

INSTITUTE OF MENTAL HEALTH RESEARCH DIVISION

# A CHRONOLOGY OF MENTAL HEALTH RESEARCH FROM 2000 TO 2015



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# FOREWORD BY CEO

Research in health sciences can bring about medical breakthroughs that transform the lives of patients. Medical research also helps us to gain a clearer understanding of the causes and abnormal biological processes that result in illnesses.

But the road to groundbreaking findings is often fraught with challenges and difficulties. And success in research is possible only through the unwavering dedication and passion of researchers who boldly take up the challenge and persist through the turbulence.

Although the Research Division has a relatively short history at the Institute of Mental Health (IMH), I am impressed by the breadth and depth of the research they have accomplished during this time. Our research in early psychosis, which led to the development of the Early Psychosis Intervention Programme, has been bestowed the prestigious World Health Organization State of Kuwait Prize for Research in Health Promotion in 2006. Their work

has also been published in numerous high impact journals, including Nature. IMH has carried out landmark studies in population health which have provided valuable information for policy makers in the country. All these attest to IMH's productivity in research and our ongoing relevance in the local and international mental health community.

A rich research culture is emerging in IMH and our Research Division, led by Professor Chong Siow Ann, is a tremendous source of energy in driving new studies, as well as supporting clinical departments in their research efforts. We are now seeing IMH staff actively pursue continuous learning and research, as embodied in our Mission Statement.

IMH is committed to uncovering new ground in mental health research, knowing that our effort and commitment will translate to improving the quality of care and lead to more positive and meaningful outcomes for our patients.

“IMH is committed to uncovering new ground in mental health research, knowing that our effort and commitment will translate to improving the quality of care and lead to more positive and meaningful outcomes for our patients.”

A/Prof Chua Hong Choon,  
Chief Executive Officer,  
Institute of Mental Health



# INTRODUCTION



Neuron active nerve cell in human neural system



By Professor  
Chong Siow Ann,  
Vice Chairman of  
Medical Board,  
Research

Research means much more than discovery. At the Institute of Mental Health, our purpose is to understand mental illness and mental health in new ways that can improve our care for patients and their families. This means thoughtful and focused research that leads to new methods, improves current models and brings a higher standard of service to Singapore.

We had a relatively humble start and the Research Unit has a short history compared to the rest of IMH which goes all the way back to the late 1920s. As one of the newer departments, we have been guided by IMH's tradition of providing broad mental care for the population of Singapore.

When the IMH hospital was reconstructed in 2000, there was a concerted effort to establish a new foundation of mental health research

in IMH to direct and improve our work. The Research Division of IMH was established with an Institutional Block Grant (IBG) from the National Medical Research Council (NMRC).

We had a simple strategy: to leverage and focus on our strengths as the single national tertiary mental health treatment centre with a wide range of clinical expertise serving a huge patient population. To this day, staying focused has been our guiding mantra.

In 2000, we had just three people on staff in the Division with a couple of cubicles and a single workbench in a space shared with the Department of Early Psychosis Intervention. Today, our division comprises 50 staff from multiple fields and disciplines, working on many different projects, and we now occupy two full floors.

# EVOLUTION OF OUR KEY RESEARCH

Our Programme for Mental Health Policy Research is committed to generating and communicating relevant research about mental health and mental illness findings to stakeholders including policy makers, research administrators, patients and the general public.

An early focus of research was tardive dyskinesia which is a common and severe movement disorder that is consequent to treatment with conventional antipsychotics. Through a series of studies, we established the high prevalence of this disorder among our population of patients with schizophrenia—including among the Malay population for which there was no previously published data. We also demonstrated that contrary to common belief, this disorder was not lower among the Chinese and that it was associated with a higher mortality rate. The research team also uncovered a number of novel findings such as the association of a particular genetic mutation which has been replicated in an international collaboration. This has led to further collaboration with groups in Israel, India and China involving thousands of patients.

Another early effort was the deliberate incorporation of a research programme with a clinical initiative. The Early Psychosis Intervention Programme, funded by the Ministry of Health, was set up to address issues such as the long duration of psychosis and the lack of awareness of sources of help among those with psychosis. The body of research established a baseline database which enabled the subsequent evaluation of the programme and verified the

need for early detection in mental illnesses—a concept which had not previously been a priority in the local mental healthcare scene. This is now considered standard care in mental health. The research work in this area was recognized with the prestigious World Health Organization (WHO) State Of Kuwait Prize for Research in Health Promotion in 2006, and the inaugural National Clinical Excellence Team Award in 2008.

The depth of clinical research from this programme has led to the Translational and Clinical Research in Neuroscience Flagship Programme, a five-year, \$25 million study funded by the National Research Foundation. This is an international consortium which has leading researchers and clinicians in Singapore, the US, Australia and Hong Kong working on a cutting-edge research programme to identify the biomarkers for schizophrenia and related psychosis.

