pressures and lower oxygen concentrations.

Breathing 100% oxygen at sea level pressure or exposing isolated parts of the body to 100% oxygen does not constitute HBOT.

Medical Indications of Hyperbaric Oxygen Therapy (HBOT)

HBOT is the primary treatment modality for certain medical conditions, while in others, it is used as an adjunct to surgical or pharmacological interventions. The indications for HBOT, accepted by leading Diving and Hyperbaric Medicine societies like UHMS, and adopted internationally by agencies like the FDA and locally by the Republic of Singapore Navy (RSN) are listed in Table 1.



Dr Jake Goh next to a hyperbaric chamber in Defence Research and Development Canada (DRDC), Toronto, during his Advanced Diving Medical Officers' Course.

Table 1 : Internationally accepted medical indications for HBOT

<ul style="list-style-type: none">• Air or Gas embolism• Carbon monoxide poisoning• Clostridial myositis and myonecrosis• Crush injury, compartment syndrome and other acute traumatic ischemia• Decompression sickness• Arterial insufficiencies• Severe anemia	<ul style="list-style-type: none">• Necrotizing soft tissue infections• Osteomyelitis• Delayed radiation injury• Compromised grafts and flaps• Acute thermal burn injury• Idiopathic sudden sensorineural hearing loss
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The evidence supporting HBOT for these conditions have been thoroughly reviewed, and HBOT has been shown to be as efficacious, if not more so, when compared to other types of treatment. However, HBOT has not been proven to be a universal treatment or a cure-all panacea. Contrary to claims touted on the internet, HBOT has not been established to be effective for many health conditions (see Table 2 for conditions that are not indications for HBOT).

Table 2: List of conditions inaccurately claimed (without evidence) on the internet to benefit from HBOT

<ul style="list-style-type: none">• AIDS/HIV• Alzheimer's Disease• Anti-aging, stress relief etc• Asthma• Aesthetic improvements• Brain injury• Cerebral Palsy• Depression	<ul style="list-style-type: none">• Heart disease• Migraine• Multiple Sclerosis• Parkinson's Disease• Spinal cord injury• Sports injury• Stroke
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It is an ongoing concern within the diving and hyperbaric medical communities that patients incorrectly believe that HBOT is safe and effective for their health conditions (e.g. those listed in Table 2). Pursuing HBOT for these conditions may cause them to delay or forgo proven medical therapies, and in doing so, worsen the severity of their existing condition. Moreover, HBOT is not without its side effects as well.

Side Effects of Hyperbaric Oxygen Therapy (HBOT)

Patients receiving HBOT are at risk of suffering oxygen-related side effects, pressure-related injuries, and other complications.

Factors that increase the risk of oxygen-related side effects are the partial pressure of oxygen that the patient is exposed to, the duration of each treatment and the total number of treatments.

Table 3: Some oxygen related side effects	
<ul style="list-style-type: none">• Progressive myopia• Blindness due to optic neuritis• Central nervous system oxygen toxicity	<ul style="list-style-type: none">• Cataract formation• Acute pulmonary edema• Pulmonary oxygen toxicity with reduced pulmonary function

Pressure-related injuries range from mild to serious. Middle ear barotrauma is the most common side effect of HBOT, with an incidence of approximately 2%. Sinus barotrauma occurs less frequently than ear barotrauma. This second most common therapy-related complication usually occurs in patients with Upper Respiratory Tract Infection (URTI) or allergic rhinitis. Other types of barotrauma that may occur include pulmonary barotrauma with or without air embolism. This condition is life threatening and may occur in patients who have airway obstruction, significant air trapping or a history of spontaneous pneumothorax.

Other complications that are possible in HBOT include claustrophobia and anxiety as the hyperbaric chamber is a confined space. Occasionally, patients can also present with hypoglycaemia as exposure to HBOT is known to reduce the blood sugar level.

Medical review before HBOT is therefore important. Patients who are to undergo chamber pressurization should be subjected to an extensive medical review and clinical investigations.

SAFETY

The safety of hyperbaric chamber operations relies on 3 critical elements:

- (1) appropriate pressure vessel engineering;
- (2) appropriate fire safety engineering; and
- (3) appropriate operating practices.

