

SARS

Special Issue



March 22

DISCOVERY OF AN EMERGING SARS AGENT: THE VIRUS AND THE DIAGNOSTIC TEST

HKU microbiologists, under the leadership of Professor Malik Peiris (裴偉士), Chief of Virology and Professor Yuen Kwok-yung (袁國勇), Head of Department of Microbiology, have successfully identified and cultured the killer virus responsible for the outbreak of SARS. The team has also developed an antibody test for the detection of SARS in infected patients.



April 10 - 12

MEDICAL AND NURSING STUDENTS HELP IN FIGHT AGAINST SARS

More than 200 medical and nursing students from the Medical Faculty kick off an intensive three-day public education campaign across Hong Kong. The students spend 12-hour days in a variety of MTR stations in a bid to boost public health and confidence in dealing with SARS.



March 27

CORONAVIRUS PNEUMONIA: AN INTERNATIONAL BREAKTHROUGH

The World Health Organization hails the Department of Microbiology team after they have confirmed the mysterious pneumonia is caused by a coronavirus. This world first crucial breakthrough is complemented by the development of a new diagnostic test (RT PCR test) for SARS by the team.



April 4 & 29

PUBLIC PERCEPTION AND PREVENTIVE MEASURES OF HONG KONG CITIZENS CONCERNING SARS

A survey conducted by the Department of Community Medicine team in early April reveals the anxiety level and knowledge of Hong Kong citizens in dealing with SARS. A follow up survey conducted in mid-April points out SARS epidemic has increased solidarity amongst Hong Kong people in general but solidarity within neighbourhoods is still weak. The two surveys act as a rallying call to increase public education about the killer virus in order to help the public to break the cycle of ignorance and fear.



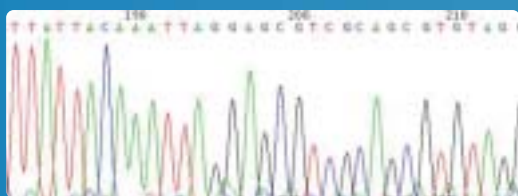
SARS TIMELINE

A CRITICAL PATH

April 16

HKU SUCCESSFULLY COMPLETES THE DNA SEQUENCING OF SARS CORONAVIRUS

Researchers from the Faculty of Medicine and Science have worked together to complete the genetic sequencing of SARS coronavirus, following Canadian researchers and US Centers for Disease Control and Prevention.



April 19

CORONAVIRUS: THE CAUSATIVE AGENT OF SARS

The microbiology team comprehensively proves that the coronavirus is behind SARS and its pioneering work is published in the leading international medical journal, The Lancet, on April 19.



April 27

JOINT SYMPOSIUM ON ATYPICAL PNEUMONIA

Chinese Center for Disease Control and Prevention and Faculty of Medicine jointly organize a regional symposium and invite experts from across Mainland, Taipei and Hong Kong to share their experience on SARS. Discussion topics include epidemiology; clinical management; virology and pathogenesis and infection control of SARS.

April 26

MEDICAL EXPERTS MEET IN HONG KONG TO FIGHT AGAINST SARS

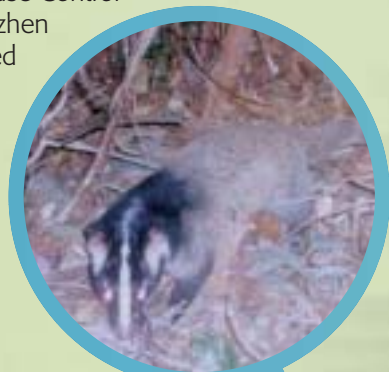
Chinese Center for Disease Control and Prevention and Faculty of Medicine invite medical experts from Mainland, Taipei and Hong Kong to meet at an expert discussion meeting with the aim to exchange information on SARS and to establish collaborations within the Region to fight against the deadly disease.



May 23

EXPERTS FROM MAINLAND AND HKU SUCCESSFULLY ISOLATE SARS CORONAVIRUS FROM CIVET CATS

Researchers from the Department of Microbiology and the Center for Disease Control and Prevention of Shenzhen have successfully isolated the coronavirus causing SARS from the civet cats. This is another important milestone for the control of SARS.



May 28

COLLABORATION ON THE DEVELOPMENT OF INACTIVATED CORONAVIRUS PREPARATION WITH MAINLAND RESEARCHERS

Researchers from Guangzhou Medical College, Fudan University and the Department of Microbiology, HKU have collaborated on the research of an inactivated coronavirus preparation used for intranasal immunoprophylaxis with the objective to abort the invasion of live coronavirus into nasal mucosa.



May 11

HKU TO STUDY ANTIVIRAL AGENTS ON STOPPING ENTRY OF CORONAVIRUS

Dr Richard Kao (高一村) and Dr Leo Poon Lit-man (潘烈文) from the Department of Microbiology, HKU have set up the antiviral peptide neutralisation assay for the confirmation of the effectiveness of these compounds in blocking the entry of the coronavirus into the cells. The world famous AIDS expert Dr David Ho (何大一) announces he is teaming up with University of Hong Kong scientists to develop a synthetic drug that will block the SARS virus from penetrating into the human cell.



April 27

SIGNING OF MOU BETWEEN CHINESE CENTER FOR DISEASE CONTROL AND PREVENTION AND FACULTY OF MEDICINE

Chinese Center for Disease Control and Prevention and Faculty of Medicine sign a Memorandum of Understanding to establish collaboration to fight against SARS. The two institutions will pool together resources on SARS research.





Vice-Chancellor's Message

►► **Hong** Kong was unprepared when Severe Acute Respiratory Syndrome (SARS) came upon us as a sudden attack which brought panic and pain.

Our colleagues in the Department of Microbiology were better prepared, however. As professionals, they have been living with viruses and infectious agents all the time. They provided the world with the crucial scientific information about the SARS agent – a new strain of coronavirus – in an unprecedented pace.

Our clinical colleagues and health care workers have been exemplary in the SARS battle, with truly unusual courage, prepared to face failures and casualties. We should all salute to their professionalism and their dedication to the welfare of the whole Hong Kong. Other colleagues also joined the fight: engineers, architects, social workers, psychologists, ... even statisticians, contributing their professional knowledge and services to the community. Our students too have taken on a leadership role in the many community projects that were being organized. It has indeed been a time for every citizen in Hong Kong to demonstrate unity, determination and commitment through participation and contribution. There are many unsung heroes.

The Faculty of Medicine has been a forerunner in undertaking ground-breaking research into the cause of this new disease. Our medical colleagues have, in collaboration with other disease control institutions, worked day and night to try to unveil the secret code of the deadly virus. This small compilation we have here is but a record of what has happened among our medical colleagues, who have been at the forefront of the battle. They represent the spirit of perseverance and commitment, which are also widespread among many other institutions, laboratories and hospitals. Such a spirit has been what shaped Hong Kong, but is now revitalised and should lead Hong Kong into the future.

Let us pay tribute to all those who have been battling with a deadly disease, and have saved many lives in Hong Kong and around the world. ◀

A handwritten signature in blue ink, which appears to read 'Lap-Chee Tsui'. The signature is fluid and cursive, written in a professional style.