The programme has now extended to include research in neurocognition and lipidomics, and a clinical trial. On a related parallel track is a neuroimaging programme employing structural magnetic resonance imaging (MRI) and diffusion tensor imaging (DTI).

# EVOLUTION OF OUR KEY RESEARCH

Another game-changing development is our Programme for Mental Health Policy Research which is committed to generating and communicating relevant research about mental health and mental illness findings to stakeholders including policy makers, research administrators, patients and the general public. This leads to better service development, allocation of resources and patient outcomes.

the only part of IMH that engages in research though. The Department of Nursing Administration embarked on its own research journey in 1999. This was further enhanced with the introduction of evidence-based practice in 2008. Our nurse-researchers have won a string of Research Grants and have gone on to forge international partnerships that have contributed to



Past:  
Humble beginnings of Woodbridge Hospital

This programme has its origins in the work done in the aforementioned Early Psychosis Intervention Programme, and subsequently with a number of commissioned studies from external service providers and policy makers including those from various Ministries. These include qualitative studies and large-scale population-based studies like the landmark Singapore Mental Health Study (which has also developed a culturally valid instrument to measure the level of positive mental health in our local population) and the Well-being of the Singapore Elderly (WISE) study. Our Research Division is not



Present:  
Institute of Mental Health

the development and maintenance of quality healthcare globally. One example of this partnership is the JBI-IMH (Singapore) Centre for Evidence-Based Practices in Mental Health Care that was set up in 2010. This is the first collaboration between the Joanna Briggs Institute (JBI), an internationally-recognised leader in evidence-based practice, and a mental health institution. To date, the centre has produced numerous systematic reviews and evidence from research studies that have enabled IMH to develop improved clinical services, policies and treatment guidelines.

# OUR VISION AND MISSION

Our vision is to conduct research that will change for the better the way we think about mental health and improve the way we help those with mental illness.

Our mission is to:

- Actively seek out, develop and maintain vibrant and productive partnerships with stakeholders who include persons living with mental illness and their families, advocates, payers, clinical practitioners, researchers, and policy makers.
- Integrate or translate across levels of analysis from genetic, to molecular, to systems, to complex emotions, cognition and behaviour. This will involve the interdisciplinary integration of physical, biological, behavioural, and social science.
- Disseminate actionable relevant research findings in a timely manner to stakeholders including policy makers, research administrators, patients and the general public.

# ACHIEVEMENTS

Looking back at our achievements since 2000, we can see how much has already been accomplished in such a short time. Before 2000, this Institute was overwhelmingly a hospital that provided clinical care and some teaching; whatever studies that we managed to do were usually small single projects, the sum of which did not amount to any significant body of work in any particular area. There was also very little collaboration with external researchers.

With the restructuring of IMH and the establishment of the Research Division in 2000, there was a sea change in our emphasis on research. Since that initial determined start, we have to date garnered more than \$63 million in extramural funding, published more than 532 papers in peer-reviewed journals, won many awards, and forged numerous and extensive collaborations with local and overseas research centres.

With the progressive expansion of our research activities and funding, the Research Division had to be relocated a number of times, and most recently to its present site where it now occupies two floors—some 155 sq m with well-furnished cubicles, meeting rooms and assessment rooms, and facilities for blood sampling and processing. What has been most notable is the change in the attitude throughout IMH towards research.

We are glad that we have created a culture for research where none existed before. A sense of the importance and relevance of research has penetrated the awareness of everyone in the Institute. This is evident in the number of people engaged in research, the exponential growth in the number of research projects and papers published, the high ethical standards that we have upheld, and the various mechanisms that are now in place to facilitate research.



Mental health literacy interviewers' training

One of our key achievements is that we have now a coterie of committed and senior-level researchers who drive their own respective research programmes and others in other clinical and allied health departments who are actively engaged in research.

What has often been overlooked is the importance of the administrative support for research. It is often not appreciated that this is a highly specialised area which spans personnel, capital, and the many contractual, budgetary and intellectual property issues. Over the years, we have painstakingly built this structure with excellent staff, without whom we would

not be able to accomplish all these research projects.

When the First National Mental Health Blueprint and Policy was implemented in 2007, there was an emphasis on the need to build up research and there were key initiatives that had been identified. These include establishing a platform for inter-disciplinary collaboration, and doing research in population-based epidemiological studies, the genetics of mental disorders, brain imaging and the neuro-biological basis of mental disorders, health service research, and clinical trials. All this we have achieved.

# OUR PEOPLE

When the Research Division first started in 2000, it consisted of just three people: a Research Director who was a full time clinical psychiatrist, a Research Assistant and an Administrative Assistant. Today, we are 50 strong. The three staff who started the Unit are still with us today—the Research Assistant was Adj. Asst Prof Mythily Subramaniam, who is now our Director of Research. The then-Director of Research Professor Chong Siow Ann is now our Vice Chairman, Medical Board (Research) and the Administrative Assistant Saleha Othman is his Personal Assistant.