Standards for these 3 critical elements should be aligned to national statutory and regulatory documents governing the use of pressure vessels for human occupancy.

There have been documented cases of catastrophic failure of hyperbaric chambers which resulted in deaths. Many of these cases were the result of failure to abide by pressure vessel building and modification of standards.

The most recent fire incident involving a hyperbaric chamber was on 15 Mar 2016, and took place in an Indonesian hospital which resulted in 4 fatalities. Many of these fires were caused by electrical design problems or a failure to abide by safety regulations. Because hyperbaric chambers are oxygen rich environments, a fire during treatment is a potential hazard with catastrophic consequences. Precautions such as prohibiting smoking, electronic items and any flammable materials within the hyperbaric chamber are required for fire safety, and should be strictly upheld at all times.

Safe operations of a hyperbaric chamber relies on a rigorous system of chamber operator training, emergency drills training and evaluation system and comprehensive chamber maintenance programme, led by experienced and well-trained hyperbaric chamber medical and safety directors. In a review of hyperbaric chamber mishaps, it was found that fatalities in hyperbaric chambers were not limited to fire or pressure vessel failure. Inadequate training, inadequate safety programme and failure to use appropriate decompression procedures were found to be contributing factors to these fatalities.

If you wish to find out more about HBOT...

The Republic of Singapore Navy (RSN) and Singapore General Hospital (SGH) co-organise the annual Singapore Hyperbaric and Underwater Medicine Course (SHUMEC) at SGH. If you are interested in attending the course to know more about HBOT and diving medicine, please contact pgmi.courses@sgh.com.sg for more information on signing up!

Insights & Perspectives

Interview with Dr Lam Sian Lian

Recipient of College of Public Health & Occupational Physicians Achievement Award 2016

Dr Lam Sian Lian

On 29 Sep 16, Dr Lam Sian Lian was awarded the Lifetime Achievement Award by the College of Public Health & Occupational Physicians. Dr Lam Sian Lian is the founding CEO of the Health Promotion Board, and led the statutory board from 2001 to 2005. She has since retired. Dr Wycliffe, one of our preventive medicine residents, spoke to her to find out more about her experiences.



CPHOP, AMS: How did you get into public health as a career?

LSL: When I was doing my medical officer posting, I started off with paediatrics followed by a posting in KK Hospital. They were really good postings for maternal and child health, and got me interested in the health of mothers and children. I decided to go out of the hospital system and into the public health arena. I first went into school health for 6 months and later worked in the Maternal and Child Health Services.

During my paediatrics posting, the plight of the very sick children got me thinking as to how to prevent young children from getting so severely ill. While the work in maternal and child health clinics was mostly clinical, public health principles were put into practice because it involved the health of a special population group consisting of mothers and children. The public health dimension stimulated my interest, and led me to pursue it.

CPHOP, AMS : What are some interesting work experiences during those times?

LSL: After more than 10 years in maternal and child health, I moved to the outpatient clinics. In those days, it was called Community Health Service. While the work was once again very clinical, I was always looking at the preventive and public health dimension to improve the management of chronic diseases in the clinics, and to bring the preventive aspect into clinical care.

An example was the guidelines for management of hypertension. When I became the Director of Community Health Service, doctors in the clinics were treating hypertension without guidelines, and with no basic baseline investigations done. I introduced guidelines so that doctors would be guided as to what they should do when a patient presents with high blood pres-

sure, what investigations to do before commencing the patient on medication.

I was also very involved in the development of the new polyclinics. In those days, we used to work in old buildings, such as the Jurong MCH Clinic, which were often small and very crowded. When parents brought their babies to our clinic, they leave their new and nice flats and enter our clinics which were run in old bungalow buildings often in a poor state. I was, therefore, very happy when the government decided to consolidate the over 40 MCH and OPD clinics into 16 new polyclinics.



Dr Lam Sian Lian receiving the College's 2016 Achievement Award during the 2nd SIPHC and 11th PHOM conference from Guest-of-Honour, Senior Minister of State, Ministry of the Environment and Water Resources & Ministry of Health, Dr Amy Khor.

CPHOP, AMS: What motivated you to be involved in broader areas of work and engage in strategic issues?