Professor Lap-Chee Tsui
Vice-Chancellor
The University of Hong Kong

Dean's Message

►► **The** devastating nature of Severe Acute Respiratory Syndrome (SARS) and the unprecedented speed of its spread have deranged the equilibrium of the world. However, we are fortunate in that the progress of research on SARS also proceeds at an unparalleled pace.

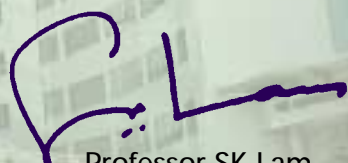
We now know SARS first emerged in the province of Guangdong in Southern China. The majority of SARS cases worldwide can be traced to one single person. A professor who had been involved in treating SARS patients in Guangzhou, the capital of Guangdong, traveled to Hong Kong to attend a wedding. Several people in the hotel where he stayed and a few others in close contact with him were infected. They all became the index cases in Singapore, Hanoi, Toronto, and Hong Kong. It was in Hanoi that Dr Carlo Urbani, the WHO scientist, investigated a patient with atypical pneumonia. He recognized the severity of the disease and alerted WHO of the existence of a severe form of acute atypical pneumonia that is now known as SARS.

Research on SARS progresses as rapidly as SARS strikes havoc in hospitals and our health care system. Information on SARS distributes with amazing speed via the internet and other electronic means. Telecommunication has aided research efforts and cooperation as information is exchanged by the WHO network laboratories by regular video and teleconferences. In an unprecedented pace, researchers identified a novel coronavirus. This new virus has now been accepted by WHO as the causative agent for SARS being able to fulfill all Koch's postulates. Equally amazing is the speed at which the RNA sequence of the coronavirus is completed. Furthermore, what used to be months from paper submission to the time of publication has changed. The first description of the clinical features of SARS was provided by 2 online publications in the New England Journal of Medicine on March 31, 2003. Coronavirus as a possible causative agent for SARS was published online in The Lancet on April 8, 2003. Two papers reporting the full sequence of the coronavirus were published online in Science on May 1, 2003. The list keeps growing at an incredible speed.

At this moment, we are still at an early stage in terms of therapy for SARS. Clearly we need more than ribavirin and steroids. Efforts are underway to look for better and more effective therapies ranging from new immunosuppressive agents, to specific peptides that inhibit the entry of the virus to host cells, as well as for vaccines that will ultimately prevent the disease.

In effectively combating SARS and other infectious diseases, joint efforts from scientists and medical experts from the Region is vital. In view of this, the Medical Faculty has signed an agreement with the Chinese Center for Disease Control and Prevention, with the aim to enhance collaboration on SARS research and infection control; and indeed the successful tracking of the source of the coronavirus to the civet cats is a fruitful result of such collaboration.

Finally, I wish to take this opportunity to salute all the health care workers who work tirelessly and selflessly to look after SARS patients. I also wish to thank all the scientists burning the midnight oil to unfold the mystery of SARS, from the isolation and identification of the coronavirus to its gene sequencing, in record time. Let us all work together and rid this virus from the face of the earth. ◀



Professor SK Lam
Faculty of Medicine
The University of Hong Kong



中國CDC病毒病所 與香港大學醫學院 工作展望

2003年4月26-27日在香港舉行的“兩岸三地”預防控制SARS討論會期間，香港大學醫學院與中國CDC病毒病預防控制所簽署了通過對SARS病人樣品檢測進行SARS病原學研究的合作協議書。這是中國CDC病毒病所與香港有關機構簽署的第一份合作協議書，標誌著兩家聯手抗擊SARS的研究正式開始。

此前港大醫學院已與病毒病所交換過SARS病人血清樣品，開始了合作研究。在今年2月中旬SARS爆發的早期，病毒病所與港大進行了病原的合作研究，並成功排除SARS可能是由禽流感病毒所引致。合作協議簽署後，港大醫學院還向病毒病所提供了他們分離的SARS毒株，為進一步開展病原學和致病機理的研究創造了很好的條件。

目前內陸許多研究機構已與香港相應機構建立了良好的合作關係。最近，兩地聯手在野生動物中發現了人類SARS冠狀病毒的前體病毒，這對預防和控制SARS具有重要戰略意義。我深信，港大醫學院與中國CDC病毒病所簽署的正式合作協議書，將會大大促進京港兩地SARS的相關研究，例如：病原學、流行病學、發病機理、診斷試劑、疫苗和藥物等，並取得重要成果。兩地聯手，將為預防控制，甚至根除SARS做出我們的貢獻。



中國CDC病毒病預防控制所

阮力 所長

SARS DETECTIVE STORY

Microbiology Team

▶▶ **I**f toll of the SARS outbreak is etched into Professor Yuen Kwok-yung (袁國勇)'s face then so is the determination to carry the fight to the virus until victory is assured.

As Head of the Department of Microbiology, Yuen and his chief of Virology, Professor Malik Peiris (裴偉士) have been instrumental in leading his team in hunting down the virus, devising diagnostic tests and so helping mold frontline treatment.

But the professor is quick to acknowledge the personal cost.

Yuen says: "This has been the hardest test for me professionally and personally. I have lost 5 kilos, don't have enough sleep and been under great pressure.

"Finding a diagnosis for SARS and helping devise the treatment has been so important to Hong Kong with over 1800 infections and more than 200 deaths.

"There has been a big burden on our shoulders and a real sense of urgency."

Despite his evident exhaustion, Yuen then jumps up - to the whiteboard and begins to sketch out the role of his core team in helping tackle a global epidemic.

As early as February when the rumours of a mysterious outbreak in Guangdong first emerged, the team dispatched two of its members to the Mainland.

Yuen recalls: "We sent Drs Guan Yi (管軼) and Zheng Bojian (鄭伯健) and they tried to isolate the virus but at that time we were so focused on H5N1 (Avian Flu) that we did not get anything."

By the end of February, however, the first index case emerged in Hong Kong and Yuen was invited to Kwong Wah Hospital to witness at first hand the human cost.

Yuen recalls: "I found it was a horrible disease because the index patient was a strong man who came down with severe respiratory failure. But the turning point was the discovery of the coronavirus." This happened after a lung biopsy - the removal of lung tissue - from a subsequent SARS patient which gave them the first chance to grow the virus in isolation.

Yuen says: "We were smarter this time and realised we needed more cell lines to increase the chances of growing the virus because originally it did not grow.

"Dr Chan Kwok-hung (陳國雄) was very smart because he used a very unusual cell type to grow the virus and this worked because it was more susceptible to infection."

At this point it was the turn of Professor Malik Peiris who characterised the virus, and Dr John Nicholls (黎國思) who ascertained the pathology of SARS.

Colleague Dr Leo Poon Lit-man (潘烈文) then took centre stage with his "gene fishing exercise" which enabled the team to isolate a fragment of the SARS gene.

For the first time they realised they were dealing with a completely new type of gene.