“If you are facing in the right direction, all you need to do is keep on walking.”

—Buddhist saying

Ensuring a high ethical standard for research among the mentally ill. Research on people with mental illness can be fraught with difficulties as the effects of certain mental illnesses impair decisional capacity making them a “vulnerable” population. With this always in mind, we have ensured that the rights and safety of patients are adequately safeguarded by establishing and maintaining an internal board within IMH, the Clinical Research Committee with all the necessary mechanisms for review, oversight and monitoring. At the same time, the push forward in scientific inquiry should be accompanied by further elucidation of certain ethical issues.

We have forged an ongoing collaboration with the Centre for Biomedical Ethics at the Yong Loo Lin School of Medicine to do research in factors affecting decisional capacity in clinical practice and research, understanding of risks and benefits, prodromal and high-risk research, psychiatric genetic research, and other dilemmas encountered in psychiatric practice.

The Research Division has come a long way since its inception and we look forward to continuing on the journey of new discoveries and improved care.

# CLINICAL RESEARCH COMMITTEE (CRC)

Left to Right:

## Chairperson

**Prof Chong Siow Ann**  
Senior Consultant

*Department of Early Psychosis Intervention  
Vice Chairman, Medical Board (Research)*

## Deputy Chairperson

**Adj. A/ Prof Daniel Fung Shuen Sheng**  
Senior Consultant

*Department of Child & Adolescent Psychiatry  
Chairman, Medical Board*



Left to Right:

## Members

**Adj. Asst Prof Eu Pui Wai**  
Senior Consultant

*Department of General Psychiatry 1  
Director, Rehabilitation Psychiatry  
Chief Medical Informatics Officer*

**Adj. Asst Prof Guo Song**  
Senior Consultant

*National Addictions Management  
Service*

**Mr Ng Boon Tat**  
Principal Pharmacist (Clinical)

*Pharmacy Department*

**Adj. Asst Prof Somnath Sengupta**  
Consultant

*Department of General Psychiatry 1*



We initially set up a Hospital Ethics Committee, and then when the ethical review and approval process was taken over by the Domain Specific Boards of the National Healthcare Group, this committee was transformed into the IMH Clinical Research Committee (CRC). This is an additional layer of protection and standard setting that we have insisted on having, showing our commitment to research of the highest scientific and ethical standards.

Left to Right:

## Members

**Adj. A/ Prof Sim Kang**  
Senior Consultant,  
Department of  
General Psychiatry 1

*Director, Education  
Deputy Director, Research Division*

**Adj. Asst Prof Mythily Subramaniam**  
Director

*Research Division*

**Ms Poh Chee Lien**  
Assistant Director,  
Nursing (Education)

*Nursing Training Department*

**Dr Jimmy Lee Chee Keong**  
Consultant and Deputy Chief

*Department of General Psychiatry 1 /  
Research Division*

**Dr Lim Choon Guan**  
Consultant and Deputy Chief

*Department of Child &  
Adolescent Psychiatry*



Left to Right:

## Members

**Ms Chan Lay Lin**  
Deputy Head

*Medical Social Work Department*

**Dr Bhanu Gupta**  
Consultant

*Department of Community  
Psychiatry*

**Dr Xie Huiting**  
Nurse Educator

*Nursing Training Department*

**Dr Patricia Yap -  
Tan Eng Hui Michelle**  
Principal Clinical Psychologist

*Psychology Department*



# RESEARCH DIVISION

The Mental Health Policy Studies team believes that researchers have an ethical obligation to ensure that research findings are disseminated to the participants as well as to the scientific and healthcare community.



The Research Division of the Institute of Mental Health (IMH) has two main research groups, one focusing on Mental Health Policy Studies and the other on Translational and Clinical Research.

The first is a group which focusses on Mental Health Policy Studies by conducting research that is both actionable and addresses the real-world questions faced by people living with mental illness, their families, providers, payers and policymakers in selecting, delivering, and financing optimal care. Having engaged policymakers to understand their present and future needs, large-scale and population-based surveys have been undertaken to address the knowledge gaps and

pressing demands on mental health in Singapore. A range of such surveys and policy studies have been undertaken for a number of agencies including the Ministry of Health, the Ministry of Defence, the Ministry of Social and Family Development, and the Singapore Prison Authority. The last completed project was the study of the mental health status of the adult Singapore resident population—The Singapore Mental Health Study (SMHS) 2010—that was funded by the Singapore Millennium Foundation (SMF) and the Ministry of Health (MOH). Over 6,600 Singapore residents were interviewed in 2010 to assess the prevalence of important mental disorders and their risk factors. Key findings from the

study such as the higher prevalence of alcohol abuse and nicotine dependence among those belonging to younger age-groups have resulted in increased public awareness and the development of interventions for this group. The data has been important to the development and implementation of the Community Mental Health Masterplan that is currently spearheaded by the Agency of Integrated Care.