LSL: Our training in public health has taught us to always look at the health of population groups rather than focus on the individual. To improve the health of large numbers of people, we always have to think strategically. What are the important health issues? There may be many important health issues. Which one do we need to tackle first? What needs to be done? How can we do it cost effectively? All these issues are very interesting and need strategic planning.

CPHOP, AMS: What brought you through your career?

LSL: I have been very fortunate in being exposed to many different aspects of public health work, such as maternal and child health, the family planning and population programme, epidemiology and disease control and health promotion and health education. After I obtained my public health degree, I was posted to do administrative work, and I became very involved in the administration of the national family planning and population programme. The programme went beyond clinical work to persuading the women to have smaller families. We called it IEC – information, education and communications. There was also evaluation of the programme, and research into best practices, effective methods. The work also entailed projecting the population growth assuming different growth rates which were all very interesting to me.

Later as the areas of responsibility increased, I got more and more involved in health promotion and health education. Then came the formation of the Health Promotion Board (HPB).

CPHOP, AMS: Why was the HPB formed?

LSL: In the 1990s chronic diseases were becoming increasingly important as more people were getting them. Ischaemic heart disease, stroke and cancer were the top causes of death in Singapore. The Ministry realised that more had to be done in prevention of chronic diseases. Among the children, myopia was a big problem.

We needed to embark on a more focused and integrated approach to get the health outcomes that we wanted. The setting up of the Health Promotion Board would provide the framework for a greater focus on these major health problems and spearhead health promotion and prevention programmes and create a supportive environment to tackle these and other health problems. The formation of HPB would also strengthen the capacity and capability to develop, implement, monitor and evaluate these programmes.

It was a good move, and it gave us in HPB a lot more flexibility to implement the programmes at a much faster rate than if we had remained part of the civil service.

CPHOP, AMS: So despite your busy work and heavy responsibilities, you also took time to mentor and teach others. What is your philosophy behind mentoring and teaching?

LSL: I feel that experience counts a lot. Whatever I had learnt through the practice of public health, I felt that it was good to share with my team and the younger generation of public health practitioners.

In public health, it takes years to see results, and we get worried about whether we were doing things right. Just look at the immunization programme. It took many years for us to eliminate one disease (e.g. diphtheria), and the work can get very mundane. You do not see the effect until years later, and people might get disheartened in the interim. It is unlike clinical medicine where you treat patients and they get well almost immediately. I advised my team not to be disheartened if programmes we implemented were not showing results yet.



From left to right: Dr S R E Sayampanathan (Master of Academy of Medicine), Singapore, Dr Amy Khor, Dr Lam Sian Lian, A/Prof Chew Ling (Citation reader of 2016 Achievement Award) and A/Prof Vernon Lee.

CPHOP, AMS: So mentoring is not just about teaching but also encouraging.

LSL: I also try to encourage young doctors who have the potential to do the public health course and take it up as a career. That is important because public health is like the Cinderella of the medical professions – few doctors want to specialise in it. I think there is more interest in it now and it is getting a higher profile.

CPHOP, AMS: How did you manage work and life outside of work?

LSL: I was very busy. I must add that public health work does not end when you leave your office. All the time you have got to be thinking about public health, and the issues go with you wherever you are. I know I should not really mix work with home, but very often I end up doing work at home. I was fortunate I had very good home support. My parents and in-laws helped with the children. But one day, I forgot to fetch my daughter home from school because of work as I was so involved in whatever work I was doing! Fortunately, that's very rare.



Members of the College Council, Dr S R E Sayampanathan and Dr Lam Sian Lian.

CPHOP, AMS: What do you think makes a good leader?

LSL: I think you should be visionary and think ahead of your time and think long-term. Instead of just doing things at present, you have to think of the future as well. You have got to anticipate and be prepared for it. Then, you have to engage people - your staff, other people whom you work with, people in other sectors, and the community. Respect other people for what they have to contribute, for what they have to suggest and for what they have to say about any topic that is current.

CPHOP, AMS: What is the greatest challenge in health promotion in Singapore?

LSL: The greatest challenge is to engage the community because they are the ones who will benefit from our health promotion programmes, yet may not see the necessity of being engaged and taking responsibility for their own health. Beyond public education, personal contact with them is important. Our work needs us to go into the community to engage with the people.