Yuen says: "The discovery is not down to one person but

is a team effort. Drs Guan and Zheng risked their lives by going to Guangzhou and realised it was not H5N1 we were dealing with. After that, it was the turn of the rest of the team."

The price has been long hours - with team members racking up 16-hour days.

Motivation, however, is not an issue when life and death are at stake.

Yuen says: "It is the patients that keep me going because to see them dying before your eyes is horrible. You feel that you can't let them die."

As the outbreak begins to recede, the temptation to bask in the glow of success is not one that Yuen is likely to succumb to: there are too many lessons to be absorbed.

The departmental head believes that SARS has vital lessons for the University of Hong Kong and ones that help shed light both on the past and the future.

He says: "The strength of HKU is history. When I became departmental chair in 1999, I saw the long history stretch out before me.

"The foundation chair CT Huang in 1976 identified a bacteria as responsible for the deaths of dolphins at Ocean Park but no one would believe him until the Pasteur Institute in France confirmed his diagnosis.

"This was the start of the direction towards emerging infectious diseases that I stressed we must concentrate on when I became chair.

"We must concentrate on our strengths - emerging infectious diseases - because we are the best safeguard for Hong Kong and the world.

"The problem is we don't have the money!"

*Professor Yuen Kwok-yung,
Head of Department of
Microbiology, HKU*



CLINICIANS AT SARS BATTLEFIELD

SARS Team at Queen Mary Hospital

►► **When** Stephanie, James and Jonathan Tsang hear their father opening the front door, they don't run to greet him but dutifully take their position outside the shower room.

This may seem odd until you realise that their father is the Associate Professor of Respiratory Medicine Dr Kenneth Tsang Wah-tak (曾華德) with a frontline role in the fight against SARS.

Tsang says: "Family life has become very difficult and I spend much less time with my kids and wife and have to be meticulous about my physical health.

"I constantly take showers after every (hospital) round, have a good scrub, wash my hair and then when I go home I do the same all over again.

"My wife Janette and kids miss me so much and they realise that they must stand outside the shower room when I come back from the hospital."

This 8 pm routine draws the curtains down on Tsang's professional day - exactly 12 hours after his working day begins.

This probably represents a shorter day that many other HKU specialists involved in the fight against SARS but then few face the intensity of life and death decisions.

Tsang, however, comes face-to-face with these from the moment he walks into his office.

Joined by fellow consultant Wong Poon-chuen (黃泮銓), Tsang begins the clinical day by making his rounds of the hospital wards that fall under their jurisdiction.

Tsang says: "It is both stressful and difficult for each case because if we make the wrong diagnosis and give them the wrong treatment, we might hurt them.

"The morning round could last 3-4 hours and during this time you are wearing an N95 mask, you are fully gowned and standing up the whole time.

"You feel physically exhausted and you then realise that you have to do it all over again in the evening."

At the peak of the outbreak, Tsang and his SARS team at Queen Mary Hospital were faced with five wards and so far they have admitted 450 suspected SARS patients, with 52 eventually being confirmed.

But the problems do not end there.

Tsang says: "This is without a rapid diagnostic test that is universally accepted and a lot of the time the results are not clear-cut.

"This means we have to go on clinical definition but we don't know that much about the disease so it is very difficult."

Each year, for instance, Hong Kong has 22,000 pneumonia cases with 3,000 fatalities that do not respond to conventional anti-biotic treatment.

This is also a characteristic of SARS. The question is where do doctors draw the line between the two?

This means that Tsang and Wong can take nothing for granted, including the diagnoses of their junior doctors and nurses. Everything has to be checked and checked again.

All these have to be completed before a late lunch at 2:30 pm.

Another key part of their daily schedule is to keep doctors up-to-date on infection control during exhaustive and exhausting three-hour training sessions with Dr Szeto Wing-hong (司徒永康), Chairman of Infection Control of Queen Mary Hospital.

During the afternoon, Tsang will attend to administrative duties before starting the evening rounds in the late afternoon.

Tsang says: "It has been the greatest test for everyone - even my boss Professor Lam Wah-kit (林華杰) admits that this has been the most challenging condition in medicine.


"People have been overwhelmed because if you get it, you could die and you will give it to your family.

"You become emotionally attached to your patients which is unusual for consultants.

"The other problem is how do you keep up morale? I must say that our SARS team has been extremely good because we have tried our very best to keep the cross infection rate to minimum.

"So much so that staff want to stay on the SARS ward after their three-week duty come to an end.

I think we can all feel proud of what we have achieved so far." ◀



*Dr Kenneth Tsang Wah-tak,
Physician-in-charge of SARS wards
in Queen Mary Hospital*

A RACE AGAINST TIME CRACKING THE GENETIC CODE OF SARS CORONAVIRUS

Genetic Sequencing Team

►► **If** Dr Frederick Leung (梁志清) is proud of being the first in the world to successfully sequence the coronavirus genome, he is equally pleased that he could still bath his infant daughter.

Despite putting in 20-hour days to help unlock the secrets of the coronavirus across ten anxiety filled days, the zoologist was determined that his family should not suffer.

The father-of-six laughs: "I am really proud of the fact that I still managed to get home each evening for dinner and to bath my daughter.

"I am lucky that I live so close to the university."

At their laboratories in the Kadoorie Biological Sciences Building, the 11-strong team, including students, had to make do with little sleep as they battled to be the first.

Leung, who is also the Dean of the Faculty of Science, recognizes that this was one of the biggest moments of his professional career, which has spanned more than 30 years.

The race began at 5 pm on April 7 after Leung had assembled his students and would only end when they uploaded the sequence onto the worldwide web at 11:40 pm on April 16.

He recalls: "I told them that we were starting behind the US and Canadian teams, it would probably take us ten days and there was a good chance we could come third. I said to them 'Would you be interested?' and all the students put their hands up. That's how we started."

Because they were dealing with an unknown quantity, the team was initially struggling to pin the virus down and Leung compares its complexity to "landing on the moon".

Nevertheless, land they did and with increasing speed mapped out the sequence.

Leung's pessimism, however, appeared vindicated when their rivals uploaded sequences onto the National Center for Biotechnology Information website first.

Inevitably, the bouquets, plaudits and kudos went across the Pacific but five days after Leung's team had uploaded their sequence, their rival's flaws began to emerge.

Leung says: "They had to issue corrections and filled in the deficient sequences on later days whereas we were right from the start. It is disappointing because I do believe we deserve the recognition of being first.

"This is critical in science, not least because we had the most accurate reporting yet Science (magazine) took our rival's paper because they said they were first."

What makes the HKU effort all the more admirable was that they were up against teams that could call upon far greater resources, as well having had a head start.

Leung says: "There were ten of us whereas the Canadian group would have had 50-60 people and the US team have over 300 working for them.



Dr Frederick Leung and his team of scientists

"We also had just one large and one small sequencing machine compared to our rivals and this shows that machines are not the key.

"I told my students that 'Working hard, working smart' was the key to success."

PhD student Raymond Hui Kin-hi says: "We have learnt so much from this. I can't believe we could sequence the genome with such speed.

"To be also involved in the development of a new diagnostic kit is completely new technology for me. I feel tired but at the end of the day very happy."