Concurrently with the SMHS 2010, an instrument to measure positive mental health (PMH) was developed and validated in the local population. The PMH instrument is the first-ever validated scale developed in Asia that is culturally and locally relevant to our population. The scale has been widely used since its development. Researchers and healthcare professionals from the Saw Swee Hock School of Public Health, the Occupational Therapy department of IMH, Khoo Teck Puat Hospital and the National University of Singapore have obtained permission to use the instrument for estimating and tracking PMH among various population groups.

Another population-based study was conducted among the elderly and their family members which established the prevalence of dementia and depression in this population, the cost of illness and the burden of care.

The Mental Health Policy Studies team believes that researchers have an ethical obligation to ensure that research findings are disseminated

to the participants as well as to the scientific and healthcare community. Dissemination strategies are therefore incorporated in the early stages of study planning. This has not only produced a number of scientific publications in relevant and multi-disciplinary peer-reviewed journals, but has also resulted in print, broadcast and online media coverage. Together, the Mental Health Policy Studies group has successfully addressed knowledge gaps for important mental disorders in Singapore and has effectively raised awareness on mental health issues and treatments among Singapore's general population as well as policymakers.

The other group focuses on Translational and Clinical Research, and the centrepiece of this is our Singapore Translational and Clinical Research in Psychosis Programme (STCRP) which is a five-year, \$25-million project funded by the National Research Foundation. The project aims to identify key genetic, biological, cognitive, clinical and social risk factors for schizophrenia and related psychoses, and to establish the efficacy and safety of a neurocognitive-enhancing agent for patients with schizophrenia. A key objective is to contribute to the basic understanding of the disease process and enable earlier intervention through the development of better means of identifying individuals in imminent danger of developing psychosis.

In terms of social impact, an extensive network was built with community mental health partners that equipped them with the relevant knowledge to identify young people at risk of mental disorders. The group also helped raised awareness of the importance of mental health and encouraged a positive change in public mindset towards mental illnesses.

Through this flagship programme, IMH has created an internationally competitive biomedical research infrastructure in schizophrenia with expertise in clinical and cognitive phenotyping of Asian populations.

# CLINICAL TRIAL UNIT



The Clinical Trial Unit (CTU) at IMH was set up in 2003. It aims to facilitate the conduct of intervention studies in psychiatry within IMH based on the highest ethical and scientific standards and in a timely and cost effective manner. It provides administrative and clinical support and serves as a point of contact for all industry-sponsored clinical trials conducted in IMH.

The CTU has assisted in investigator and industry initiated Phase II to Phase IV clinical trials ranging from

children to the elderly in a wide range of psychiatric disorders. One of the CTU's strengths is that IMH is a single institute with a high level of clinical expertise serving at the national level. The CTU has established a research infrastructure with a cohesive, motivated and experienced team. In the years ahead, the CTU hopes to facilitate more intervention studies, both pharmacological and non-pharmacological, so as to bring newer therapies to our patients.

# CLINICAL DEPARTMENTS

## 1. EARLY PSYCHOSIS INTERVENTION PROGRAMME



The Early Psychosis Intervention Programme (EPIP) was initiated in April 2001 under the auspices of the Health Services Development Programme of the Ministry of Health. EPIP adopts a multi-disciplinary team approach to provide a comprehensive and personalised patient care service. Right from the start we decided to create a patient database that would help us track outcomes, evaluate our performance and incorporate research.

Using rating instruments to systemically evaluate our patients at baseline and subsequently at regular intervals, patients are evaluated on the severity of symptoms, social-occupational functioning, quality of life, and service satisfaction. In addition to such clinical ratings, other data such as number of admissions and length of stay are captured. To collate and analyse this data, we have a robust IT system that also enables us to keep track of our patients' appointments, thus alerting us to patients missing treatment and allowing us to follow-up faster and better.

### Database research

This database has helped EPIP brainstorm ideas for research projects, allowed for data mining for various studies and presentations, and provided a platform that facilitates research collaborations. Through this, EPIP has had the opportunity to mentor students, residents and allied health professionals with research interests. Our database has led to projects that focus on health services, evaluations of the effectiveness of interventions and qualitative data studies.

#### a. Health services

Using data collected for the database, EPIP has published studies such as those looking at remission and recovery rates and metabolic risk factors in our patients.

Current studies include those which look at the profile and outcomes of our first-episode psychosis patients such as their quality of life, incidence of trauma, medication adherence, pathways to care as well as predictors of suicide.

#### b. Effectiveness of interventions

In collaboration with other international early psychosis programmes, EPIP is involved in a multi-site study investigating the use of Omega-3 Fatty Acids and Cognitive Behavioural Management in patients at risk of psychosis. We are also planning to evaluate the effectiveness of psychosocial interventions in weight management of our patients, a new initiative that we will be starting.