Public health is a multi-disciplinary field and we need to take a multi-sectoral approach, because we cannot do everything ourselves. We need to work with other sectors. Take for example, the SARS outbreak. It was truly public health in action, with all the public health principles, such as epidemiology, health education, personal hygiene, isolation, quarantine, being applied to control the SARS outbreak.

Health promotion also requires us to take a multi-sectoral approach. We need to develop skills to engage and work with other sectors to achieve the health outcomes we want.

Strengthening partnerships with fellow Colleges in the Asia-Pacific Region

By Dr Clive Tan

Dr Clive Tan was awarded a travel grant from the College to attend the conference, and engage with our counterparts from New Zealand. For more information on the CPHOP Travel Grant, please go to <http://ams.edu.sg/colleges/cphop/travel-assistance>.

I had the opportunity to speak at the 4th World Congress of Integrated Care in Wellington, New Zealand in November this year. Together with Jason, our College's Vice-President, we took the opportunity to meet up with our college counterparts from New Zealand.

We got in touch with the [New Zealand College of Public Health Medicine](#), and met up with their General Manager, Ms Jane Dancer. Like our College, the New Zealand College provides public health training to doctors in training and is responsible for

the professional development of its Fellows. They have recently completed a curriculum review and re-designed the competency framework, reducing the number of competencies from 160 to 7 key domains. Another interesting development was that they reduced the number of rotations in favour of having longer duration for each rotation, citing better continuity for both doctors and employers. In addition, the College is actively involved in advocacy, through regular comments and reports on priority public health issues.

The New Zealand College of Public Health Medicine organizes a yearly conference, and once every four yearly, the conference is co-organized with the [Public Health Association of New Zealand](#) and the [Health Promotion Forum of New Zealand](#). Because the College's membership is restricted to medical doctors, the College has found it useful to work closely with the Public Health Association and the Health Promotion Forum to reach out to a wider group of public health practitioners.



Dr Jason Yap and Dr Clive Tan, with Ms Jane Dancer from the New Zealand College of Public Health Medicine.

Jason and I also had the opportunity to meet up with the President of the Public Health Association of New Zealand, Ms Louise Delany, who has a legal background and was previously from the Ministry of Health. Ms Delany is now a faculty member at University of Otago's Department of Public Health. She shared with us that of the over 300 members of the Public Health Association, many were community health workers. Unlike the College, training is not a key role of the Association. Their focus is more on advocacy, and they regularly publish position papers on key public health issues. In 2016, they wrote on topics such as tobacco use, alcohol use, the public health effects of trade agreements and health effects of poor quality housing.

Ms Delany shared that the Public Health Association of New Zealand is a member of the World Federation of Public Health Associations, and extended an invitation for our College to participate in next year's 15th World Congress on Public Health, which will be held in Melbourne, Australia in April. She ended by emphasizing that public health is indeed a far-reaching field, and the Association's effectiveness is enhanced by the strong partnerships with the New Zealand College of Public Health Medicine and other Public Health Associations across the world, through the World Federation of Public Health Associations.



Dr Jason Yap and Dr Clive Tan, with Ms Louise Delany, President of the Public Health Association of New Zealand.

2nd SIPHC & 11th PHOM Conference

29th-30th September 2016



Fellows' Lunch 29th September 2016



The College organized a Fellows' Lunch during the first day of the 2nd Singapore International Public Health Conference and 11th Singapore Public Health and Occupational Medicine Conference 2016 at the Pelican Room, Grand Copthorne Waterfront Hotel. About 40 Fellows gathered together to socialize, network, and catch up with friends.

Year-End Get-Together 1st December 2016



Fellows and Residents attended the Year-End Get-Together held on 1st December 2016 at The Blue Ginger Restaurant. We were honoured to have Dr Wong Chiang Yin give the CME talk, on the topic "A Public Health Physician's Take On The HITF Report".

51st SMCM & 12th PHOM Conference



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51st SINGAPORE-MALAYSIA CONGRESS OF MEDICINE 12TH SINGAPORE PUBLIC HEALTH & OCCUPATIONAL MEDICINE CONFERENCE

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More details on the conference will be provided at a later date!



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