

Twice-yearly Influenza Vaccination

Shown to be More Effective than Annual Vaccination in Older Adults

Older adults that get vaccinated twice a year can reduce their risk of influenza infection year-round according to a study led by NCID and Tan Tock Seng Hospital. Year-round protection is thought to be necessary in tropical climates where influenza causes infections throughout the year. This year-long study is the first clinical trial of six-monthly vaccination, and was conducted in 200 community-dwelling adults in Singapore aged 65 years and above.

The percentage of adults whose antibody levels indicated they were protected against the three influenza strains in the vaccine, increased from 56.8 per cent to 80.4 per cent, following a second vaccination. The incidence of respiratory illness was also significantly lower in the group who received two vaccines compared to those who received just one.

GET YOUR FLU SHOT

Emerging infectious diseases know no borders. Singapore has experienced and continues to face threats from a host of such agents. These emerging infections and their spread to Singapore is dependent on multiple factors but a key element to reduce the risk of such infections spreading within Singapore and mitigate any impact from their spread, is the "resilience" of the community against such threats. Intended as a long-term (5-10 years) programme at the National Centre for Infectious Diseases (NCID), SOCRATEs aims to address key gaps in pandemic preparedness, planning and response by assessing risk perception and knowledge, communication of risk and the necessity of outbreak interventions among the general population.

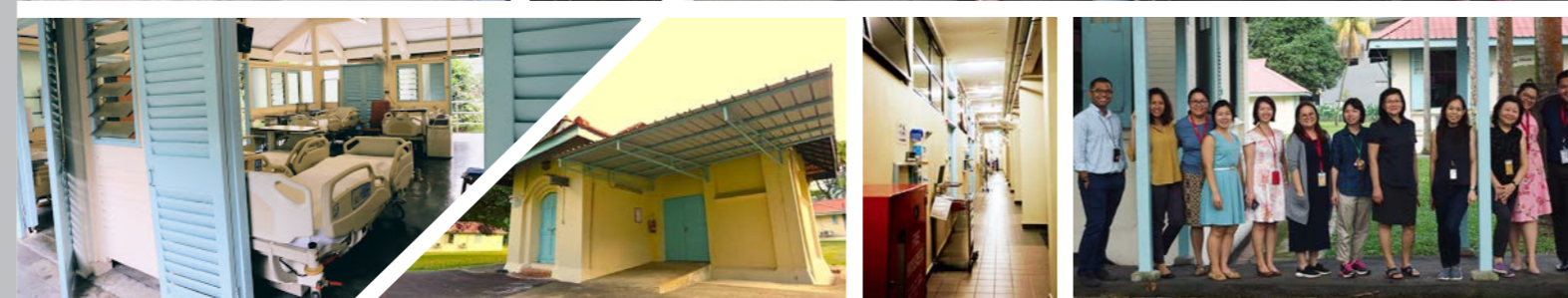
STRENGTHENING Our Community's Resilience Against Threats from Emerging Infections (SOCRATEs)

Led by investigators based at NCID in collaboration with experts within key partner institutions in Singapore, the research programme will establish and maintain a cohort of individuals, who are representative of the local population, in order to conduct studies to assess our community's resilience and test health interventions against different emerging infections throughout the continuum of pandemic phases. Recruitment of the cohort for the first wave of study will commence in the first quarter of 2019, and will be conducted by a group of fourth-year medical students from the Yong Loo Lin School of Medicine, National University of Singapore. Subsequent waves of recruitment will enlarge the cohort in either the latter half of 2019 or first half of 2020.

Trial Produces NEW INSIGHTS on Treatment of Patients with Antibiotic-Resistant Bugs

Piperacillin-tazobactam is not a suitable replacement for meropenem. This was the finding of a new trial (MERINO) to examine the effectiveness of an alternative to the more commonly used carbapenems for the treatment of ceftriaxone-resistant E. coli and Klebsiella pneumoniae. This finding has immediate major implications for doctors worldwide in treating these serious bacterial infections. Once a bloodstream infection by one of these bacteria is proven by blood culture, a carbapenem or "last-line antibiotic" can now be clearly recommended as the preferred antibiotic.