Reflecting on their success, Dr Zeng Fan-ya, who helped lead the team, believes that the Hong Kong team deserves to be rated alongside the best.

On secondment from Sichuan University, Dr Zeng says: "This has been the most hardest, most demanding time of my career.

"We now know what SARS is and this shows how powerful biotechnology is because 10-20 years ago we could not have done this.

"I have worked with many different teams in many different places and I am very proud of this team. It is a very good team and works well together."

The team also used the crisis to develop new diagnostic tests that will greatly speed up the process of analysis and increase their accuracy.

One of these bright ideas now has a patent application pending.

That such creativity should stem from such circumstances comes as no surprise to Leung.

He says: "Of course the pressure was intense but that's where the road to discovery leads. It is always competitive.

"You don't get that many chances like this in life. Although SARS did kill many people, our accomplishments will help mankind and that's the pay off on all the pain.

"I just hope that Hong Kong will realise our potential now. We need your support" ◀

The full team list:
Dr FY Zeng; Carol, WM Chan; Charis, MN Chan; Dr J Chen; Ken, YC Chow;
Chung C Hon; Raymond, KH Hui; J Li; Vince, YY Li; Crystal, Y Wang;
Patrick, Y Wang



*(From left) Dr GM Leung,
Professor AJ Hedley and
Professor TH Lam*

HITTING SARS

Community Medicine Team

► **For** Professor Anthony Johnson Hedley (賀達理) and Professor Lam Tai-hing (林大慶), Head of Department of Community Medicine, the University of Hong Kong, the impact of SARS hit them with a sharp jolt when one of their own colleagues was suspected to be infected with SARS.

For the wider public, this alarm would perhaps mean little because the department's work centres on public health, epidemiology and statistics, and analysing the numbers behind the unfolding epidemic.

Hedley says: "Information is vital to combat an epidemic, but without investment in that area, you will never be able to have effective instruments for control of the epidemic."

Research of the department has centred on three areas:

1. Analysing the effects of public health interventions on epidemiological parameters (such as the time from onset of symptoms to hospital admission).
2. The effect of changes in the parameters on the transmission of the disease.
3. The factors that have influenced case fatality.

But before they could even begin to contemplate this, the team had to start the laborious process of setting up a comprehensive database with the information to fuel it.

"But there are always problems capturing valid, accurate, reliable and timely data on health events and the SARS epidemic was no exception."

Hedley freely admits that this sometimes involved a lot of difficult interfaces in accessing information from diverse institutions and bodies, which do not always have the same agenda.

Two of the departmental researches have been published in leading international medical journals, one of these in *The Lancet* and the other in *Science*.

Hedley says: "What the evidence shows is that without the (public health) interventions which were implemented by mid-March, and also self-imposed restrictions on movement by the public, we could have had a roaring epidemic of 200-300 infections a day.

"The information we compiled was also presented by Dr Margaret Chan, Hong Kong's Health Director, at a WHO meeting."

Although the team is reluctant to take plaudits, they believe they have stood the test of time and SARS well.

Hedley says: "If we are going to work in the field of communicable disease epidemiology, we have still got a lot to do but there are many threats out there.

"Avian and human flu, dengue fever, resurgence of tuberculosis and now SARS have meant a recognition that we are entering a new era of emerging communicable disease."

For Lam, the work carries on.

He says: "We have been doing repeated population surveys and they show that if your anxiety level is too high or too low, your preventive measures will have a poor effect.

"This shows that we need to have carefully crafted public health messages in order to have a well informed public and this means we must not spread panic nor reassure people unnecessarily.

"It also shows that statistical analysis is an important key to understanding how best to combat epidemics." ◀

NURSES AT THE FOREFRONT OF SARS

Nursing Team

► **While** nurses have paid with their lives in the frontline of the war against SARS, they have been supported by a secret army of nursing students and academic nursing staff.

Dr Sophia, Chan Siu-chee (陳肇始), Head of Department of Nursing Studies of the University of Hong Kong, believes that the frontline sacrifices have only helped inspire her colleagues.

But she also believes that this 21st century crisis has only helped to reaffirm the standards set by Florence Nightingale – the 19th century mother of modern nursing.

Chan says: "My feeling is we are with the patients 24 hours a day and are in close contact with them, so it's impossible to be totally risk free.

"Although we have to be vigilant, as nursing professionals, however, we have a mission and SARS has conveyed the truth of the Florence Nightingale pledge to nurses of the 21st century."

This devotion to the welfare of patients and the wider community has seen Chan and her colleagues undertake a mass public education campaign and vital research.

Initially this was restricted to basic instruction in hygiene for the public and how to use masks but now has developed in three key directions.

First, the department has led the way in examining the role of nurses in combating SARS so as to improve the preventive measures and reduce health care worker infections.

Secondly, one of the research teams has been developing a "protocol" or nursing care model for the virus, which has taken Hong Kong to the very edge of medical science and treatment.

Finally, there has been the public health education campaign, which has also developed in a number of different directions.

Chan says: "We felt it was very important to educate different groups in the community about SARS: personal hygiene and preventive measures.

"It has been very, very demanding doing all these research in different directions without extra resources. We have had to work harder and sleep less."

For nursing students, postgraduate researchers and teachers, the normal timetables have had to be set aside in the wake of SARS but they have had other things to focus on.

One of these has been a campaign by nursing and medical students set in MTR stations and designed to access and inform the public.

More recently, students have been involved in a health education programme conducted through the telephone and targeting at the elderly.

This has focused on assessing their state of health and preventive measures, and giving advice based on their responses.

Another project has involved nursing teachers and students visiting primary schools to educate pupils and staff about how to avoid SARS.

If all these sound removed from the frontline, then Chan and her colleagues have had a sharp reminder of the very real dangers they face day-to-day.

She says: "One of the nursing officers who was assessing the physical and psychological needs of SARS patients as part of one of our research teams had just contracted SARS. The dangers are very real."

Another research team has also been compiling a survey of 1,500 nurses in Hong Kong.

It looks at the health – physical and mental – of nurses, as well as their knowledge and beliefs of SARS, alongside assessing what preventive measures they take at home and work.

Chan says: "Even if I am not at the forefront caring for SARS patients, we have done the research to benefit the public and profession.

"I feel privileged in that respect." ◀

Dr Sophia Chan (middle) and her nursing team





*Professor Mary Ip (葉秀文),
Associate Dean (Education &
Student Affairs)*

THE IMPACT OF SARS ON MEDICAL EDUCATION

Education Team

► In mid-March, news of a hospital outbreak of "atypical pneumonia" in Hong Kong came out. At that time, although our teaching hospital, Queen Mary Hospital (QMH), was not afflicted in a major way, we felt that it was imperative to prepare our students adequately for any possibility of contact with SARS patients in the course of their learning, and to minimize human traffic in the hospital so as to facilitate infection control. Based on these considerations, the Faculty decided to suspend clinical classes for medical, nursing and Chinese Medicine students as from March 18. We were fortunate that the final year examination for the MBBS and BNursing courses could be completed without delay, and the students who were most affected were Years 3-5 MBBS students whose programmes involved a lot of patient contact. Two weeks later, non-patient contact teaching was also suspended in line with all tertiary institutions in Hong Kong. Understandably, students were anxious about the loss of learning opportunities, as well as the threat of SARS. To alleviate their anxiety, the Faculty conducted talks on SARS, and subsequently posted update information and the QMH SARS daily letter onto the student web, as fear for this new disease can only be allayed and turned into a positive force if we are well informed. During the period of suspension of classes, we delivered lectures through the web, and even attempted to conduct PBL discussion in the chat-room style. While we encouraged our students to make use of the time to study and revise, we also organized the "Fight Against Atypical Pneumonia" campaign in which our students reached out to the community serving as ambassadors for educating the public on SARS at many MTR stations.