#### c. Qualitative studies

EPIP has embarked on qualitative studies looking at our peer support programme and the experience of our patients who participated in a photography workshop to explore their personal experience of living with and recovering from psychosis.

# CLINICAL DEPARTMENTS

## 2. NATIONAL ADDICTIONS MANAGEMENT SERVICE (NAMS)

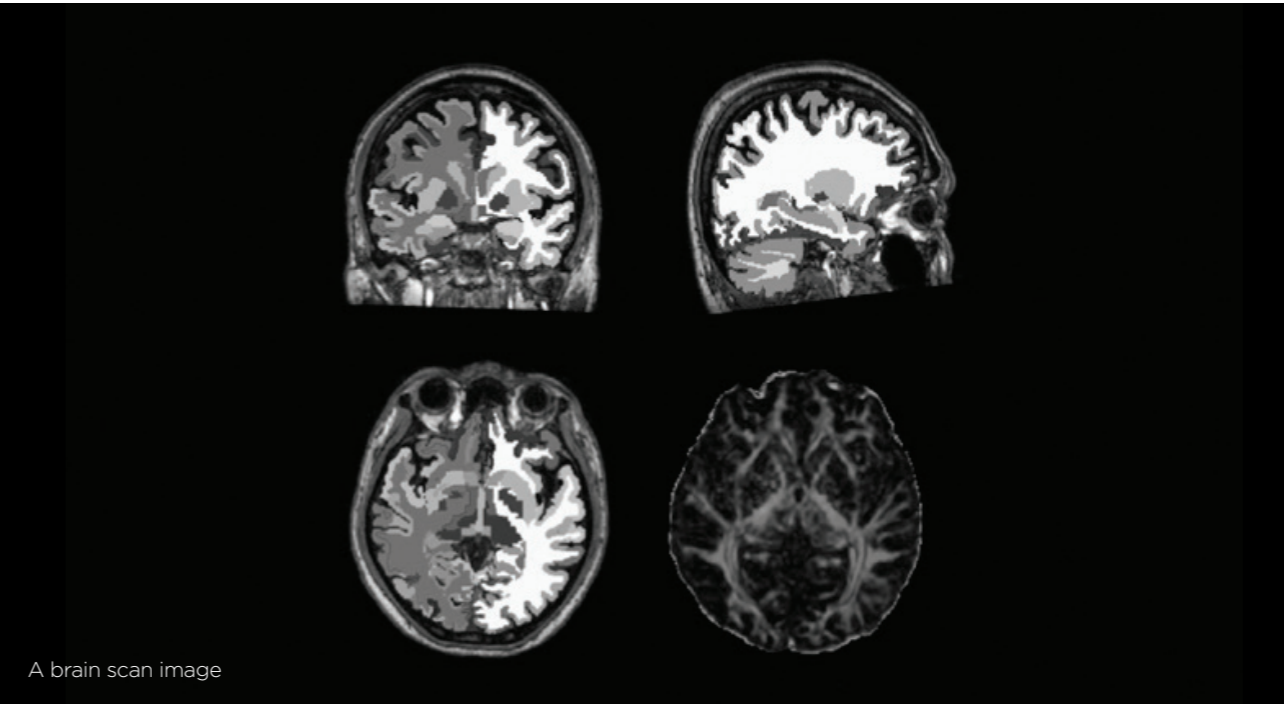


The NAMS research team, established in 2009, was initially tasked to design and implement a treatment outcome monitoring system to establish the effectiveness of treatment for individuals with substance or behavioural addictions, as well as a study examining predictors of outcome for pathological gamblers. In 2010, the team conducted a series of neuropsychological studies examining attention, memory and executive functioning in patients diagnosed with alcohol dependence undergoing inpatient detoxification or pathological gamblers attending the outpatient clinic. The findings

revealed the presence of significant cognitive impairment among alcohol-dependant patients that can limit patient engagement and response to psychological treatment interventions during detoxification and thus increase vulnerability to relapse. The team soon expanded to six full-time researchers and secured funding for a study to validate a screening instrument to detect cognitive impairment in substance misusers. In 2012, the team embarked on its first drug trial: a double-blind, randomized, controlled trial examining lofexidine as an alternative pharmacotherapy to diazepam to reduce the opiate

withdrawal syndrome during inpatient detoxification from heroin. The NAMS research team is also involved in examining patient responses to acupuncture as an adjunct treatment in the recently opened clinic. Meanwhile, NAMS researchers continue to seek opportunities to establish effective ways of identifying, treating and reducing harm from addiction.