The MERINO trial, a collaboration between Tan Tock Seng Hospital, NCID, and National University Hospital with the University of Queensland and the Australasian Society for Infectious Diseases Clinical Research Network, paves the way to explore other alternatives and address the new emerging problem of carbapenem resistance, which is especially prevalent in South East Asia.



NCID News

ISSUE 1
January
2019

'Everyday things change, but basically they stay the same'

sang Dave Matthews. Probably not while thinking about infectious diseases and Singapore.

As legend would have it, NCID began as a quarantine camp of the British colonial administration sometime around 1907. This camp's purpose was to isolate sufferers of highly infectious diseases that were common at the time: the plague, smallpox and cholera. Over the following decades, vaccines effectively eliminated some of these diseases and sanitation greatly reduced the risk of others. The giddy early days of antibiotics led to confident predictions that communicable diseases were controlled.

To the casual observer then, the CDC compound might appear frozen in time. A relic of single storey huts and fruit trees, subject to the whims of a tropical downpour. A sign admonishing the offering of gratuities (except umbrellas, perhaps) points to a different age.

But the patients treated within CDC continue to change. The sudden emergence of HIV in the 1980s was a warning that control is an illusion and infectious challenges will continue to rever, just in a different form.

Singapore has reached upwards with its buildings and outwards with its people. Many of the infectious diseases that we worry about now are a consequence of this development and connectivity. We are also adapting to new health concerns: people are living longer but more do so with chronic medical conditions, while antibiotics are haunted by the inevitable spectre of resistance.

As CDC evolves into NCID, it welcomes new units with broader mandates and expands its national role to co-ordinating the planning, surveillance and response to infectious diseases in Singapore. What basically stays the same is what made CDC and what will make NCID – the people who work here and the patients we care for.



EDITORIAL TEAM: Dr Barnaby Young, Marion Abraham and Emma Seow
For more information on NCID, visit www.ncid.sg
For comments and feedback, email contact@ncid.sg

Over the last 117 years, the Communicable Disease Centre (CDC) has been the centre of infectious disease outbreak management.

Housed at CDC, the Institute of Infectious Diseases and Epidemiology was formed in 2012 to treat and prevent infectious diseases, manage outbreaks and provide leadership in clinical care. It is with much nostalgia that we bid farewell to the CDC at Moulmein Road as we move to the new National Centre for Infectious Diseases (NCID) building at 16 Jalan Tan Tock Seng. A progressive enhancement of capabilities, NCID is a purpose-built, state-of-art facility designed to strengthen Singapore's capabilities in infectious disease management and prevention.

Since late November 2018, NCID has been progressively opening its doors, first with Specialist Clinic J followed by cohort and negative pressure wards. This year, NCID will open its public health and clinical laboratories as well as a mass screening centre, operating theatres, ICUs, and isolation wards. By mid-2019, the 330-bed NCID will be fully operational with new and enhanced outbreak capabilities.

NCID is internationally unique as it integrates clinical, training, research, public health and community outreach functions in the area of infectious diseases under one roof at a national level. We have an exciting journey ahead of us as we carry out our roles in all these areas. I would like to express my heartfelt thanks to all staff at NCID who have tirelessly worked over many months on transiting CDC to NCID. The teamwork I have seen is extremely encouraging. I am confident that this teamwork will continue as we embark on our NCID journey together.

This is the inaugural issue of NCID News. I hope you will enjoy reminiscing about the CDC and learning about NCID in this issue. Produced twice a year, NCID News will bring you the latest developments in infectious diseases. Look out for our next issue in July!

Message from the Executive Director

National Centre for Infectious Diseases

PROFESSOR LEO YEE SIN



NCID: PROTECTING THE PEOPLE OF SINGAPORE from INFECTIOUS DISEASES

Looking back and looking ahead

The Communicable Disease Centre served Singapore well for 111 years. It has weathered multiple outbreaks, with its facilities re-purposed for a range of different challenges – just in the last 20 years from Nipah and SARS to Ebola and Zika. The world has changed since 1907. So have the demands made on our healthcare institutions and the threats infectious diseases can pose to meeting these.