With the gradual control of SARS in the hospitals and community, both students and teachers were keen to resume patient-contact sessions, as this could hardly be replaced

adequately by other modes of learning/teaching. We also firmly believe that students have to be trained to face SARS and other new diseases in their future profession. Resumption of clinical teaching requires meticulous planning to allow maximum opportunities for learning, and minimum disturbance to SARS control in the hospitals. The safety of both our students and our patients are of top priority in the exercise. We are very grateful to have received the full support of the hospital administration as well as medical and nursing staff of QMH, and also of some units in other public and private hospitals and clinics. Our honorary teachers were most supportive. An appeal for donation for purchase of personal protective apparels for students was sent to alumni and teachers and the feedback was very encouraging. The QMH infection control team conducted a series of workshops for the students, our nurses acted as vigilant monitors, while teachers met students both at formal feedback sessions and over informal gatherings to address their concerns and problems. Clinical classes have been resumed since May 5, and we are glad to report that the Faculty hotline, established to deal with emergency situations arising therein, has not received any call.

SARS has posed an unprecedented crisis to the healthcare system, and indeed the whole community, of Hong Kong. In the face of this turmoil, we are called upon to once again reflect on our Faculty's mission of nurturing doctors for the practice of the art and science of medicine and health, and what better way to fulfill this mission than through serving as role-models in selfless commitment to patient care and scientific research? It is also the time when students, burning the midnight oil studying, are called to remember the noble aspirations many of them have declared when they struggled through the entrance gate of the medical school. ◀

by Professor Mary Ip



SARS CHALLENGE TO STUDENTS

►► **For** nursing student Zoe, Chong Wing-sze (莊穎詩), confronting the SARS crisis brought her face-to-face with the bitter childhood memories of her grandmother dying of lung cancer.

That sense of impotence, frustration and lack of knowledge not only has driven her desire to become a nurse, but also to help Hong Kong people in their hour of need.

This was the motivating factor in joining 200 other nursing and medical students in April to launch a mass public health information campaign about SARS on the MTR.

The first-year student said: "At that time, I did not know how I could help because I am only a student and can't help in the hospital. Therefore, I thought about how I could contribute to the community.

"The MTR campaign gave me the chance to do something, to help educate the public and help in a crisis."

Terence, Tong Yee-hong (湯爾康), a second year medical

student, admitted that he could not put his finger on who developed the idea, preferring to see it as spirit of the moment.

However, from its inception to launch, it took exactly seven days of liaising among the Medical Society, senior Faculty of Medicine members and MTR officials.

The campaign was enthusiastically supported by over 300 students. However, due to a shortage of space, only 200 students have finally taken part in the actual campaign.

Beginning in the afternoon of April 10, the 200 students were spread in teams across six MTR stations covering Hong Kong Island and Kowloon.

During the second and third days, the students put in 12-hour days as they handed out information about the killer virus and demonstrated basic health and hygienic techniques.

Terence said: "What impressed me was that final year medical students were even prepared to join in and help despite all the pressures they were facing.

"I think that shows the spirit of the University of Hong Kong students and their sense of responsibility to the wider community."

Terence, 20, said this sense of obligation to his fellow man was one of the crucial reasons why he had been motivated to pursue a career as a doctor.

He said: "I looked through all the professions but felt that most dealt with things that were not of benefit to anyone: dealing with bureaucracy, politics and procedure. I wanted to choose something that I could work in with a clear conscience, with other people and to their benefit. I thought that a doctor could meet all these criteria."

Despite the terrible toll that SARS has taken on health care professionals, both Terence and Zoe remain steadfast in their determination to pursue their chosen careers.

They both believe that they and the wider community have learnt some valuable lessons from what has been a traumatic experience.

Terence said: "I am only 20 years old, so, although there have been other epidemics over the last 100 years, this is a new experience to me.

"It is unfortunate, of course, but outbreaks of this kind are really not that uncommon in history. The difference is that it is uncommon for Hong Kong and this generation."

The North Point student has come to realise that holistic care - dealing with both the physical and psychological care of patients - is more than just a theory in the face of SARS.

He said: "What this teaches us is that the standard of medical care, improvements and research make the difference between life and death.

"This is the real challenge for medical professionals."

For Zoe, it is also just the beginning. "I am disappointed at the number of people who've got infected because of a basic lack of SARS knowledge and protective equipment.

"We have to be prepared for the next time." ◀



Terence
Tong

Zoe Chong



Dr Lo Chi-fung, Ernie

SARS SURVIVORS

Dr Toa Wai-lung, Tony

▶▶ **As** a doctor, the challenge of combating SARS is tough enough but Dr Lo Chi-fung, Ernie (羅智峰) then found himself fighting for his life when he contracted the disease.

The young doctor, a fresh intern, apparently fell foul of the virus while treating a pneumonia patient at the Queen Elizabeth Hospital (QEH) in early March.

He recalls: "At that point there was no policy on protection. Therefore, I took the case as usual but three days afterwards there was a dramatic deterioration in the patient's lungs.

"The patient went into intensive care unit and at that point I started having chills and fever. I thought, however, it was common cold and was not alert to SARS."

It was only on the 17th that Lo's colleagues became alarmed when they realised that one of the nurses Lo had been working with on the 9th was struck down with pneumonia.

Along with a second nurse, Lo was admitted to an isolation ward at the QEH.

He says: "I understood that the virus was completely unknown to the medical field, therefore, there was more uncertainty in my mind and I was a bit frightened.

"I could see my colleagues - the two nurses - and one of them deteriorated rapidly. I also knew that there was no confirmed effective treatment.

"SARS was still a mysterious disease at that time. Even the doctors treating me did not know what was happening and I was even thinking of death."

Because there was no characteristic white shadow on his chest X-rays, Lo was not treated as SARS at first and put on a course of antibiotics.

But by the 19th staff realised this was not working and he was switched to Ribavirin and steroids. Immediately his fever began to subside.

Lo says: "They did an X-ray on the 22nd that showed a haziness (on my lungs) had consolidated and this meant that my condition had deteriorated.

"At that time, I was conscious (of my illness) but did not want to think about it. For a couple of days, I just lay there and

looked at the ceiling. I could barely eat.

"I had my mobile and spoke to my girlfriend and mother who cried. I was depressed and desperate and thought that I would die."