## 3. DEPARTMENT OF GENERAL PSYCHIATRY



The main focus of this department has been in neuroimaging, in particular structural magnetic resonance imaging (MRI) and diffusion tensor imaging (DTI), to better understand the macroscopic and microstructural brain grey and white matter anomalies found in schizophrenia and bipolar disorder. The aim is to identify potential markers of illness, possible mechanisms of pathophysiology and plausible targets for intervention in the future. This has been performed so far at several levels, including that of focal brain changes, interconnected brain nodes, white matter tractography, comparison across diagnoses and relationship with genetic signals.

This award-winning research group has generated a number of novel findings that have been published in high-impact journals. They found, for instance, that patients with schizophrenia differ from healthy

controls in thalamic volume and shape and performed poorer in cognitive tasks of spatial working memory and executive functioning. Patients with first-episode schizophrenia were found to have lower white matter volume in the right temporal-occipital region corresponding to a white matter track responsible for visual processing, memory, language and numerical operations. In addition, anterior hippocampal shape deformity was associated with cortical thinning in the brain regions involved in visuo-spatial and verbal memory pathways. They have also reported on the widespread occurrence of white matter abnormalities in bipolar disorder, suggesting that disruption of white matter cortical-subcortical networks is a hallmark of the illness.

Extending from these earlier works, the research team has employed neuroimaging-genetic paradigms to

tease out the association between genetic signals from large-scale genome-wide association studies and brain white matter structures in patients with schizophrenia.

The other related thrust is in the area of identifying and developing reliable and objective tools to assist psychiatrists in delivering and monitoring care. There is a separate research group working to identify clinically relevant molecular signatures in the blood of patients with psychosis that can be attributed to disease processes or treatments. Their early work demonstrated the potential of blood-based biomarkers in identifying individuals with first-episode psychosis. This has resulted in a provisional patent filing, and current efforts are underway to replicate these early findings, as well as identify further signatures of clinical utility.

# CLINICAL DEPARTMENTS

## 4. DEPARTMENT OF CHILD AND ADOLESCENT PSYCHIATRY



The Research Unit in the Department of Child & Adolescent Psychiatry (DCAP) was established in 2008. Its first major undertaking was to support a large-scale randomised controlled trial (RCT) investigating the effectiveness of social skills training and Omega-3 intake in children and adolescents with Disruptive Behaviour Disorders (DBD). Since then, this budding team of researchers has expanded into a dynamic multi-disciplinary team of psychiatrists, allied health specialists and research staff with vast areas

of research interests. These include research on alternative treatment with two major trials looking at non-medicated treatment on ADHD and other Disruptive Behaviour Disorders (DBD). Besides the Omega-3 and social skills training trial, the other trial looked at the use of a Traditional Chinese Medicine (TCM) herbal compound as an alternative to conventional stimulant medication. Other current research areas are the exploration of a brain-computer interface (BCI) intervention that targets the inattentive symptoms

of ADHD children, one of the first large-scale RCTs, and the use of an interactive web-based game that could help children and adolescents with DBD manage their aggression.

The research team has secured many grants and rewards and has established collaborations with various foreign and local institutions including the Nanyang Technological University, A\*Star, Duke-NUS Graduate Medical School and the University of Pennsylvania.

# CLINICAL DEPARTMENTS

## 5. DEPARTMENT OF COMMUNITY PSYCHIATRY



The Department of Community Psychiatry provides optimal treatment for chronic psychiatric disorders outside the hospital. The comprehensive treatment for chronic mental illness includes psychosocial rehabilitation that aims to minimize disability and produce the highest possible levels of functioning and well-being for the patients served. The research done has been on the real-world situation of providing such care.

They have presented their findings in a number of local and international forums and published them in peer-reviewed journals. More significantly, the research has brought about improvement in the quality of patient care through the development of new programmes such as the Pilot Supervision Programme that caters to patients with major psychiatric disorders and underlying personality disorders. Multidisciplinary staff such

as the Case Managers and the other allied health staff have also studied the impact of case management in the community setting and have also initiated new services such as the Adult Neurodevelopmental Service to cater to the intellectually disabled, which is aimed at bridging the current health and social care divide in this area.

# NURSING RESEARCH



The Department of Nursing started its research journey in 1999 with a group of enthusiastic nursing leaders. This tradition was further enhanced with the introduction of evidence-based practice in 2008. The research culture flourished when nurses in IMH successfully secured eight Ministry of Health Nursing Research Grants for two research studies and six systematic reviews in April 2008. The grants supported the development of five clinical practice guidelines to guide nursing practice in IMH.

Since then, the IMH has cultivated international partnerships that have contributed to the development and

maintenance of quality healthcare globally with the establishment of the JBI-IMH (Singapore) Centre for Evidence-Based Practices in Mental Health Care in 2010. This is the first collaboration between the world renowned Joanna Briggs Institute and a mental health institution. To date, the centre has produced numerous systematic reviews and evidence from research studies that enables IMH to develop clinical services, policies and guidelines that direct patient care based on evidence reviewed by a panel of overseas experts. These include the use of multisensory therapy on agitated behaviours and cognition of elderly patients, and the implementation of a

care bundle for patients at high fall-risk at IMH, thus reducing the incidence of falls among elderly patients.