Five years ago, in 2014, Minister of Health Mr Gan Kim Yong officiated the ground-breaking ceremony for NCID. This was the culmination of many years of hard work to improve our capability to offer the best possible patient care, and to safeguard Singapore in the event of an outbreak. It was also a new starting-point. A chance to

State-of-the-art facilities specially designed to cater to outbreaks

Many of the design concepts from NCID were developed through the lessons learnt from SARS and other outbreaks. Central to this is the recognition that an outbreak facility in Singapore must be able to shift its functions rapidly. From providing 'routine' daily healthcare, to a unit responding to the urgent needs of an outbreak.

The result: a self-contained 330-bed hospital with a full suite of facilities – isolation rooms, ICU, diagnostic imaging, operating theatre, mortuary, laboratories, an outpatient clinic and a one stop screening centre. These standalone capabilities allow for a lockdown of the building during a major outbreak while minimising the risk of transmission of pathogens from highly contagious cases to other vulnerable patients, the public and healthcare workers.

Additionally, a High-Level Isolation Unit (HLIU) sited within NCID will respond to the needs of patients with infections that are highly virulent and can spread from person to person, such as Ebola.

Responding to the infectious disease challenges of today

The potential for antimicrobial resistance is frozen into microbial genomes through their ability to mutate and share DNA to respond to existential challenges. Melting under the heat of antibiotic use, resistance emerges and can spread widely if unchecked. In response to this growing threat the Antimicrobial Resistance Coordinating Office at NCID will implement Singapore's National One-Health Strategic Action Plan on Antimicrobial Resistance. This brings together the animal, human, food and environment sectors to find solutions through education, surveillance, research and control.

The need for a co-ordinated national strategy is an important requirement for many other infectious diseases. This includes HIV and Tuberculosis, and national programmes for these diseases will be under the purview of NCID. The programmes will continue to set high standards of clinical care by enhancing and standardising patient databases and creating more synergistic working arrangements to prevent disease spread.

Building capabilities through research, training and education

There is a wealth of infectious disease knowledge, expertise and capability across the different institutions in Singapore. NCID will serve as a platform to consolidate this knowledge and carry out collaborative research and training.

The Infectious Disease Research and Training Office (IDRTO) will support multicentre infectious disease research and coordinate cross-institutional research with local and international collaborators. In addition, IDRTO will conduct in-house research and NCID's research lab, ward and clinic will be available to support large-scale studies and multidisciplinary trials.

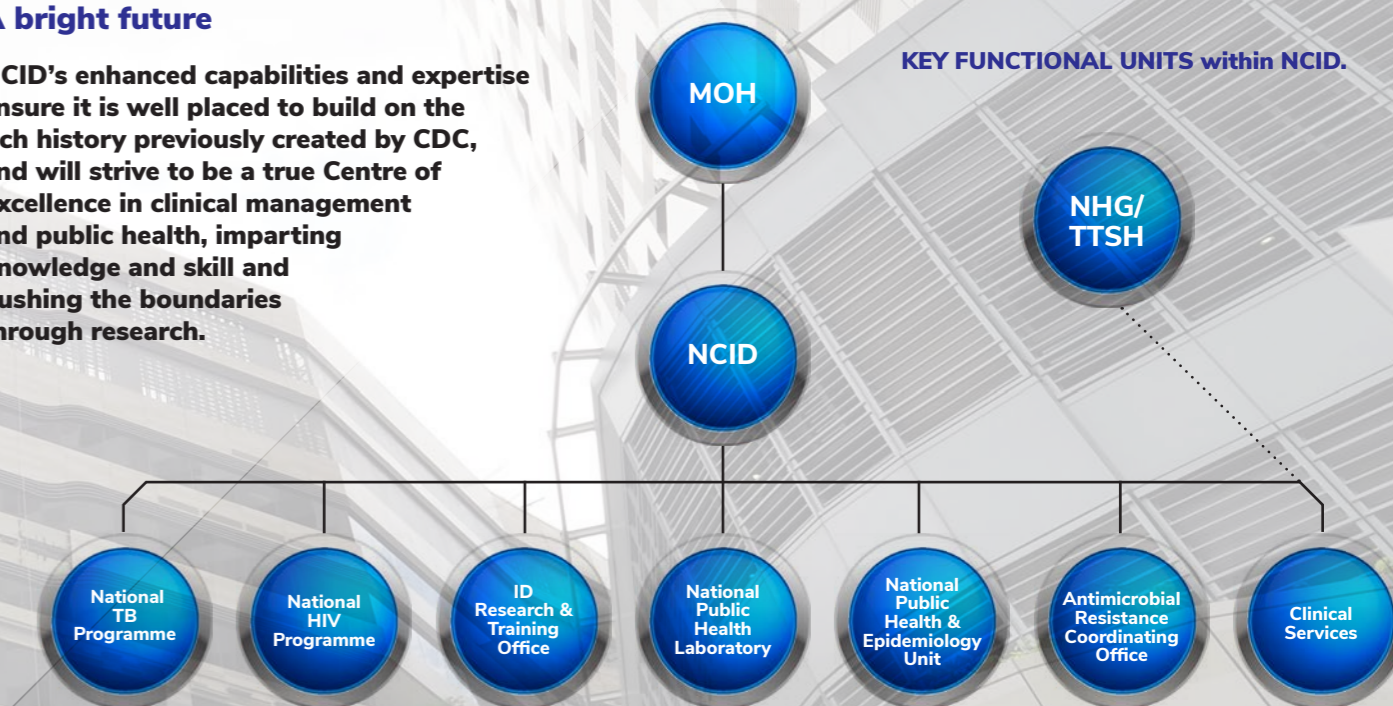
Outbreak preparedness is crucial not only to healthcare practitioners at NCID but also those from other institutions in Singapore and the region, since a pandemic will have far-reaching consequences. IDRTO will oversee to the professional development of healthcare workers in Singapore and beyond, providing training in areas such as infection control, epidemiology, and much more. By reaching out and engaging the public, IDRTO will also help build the resilience of the Singapore population.