But after 4-5 days, Lo's condition stabilised and after being transferred to a "step-down" ward for observation, he was discharged on April 4.

Despite a minor setback, Lo was back at work on April 28 but the impact of SARS and his subsequent recovery will continue to live with him for the rest of his life.

Lo says: "It was an unlucky event but it has made me realise that life is more uncertain. Because of this, I live more for the moment and life has become more precious.

"Another important impact for me has been the fact that being a patient has made me more sympathetic to their needs.

"Even the small stuff that might not matter to you as a doctor is very important to the patient."

This is a sentiment that fellow intern Dr Toa Wai-lung, Tony (陶偉龍) echoes.

Struck down when working at the Tai Po Nethersole Hospital in late March, Toa believes that it was his strong faith that helped carry him through the infection and its aftermath.

Transferred to the Princess Margaret Hospital in late March, Toa suffered from all the calling cards associated with SARS: chills, muscular pain, shortness of breath and fever.

He recalls: "For two days they had me on oxygen. I had prepared for death but I was not frightened. It was my family and friends who were worried."

Although he was eventually discharged after three weeks' treatment, Toa will not forget the lessons of SARS.

He says: "It effected me because I can now see the world from the patient's perspective. There is a shortage of time for doctors and patients to communicate. Doctors might not take the time to reassure patients and listen to all their concerns seriously.

"Now I see it as my duty to explain everything to SARS patients and to try and educate them about the disease." ◀

EXPERT PANEL MEETING AND JOINT SYMPOSIUM ON ATYPICAL PNEUMONIA

►► **The** Chinese Center for Disease Control and Prevention (Chinese CDC, 中國疾病及預防控制中心) and the Faculty of Medicine, the University of Hong Kong (HKU) have co-organized a Joint Symposium on Atypical Pneumonia on Sunday, April 27 at the Faculty of Medicine Building. An expert panel meeting was also scheduled for Saturday, April 26 before the Symposium.

The objectives of the expert panel meeting and the Symposium were to advocate collaborations between medical professionals and scientists in the Region and to keep them up-to-date of the latest development of SARS. Medical professionals and

scientists from Beijing, Shanghai, Guangzhou, Taipei, the Chinese University of Hong Kong, the University of Hong Kong and government officials were invited. They included Professor Ruan Li (阮力), Director of the Institute for Viral Disease Control and Prevention, Chinese CDC; Professor Hong Tao (洪濤), Academician of Chinese Academy of Engineering; Professor Ih-Jen Su, Director of Division of Clinical Research, National Health Research Institutes, Taipei, Taiwan; Professor Wen Yu-mei (聞玉梅), Professor of the Department of Molecular Virology, Shanghai Medical College, Fudan University; Professor Leong Che-hung (梁智鴻), Chairman of Hospital Authority (HA), Dr Vivian Taam Wong (黃譚智媛), Director (Professional Services & Medical Development) of HA, Dr Lo Wing-lok (勞永樂), President of Hong Kong Medical Association; Professor Sydney Chung (鍾尚志), Dean of Faculty of Medicine, the Chinese University of Hong Kong and many other experts were invited to join the expert panel and to deliver talks at the Symposium.

A Memorandum of Understanding between Chinese CDC and Faculty of Medicine, HKU was signed during the Joint Symposium on April 27. The Symposium was well attended by over 600 participants who responded with great enthusiasm to the experience sharing of the experts on SARS from different regions. ◀



FIGHT AGAINST ATYPICAL PNEUMONIA

►► **The** anxiety level of HK citizens has been pushed to a historical high by SARS. In order to provide more education of the disease to the community, Faculty of Medicine, the University of Hong Kong (HKU) and MTR Corporation have co-organized a health educational campaign so that HK citizens could have more thorough knowledge in combating SARS. This was a three-day educational campaign in 6 selected MTR stations, including Hong Kong Station, Admiralty, Yau Ma Tei, Wong Tai Sin, Po Lam and Tsuen Wan.

The Campaign has received very positive support from students. Over 200 medical and nursing students from the Medical Faculty have

participated in the Campaign. The student ambassadors distributed health education leaflets and answered public enquiries at the 6 MTR stations from April 10-12, 2003.

An Opening Ceremony was held on April 10, 2003 at the Hong Kong Station. Professor SK Lam, Dean of Faculty of Medicine and Mrs Miranda Leung, Corporate Relations Manager, MTR Corporation, were the officiating guests. The event was well covered by the media and have received very encouraging feedbacks from the MTR passengers.

To review the Opening Ceremony and snapshots of the Campaign, please visit www.hku.hk/facmed/mtr. ◀



PUBLIC EDUCATIONAL PROGRAM FOR ELECTRONIC MEDIA



▶▶ **With** the aim to provide the public with most updated SARS information, Faculty of Medicine, HKU has produced the 1st series of educational program on SARS in early April. The theme of the segments was to educate HK citizens with some practical tips on the prevention of the disease.

In view of the trend that SARS has gradually been under control, the Medical Faculty has produced the 2nd series of educational program which were broadcasted on ATV, Cable TV, Commercial Radio HK, Metro Radio, Phoenix Satellite TV, RTHK and TVB from May 29, 2003 onwards. A total of 9 segments were produced with the support of RTHK. The topics included some guidelines on household and public hygiene, rehabilitation of SARS patients, demonstrations on the correct procedures in measuring body temperatures for children and dealing with emotional stress relating to SARS etc.

VCD of the educational segments would be produced and distributed to all secondary and primary schools as well as kindergartens in Hong Kong. ◀

HKU NURSING HEALTH AMBASSADOR PROGRAM FOR PRIMARY SCHOOLS

▶▶ **“HKU Nursing Health Ambassador Program”** is an interactive educational seminar to introduce to primary school teachers and students on the preventive measures of SARS.

Over 117 on-site demonstrations by HKU nursing students and instructors were presented to 6,500 students in 17 primary schools from May 19-21, 2003 on the topics: (1) proper facemasks wearing, (2) temperature taking, and (3) contingency plan if students had fever.

The program was completed with great success and feedback from various schools was very encouraging. The teachers expressed great needs on other health promotion seminars to be organized in the future. ◀



SARS INFORMATION

Clinical Trial Centre

<http://www.hku.hk/ctc>

Faculty of Medicine

<http://www.hku.hk/facmed/sars>

Mapping Atypical Pneumonia (SARS)