The gradual increase in the number of nurses participating in nursing research and evidence-based activities has garnered our nurses a number of research awards in medical conferences. It has also placed nursing research in the position to advance mental health evidence-based practices and research in the region and translate these to enhance practices, improve patient outcomes, and promote mental health.

# ALLIED HEALTH RESEARCH

The Allied Health Professionals (AHPs) in IMH comprise a team of case managers, medical social workers, occupational therapists, pharmacists, physiotherapists and psychologists with the mission of helping patients regain functional independence and improve quality of life through a holistic rehabilitation process, including therapeutic and direct patient care and support services. As a healthcare professionals, the Allied Health staff must meet two goals: to do their job well and to improve the level of care they can provide.

Continually improving on their practice and looking into innovative processes to deliver good care to patients is an unspoken expectation of AHPs. AHPs have been actively involved in practice-based research and have undertaken quality improvement projects where findings have served to inform clinical practice and improve delivery of care to patients. Their work has been accepted for presentation at numerous scientific meetings and for publication in journals. A number of AHPs, on their own accord, have also gone on to upgrade their competencies and skills in research through postgraduate PhD programmes and some have independently engaged in collaborative research work with institutions of higher learning.

To support AHPs with a passion for research, a research track has been included in the AHP career pathway to provide protected time for such staff. Opportunities abound for AHPs to engage in meaningful research that can contribute to evidence-based treatment in mental health. AHPs are encouraged to be involved in research and work towards making it part of their daily work.

## 1. DEPARTMENT OF PSYCHOLOGY



The research in the Psychology Department has its focus on training the next generation of psychologists by enabling and supporting the training of clinical psychologists.

The translation of theory to clinical application is emphasised and research findings from thesis projects serve to inform clinical practice. An example is a study which validated the Strengths and Difficulties Questionnaire (SDQ), a widely used screening instrument for child and adolescent psychopathology

in Singapore students between six to 16 years of age. Another is a study which investigated the perception of stakeholders of the Mental Capacity Act of Singapore.

The psychologists are involved in research projects at various clinical departments and clinical services, such as the validation of the Test of Memory Malingering in a Singapore forensic population by the Department of Forensic Psychiatry, a survey study on the training needs and work experience

of direct care staff working with patients with intellectual disabilities by the Adult Neurodevelopmental Service, evaluating the Montreal Cognitive Assessment (MoCA) as a screening tool to detect cognitive impairments in substance misusers here by the National Addictions Management Service, and a pilot study on the integration of a Cognitive Behaviour Therapy-based computer game in the clinical treatment of childhood anxiety.

# ALLIED HEALTH RESEARCH

## 2. DEPARTMENT OF OCCUPATIONAL THERAPY



The Occupational Therapy Department has been gradually building up its research expertise in the area of psychiatric rehabilitation over the past 10 years. It had also carried out research to explore how occupational therapy benefits patients in the general psychiatry wards. When the department established various vocational training programmes from 2005, it also conducted a qualitative research on the therapeutic effects of its training programmes. In recent years, the department has been driving evidence-based practices such as cognitive remediation and supported

employment. A study was done to investigate factors that predict good outcomes for people who receive job placement and support from our vocational specialists. A randomised controlled study was also conducted to investigate the effects of cognitive remediation on functional outcomes among schizophrenia patients. The department research portfolio includes studies on improving cognitive performance, the use of mindfulness interventions, as well as sensory-based interventions for a range of developmental and psychiatric conditions.

# ALLIED HEALTH RESEARCH

## 3. DEPARTMENT OF PHYSIOTHERAPY

The key research areas of this department are preventing falls among the elderly and using technology to motivate patients with mental illness to exercise.

These studies are in collaboration with the rest of the multi-disciplinary teams in IMH and include projects that examine the effectiveness of upright and active exercises in improving patients' muscular strength and mobility, exercise tolerance and participation, and interventions to reduce the number and duration of physical restraints in acute psycho-geriatric wards.



## 4. DEPARTMENT OF MEDICAL SOCIAL WORK

The Medical Social Work Department has done a number of quantitative studies in the areas of burden of care, vulnerability of caregivers, stigma and their influence on treatment compliance, and needs assessment of parents with mental illness. The department's research has given rise to the development of "I am a Resilient Kid" programme, a two-day life skills workshop to help children cope with parents who are mentally ill. The programme also brings parents and families together to address the dual challenge of parenting and coping with mental illness. Other studies include one on social workers' perception of social work services with mentally ill offenders, and a socio-demographic profile study of male offenders remanded for psychiatric assessment. In addition, there were several qualitative studies which focused on family-related issues of forgiveness in



couple therapy, spirituality and family caregiving. Other studies are reflective in nature, involving social workers' experience of intervening in families with domestic violence, meaning-making in the psychiatric social work practice, and spirituality as a resource

for social workers in psychiatric rehabilitation. Research is core to the actual social work practice and the department plans to further develop research in those areas that will inform service development, evaluation and knowledge in psychiatric care.