Engaging resistance against infectious disease through community engagement

Building resilience among the community against infectious diseases during non-outbreaks will better prepare the nation to mount an effective response during an outbreak. Hence, NCID intends to enhance its current community outreach activities by mobilising everyone in the community to be aware of and participate in the prevention and management of infectious diseases. Some of the areas to engage the community include educating the public on the appropriate use of antibiotics to slow down the emergence of resistant bacteria and improving vaccination coverage for influenza especially among older adults and travelers.

A bright future

NCID's enhanced capabilities and expertise ensure it is well placed to build on the rich history previously created by CDC, and will strive to be a true Centre of Excellence in clinical management and public health, imparting knowledge and skill and pushing the boundaries through research.



NATIONAL CENTRE FOR INFECTIOUS DISEASES

Twice-yearly Influenza Vaccination

Shown to be More Effective than Annual Vaccination in Older Adults

Older adults that get vaccinated twice a year can reduce their risk of influenza infection year-round according to a study led by NCID and Tan Tock Seng Hospital. Year-round protection is thought to be necessary in tropical climates where influenza causes infections throughout the year. This year-long study is the first clinical trial of six-monthly vaccination, and was conducted in 200 community-dwelling adults in Singapore aged 65 years and above.

The percentage of adults whose antibody levels indicated they were protected against the three influenza strains in the vaccine, increased from 56.8 per cent to 80.4 per cent, following a second vaccination. The incidence of respiratory illness was also significantly lower in the group who received two vaccines compared to those who received just one.

GET YOUR FLU SHOT

Emerging infectious diseases know no borders. Singapore has experienced and continues to face threats from a host of such agents. These emerging infections and their spread to Singapore is dependent on multiple factors but a key element to reduce the risk of such infections spreading within Singapore and mitigate any impact from their spread, is the "resilience" of the community against such threats. Intended as a long-term (5-10 years) programme at the National Centre for Infectious Diseases (NCID), SOCRATEs aims to address key gaps in pandemic preparedness, planning and response by assessing risk perception and knowledge, communication of risk and the necessity of outbreak interventions among the general population.