<http://facarts.hku.hk/geog/sars>

HKU SARS Website

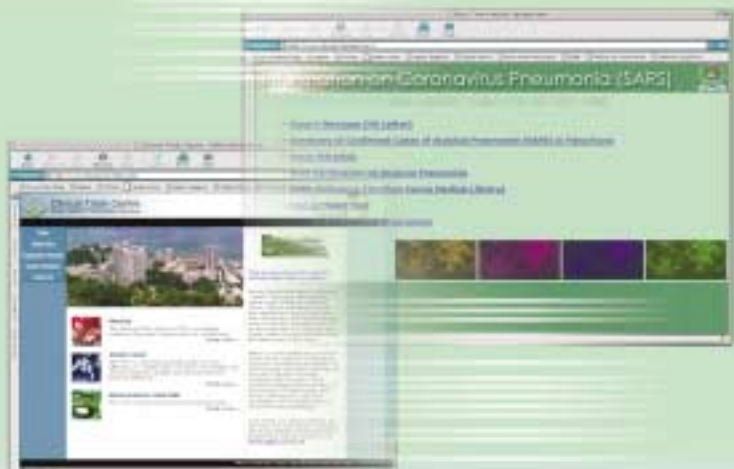
<http://www.hku.hk/sars>

Yu Chun Keung Medical Library

<http://www.lib.hku.hk/medlib/sars>

Fighting Against Atypical Pneumonia

<http://www.hku.hk/facmed/mtr>



In Memoriam

Dr Cheng Ha-yan, Kate (鄭夏恩)

Dr Cheung Sik-hin, Thomas (張錫憲)

Ms Lau Kam-yung (劉錦蓉)

Dr Lau Tai-kwan, James (劉大鈞)

Mr Lau Wing-kai (劉永佳)

Ms Tang Heung-may (鄧香美)

Dr Tse Yuen-man (謝婉雯)

Ms Wong Kang-tai (王庚娣)

The Faculty of Medicine, HKU and The University of Hong Kong Medical Alumni Association express our sincerest condolences and appreciation to the supreme sacrifice of the above medical frontline workers.

Their selfless devotion in the fight against SARS has demonstrated the highest level of professionalism with exceptional courage.

We extend our deepest sympathies to their family members.

Their dedication and spirit will be dearly remembered.

OUR MISSION

To diagnose SARS more quickly in the short term

To develop a cure for SARS over the medium term

To develop a preventive vaccine to eliminate further SARS cases over the long term

MAJOR COLLABORATION ON SARS

HONG KONG

- ▶▶ Chinese University of Hong Kong
- ▶▶ Department of Health
- ▶▶ Hospital Authority

MAINLAND CHINA

- ▶▶ Chinese Academy of Medical Sciences, Beijing
- ▶▶ Chinese Center for Disease Control and Prevention
- ▶▶ First Military Medical University, Zhujiang Hospital, Guangzhou
- ▶▶ Guangzhou Medical College and Guangzhou Institute of Respiratory Diseases
- ▶▶ Institute for Viral Disease Control & Prevention, Beijing
- ▶▶ Key Laboratory of Medical Molecular Virology, Shanghai Medical College, Fudan University, Shanghai
- ▶▶ Shenzhen Centre for Disease Control & Prevention

INTERNATIONAL

- ▶▶ WHO SARS Laboratory network
- ▶▶ New York, Aaron Diamond AIDS Research Centre
- ▶▶ Rotterdam, The Netherlands - Erasmus MC



SARS RESEARCH AND ACTIVITIES

Centre / Department	Project / Activity Title	Investigator(s)/ Person(s) In-charge
Anatomy	▶▶ Neuroprotection in steroid treated patients: an animal model.	KF So, SW Tang
Anatomy/Medical Sciences Group	▶▶ Study on the physical and biochemical properties of the S, M, E proteins of the SARS-Coronavirus in relation to its very unique impenetrating property of infectivity.	RMW Chau
	▶▶ Drug development specific for inhibiting SARS-Coronavirus infectivity: Targeting on S, M, E, 3CL ^{pro} and RNA polymerase.	
	▶▶ "Dermal-Thermo-Natural Medicinal Herb Treatment" for rehabilitation of recovering SARS patients: a pilot study.	
Clinical Trials Centre	▶▶ Summary of confirmed cases of atypical pneumonia (SARS) in Hong Kong – daily update.	JPE Karlberg
	▶▶ Letter to the Editor – summary of confirmed cases of atypical pneumonia (SARS) in Hong Kong – daily update.	
	▶▶ Why do men have a higher SARS case fatality risk than women?	
	▶▶ Are healthcare professionals influenced by negative media coverage? A Swedish-Hong Kong SARS story.	
	▶▶ The social impact of medical information and communication: The importance of new media technologies with SARS as a case in point.	W Lai
Community Medicine	▶▶ Surveys on public perception and preventive measures concerning SARS in Hong Kong.	TH Lam, GM Leung, SY Ho, B Chan, LM Ho, AJ Hedley
	▶▶ Studies on epidemiological determinants of SARS.	AJ Hedley, GM Leung, TH Lam, LM Ho jointly with Imperial College, Health, Welfare and Food Bureau, Department of Health, Hospital Authority and Department of Community and Family Medicine, CUHK
	▶▶ Epidemiological-serological studies of SARS patients and contacts and patients in primary care.	GM Leung, AJ Hedley, TH Lam, jointly with Department of Microbiology, HKU and Hong Kong Medical Association, Department of Health and Hospital Authority
Diagnostic Radiology	▶▶ Predictive value of radiographic evaluation in SARS.	CGC Ooi
	▶▶ Relationship between radiological and clinical parameters in SARS.	
	▶▶ Temporal lung changes on HRCT in SARS.	
	▶▶ Prevalence of fibrosis on long term follow up in SARS.	
Medicine	▶▶ Study of therapeutic antibodies.	KN Lai
	▶▶ Role of macrophage migration inhibitory factor in SARS pneumonia.	
	▶▶ Investigation of the liver function derangement of patients with severe acute respiratory syndrome (SARS).	CL Lai, ZD Goodman, A Mehrotra, KY Yuen, MF Yuen, WM Wong, PC Wong, KWT Tsang, ST Lai, WC Yu, TN Chau
	▶▶ Clinical profiles and longitudinal clinical course of SARS patients.	KWT Tsang
	▶▶ Retrospective study on treatment response to different steroid regimens in SARS.	
	▶▶ Study of acute respiratory distress syndrome by animal model.	J Mak
	▶▶ Screening for subjects with fever by remote sensing infrared thermographic camera.	CR Kumana, LS Chan

Centre / Department**Project / Activity Title****Investigator(s)/
Person(s) In-charge****Nursing Studies**

- ▶ A study on the influence of SARS on the nurses' physical and psycho-social health. SSC Chan, AFY Tiwari, S Leung, F Salili, GM Leung, TH Lam

- ▶ Health assessment and health education to the vulnerable elderly people during SARS epidemic. SSC Chan, WKW So, ACK Lee and AFY Tiwari

- ▶ Nurses on the frontline of care delivery to patients with severe acute respiratory syndrome (SARS) in Hong Kong. AFY Tiwari, SSC Chan, A Wong, J Tai, K Cheng, J Chan & KWT Tsang

- ▶ A study of the physical, psychological and social needs of a cohort of suspected SARS paediatric patients and their parents during hospitalization. SSC Chan, AFY Tiwari, E Wong, D Leung, J Lee, SL Lo and YL Lau

- ▶ Evaluation of nursing knowledge and practices for the infection control precaution in the paediatric units during SARS crisis. EMY Wong, SSC Chan, AFY Tiwari, FCW Chung

- ▶ A training program for primary school students as a health model at home during SARS outbreak. T Fung, I Fu & R Chan

- ▶ HKU nursing health ambassador programme for primary school students during SARS outbreak. KH Yip, D Chow & A Wong

**Obstetrics and
Gynaecology**

- ▶ Effects of severe acute respiratory syndrome and its treatment on semen parameters in humans. EHY Ng

**Orthopaedic Surgery/
Division of Joint
Replacement Surgery**

- ▶ A special clinic to follow-up the musculoskeletal status of SARS patients who had received high dose steroid. KY Chiu

- ▶ Avascular necrosis of femoral head in patients with history of SARS treated with high dose steroid. A prospective study of the epidemiology. WM Tang

- ▶ Early surgical intervention of avascular necrosis of femoral head in patients with history of SARS treated with high dose steroid. A prospective randomized study on core decompression and vascularized bone graft. WP Yau & BKK Fung

- ▶ Arthroplasty in SARS patients with steroid induced avascular necrosis of femoral head. A prospective randomized study comparing hemiarthroplasty and resurfacing total hip arthroplasty. TP Ng

**Paediatrics &
Adolescent Medicine**

- ▶ Seroepidemiological prevalence survey of SARS-associated coronavirus antibody in children residing in Amoy Garden compared to a control group in Southern District. YL Lau

- ▶ Is low serum mannose-binding lectin (MBL) associated with poorer outcome in patients with SARS?

- ▶ Seroepidemiology survey of SARS-associated coronavirus antibody in healthcare workers and patients in private clinics in a community with SARS outbreak. SSS Chiu

- ▶ Household attack rates of the novel coronavirus.

- ▶ The novel coronavirus as a cause of febrile illness other than SARS in children.

- ▶ The novel coronavirus as a cause of gastroenteritis in children.

- ▶ Mechanism of immune dysregulation in SARS: identification of viral genes. ASY Lau, DCW Lee

Centre / Department**Project / Activity Title****Investigator(s)/
Person(s) In-charge****Pathology**

- ▶▶ Mechanisms of lymphopenia in coronavirus pneumonia. L Lu, ESK Ma, LC Chan

- ▶▶ Study of various immune escape mechanisms adopted by SARS-associated coronavirus. G Srivastava, L Lu, SL Beh, KW Chan

- ▶▶ Tissue tropism and localization of coronavirus. IOL Ng

- ▶▶ Cytokine profiles in patients with coronavirus pneumonia. BM Jones, ESK Ma, JSM Peiris, Department of Medicine

- ▶▶ Establishment of laboratory database for SARS. BM Jones, ESK Ma, S Tam

- ▶▶ Analysis of laboratory database for SARS. BM Jones, ESK Ma

- ▶▶ Cytokine profiles in patients who have recovered from coronavirus pneumonia. BM Jones, ESK Ma, JSM Peiris, Department of Medicine

- ▶▶ Virus-induced cytokine production – an early diagnostic test? BM Jones, JSM Peiris

- ▶▶ Genetic susceptibility to coronavirus pneumonia (SARS-CoV). US Khoo, ANY Cheung

Psychiatry

- ▶▶ Psychiatric complications in SARS patients. ML Ng, RYL Chen

- ▶▶ Health care workers' perception of risk and preventive measures for SARS – an international study. ML Ng

- ▶▶ Psychological effects of SARS on 250 health-care workers compared with 350 matched healthy community controls. SE Chua

- ▶▶ How medical and nursing students adapt to SARS and standards of infection control: a sample of 300 HKU students.

- ▶▶ A comparison of 30 sick health-care workers with SARS and 220 SARS patients to determine psychological need.

- ▶▶ 250 high risk and 250 low risk health-care worker groups and their psychological response to SARS outbreak.

- ▶▶ Psychological effects of SARS on people in Hong Kong.

- ▶▶ Neurobiological dysfunction in patients with severe acute respiratory syndrome (SARS) following corticosteroid treatment: a follow-up study. RYL Chen, TMC Lee, AM Lee, SE Chua, KS Tai, L Yam, SW Tang

- ▶▶ A study of the immediate and long-term impact of the SARS epidemic on the well-being and quality of life of pregnant women in Hong Kong. AM Lee

Surgery

- ▶▶ Aerosol spread during endotracheal intubation, Ambu bagging, bronchoscopy and tracheostomy. WI Wei

- ▶▶ Immune status of health care workers in a moderate risk area.

- ▶▶ Protective facial masks (e.g. N95) and blood gas changes.

- ▶▶ The study of immune interaction between host and virus in SARS. L Tian

SARS PUBLICATIONS FROM FACULTY OF MEDICINE, HKU

American Journal of Nursing

Infection control and SARS in Hong Kong. American Journal of Nursing. June issue. 103:6, 60. (In press)
SSC Chan

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Rapid diagnosis of a coronavirus associated with Severe Acute Respiratory Syndrome (SARS). Clin Chem. 2003 Jun; 49 (6); 953-5.
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SARS Bulletin from Hong Kong: 6-13 April 2003. [news] Clin Infect Dis 2003 May 1; 36(9):iii.
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SSC Chan

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- ▶▶ Clinical progression and viral load in a community outbreak of coronavirus-associated SARS pneumonia: a prospective study. Lancet. 2003 May 24; 361(9371):1767-72. "Reprinted with permission from Elsevier (The Lancet, 2003 May 24; 361(9371):1767-72)."
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Riley S, Fraser C, Donnelly CA, Ghani AC, Abu-Raddad LJ, Hedley AJ, Leung GM, Ho LM, Lam TH, Thach TQ, Chau P, Chan KP, Lo SV, Leung PY, Tsang T, Ho W, Lee KH, Lau EM, Ferguson NM, Anderson RM.

SARS DONATION FOR STUDENTS

▶▶ In order to protect students against the risk of SARS, Faculty of Medicine, the University of Hong Kong has initiated a fundraising campaign amongst teaching staff and alumni in early May. The objective of the campaign was to support the expenses of the protective apparel for students attending clinical teaching at various hospitals.

The campaign was enthusiastically supported by staff members and alumni of the Medical Faculty and a total of HK\$219,350 has been raised by the end of May. The donation was used for the purchase of gowns, caps, goggles and surgical marks. They were distributed to medical, nursing and Chinese medicine students for free since the resume of clinical teaching on May 5, 2003.

The generous donation showed the united spirit of senior members from the Medical Faculty in fighting against SARS as well as their concern and support to the students. The SARS crisis has given the Faculty a much stronger sense of "one family" - one that all of us should be proud of.

HKU ESTABLISH A SCHOLARSHIP IN MEMORY OF MR LAU WING KAI

▶▶ Mr Lau Wing-kai was fatally infected by SARS as he tried to resuscitate a SARS patient who also later succumbed. With the support of Mrs Lau (wife of late Mr Lau Wing-kai), the Department of Nursing Studies, Faculty of Medicine, will establish a **HKU – Lau Wing Kai Scholarship** to commemorate the significant contribution, commitment and selfless efforts of Mr Lau. The scholarship will be awarded annually to undergraduate and postgraduate nursing students who have achieved academic and clinical excellence.

Should you wish to give your support, please deposit your donation to the following bank account:

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