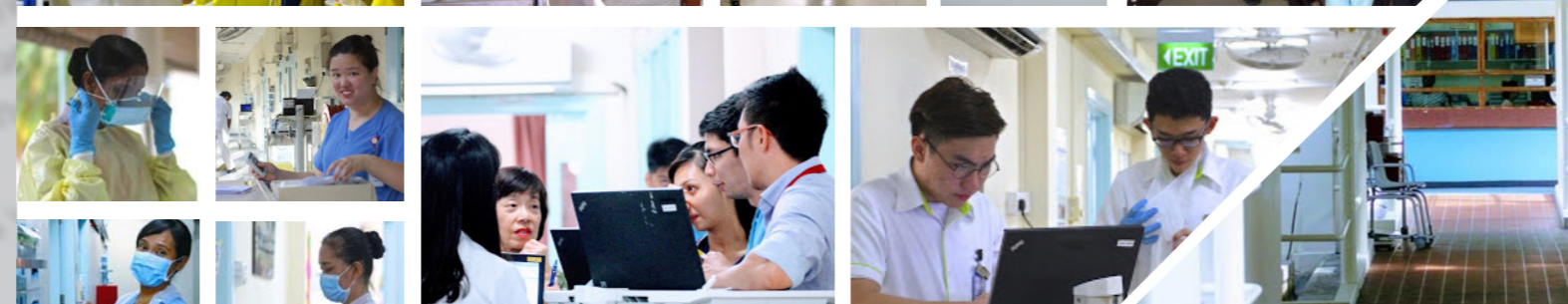
STRENGTHENING Our Community's Resilience Against Threats from Emerging Infections (SOCRATEs)

Led by investigators based at NCID in collaboration with experts within key partner institutions in Singapore, the research programme will establish and maintain a cohort of individuals, who are representative of the local population, in order to conduct studies to assess our community's resilience and test health interventions against different emerging infections throughout the continuum of pandemic phases. Recruitment of the cohort for the first wave of study will commence in the first quarter of 2019, and will be conducted by a group of fourth-year medical students from the Yong Loo Lin School of Medicine, National University of Singapore. Subsequent waves of recruitment will enlarge the cohort in either the latter half of 2019 or first half of 2020.

Trial Produces NEW INSIGHTS on Treatment of Patients with Antibiotic-Resistant Bugs

Piperacillin-tazobactam is not a suitable replacement for meropenem. This was the finding of a new trial (MERINO) to examine the effectiveness of an alternative to the more commonly used carbapenems for the treatment of ceftriaxone-resistant E. coli and Klebsiella pneumoniae. This finding has immediate major implications for doctors worldwide in treating these serious bacterial infections. Once a bloodstream infection by one of these bacteria is proven by blood culture, a carbapenem or "last-line antibiotic" can now be clearly recommended as the preferred antibiotic.

The MERINO trial, a collaboration between Tan Tock Seng Hospital, NCID, and National University Hospital with the University of Queensland and the Australasian Society for Infectious Diseases Clinical Research Network, paves the way to explore other alternatives and address the new emerging problem of carbapenem resistance, which is especially prevalent in South East Asia.



NCID News NCID News

NCID News

ISSUE 1 | January 2019 | ISBN No. 1234567890

'Everyday things change, but basically they stay the same'

sang Dave Matthews. Probably not while thinking about infectious diseases and Singapore.

As legend would have it, NCID began as a quarantine camp of the British colonial administration sometime around 1907. This camp's purpose was to isolate sufferers of highly infectious diseases that were common at the time: the plague, smallpox and cholera. Over the following decades, vaccines effectively eliminated some of these diseases and sanitation greatly reduced the risk of others. The giddy early days of antibiotics led to confident predictions that communicable diseases were controlled.

To the casual observer then, the CDC compound might appear frozen in time. A relic of single storey huts and fruit trees, subject to the whims of a tropical downpour. A sign admonishing the offering of gratuities (except umbrellas, perhaps) points to a different age.

But the patients treated within CDC continue to change. The sudden emergence of HIV in the 1980s was a warning that control is an illusion and infectious challenges will continue to rever, just in a different form.

Singapore has reached upwards with its buildings and outwards with its people. Many of the infectious diseases that we worry about now are a consequence of this development and connectivity. We are also adapting to new health concerns: people are living longer but more do so with chronic medical conditions, while antibiotics are haunted by the inevitable spectre of resistance.

As CDC evolves into NCID, it welcomes new units with broader mandates and expands its national role to co-ordinating the planning, surveillance and response to infectious diseases in Singapore. What basically stays the same is what made CDC and what will make NCID – the people who work here and the patients we care for.