# ALLIED HEALTH RESEARCH

## 5. DEPARTMENT OF PHARMACY



With the increasing number of new medications available for the management of psychiatric conditions, continued monitoring and research is necessary for the safe and effective use of these medications. Pharmacists play an important role in promoting the evidence-based use of medication in psychiatry, and in monitoring the safety of medications for the local patient population.

Pharmacy involvement in research has gradually built up over the years as pharmacists work more closely with clinicians in patient care. Examples include contributing to the publication of various case reports in medical literature, and conducting studies related to medications used in psychiatry, such as:

- a. Clozapine-associated pseudomembranous colitis: a case report and review of literature;

b. Valproate-induced hyperammonemia in mental retardation: a case report and review of literature;

c. Recurrent episodes of brief affective psychosis induced by sibutramine;

d. Rare neuropsychiatric sequelae following neuroleptic malignant syndrome: a case report and review of literature;
- e. Reversible, delayed onset olanzapine-associated leucopenia and neutropenia in a clozapine-naïve patient on concomitant depot antipsychotic;

f. A case of suicidal thoughts with Alprazolam;

g. De novo emergence of obsessive compulsive symptoms with atypical antipsychotics in Asian patients with schizophrenia or schizoaffective disorder: a retrospective, cross-sectional study;
- h. Incidence and onset of clozapine-induced Agranulocytosis, leukopenia and neutropenia in Singapore: a retrospective study;

i. First-year incidence, ten-year prevalence and associated factors of blood dyscrasias among clozapine users in IMH.

As a member of the multi-disciplinary team, pharmacists also collaborate in research with other departments such as Early Psychosis Intervention Programme (EPIP) on “Clozapine use in patients with first episode psychosis”, and the National Addictions Management Services (NAMS) in the randomised clinical trial on the use of Lofexidine to reduce opiate withdrawal syndrome during inpatient detoxification.

# ALLIED HEALTH RESEARCH

## 6. CASE MANAGEMENT UNIT



The Case Management Unit was set up in 2003 to provide patients with better coordination of care and a seamless transition to the community. Since then, it has played a significant role in the multidisciplinary team to enhance the quality of clinical care in positive clinical outcomes, namely reduced readmission rates, treatment defaults and forensic complications. Research is instrumental to reach these ends.

Research in Case Management has examined patient reported outcomes, quality improvement, and the perception of the usefulness of treatment guidelines. These findings have been reported and shared through presentations in conferences and publications in scientific journals. Their research has also won them numerous awards both locally and internationally.

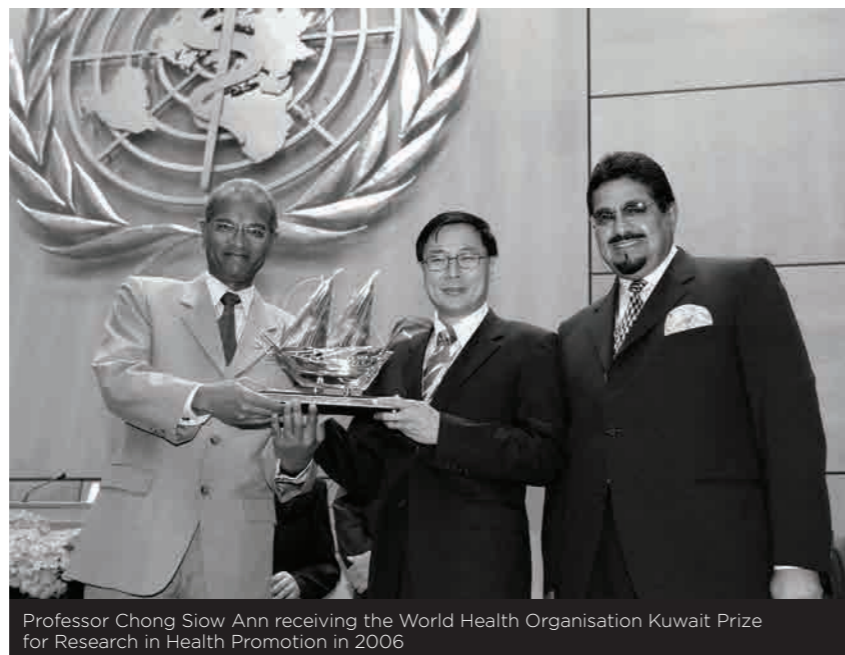
# ACCOLADES AND ACHIEVEMENTS

If you look at what has been achieved since 2000, it will be abundantly clear that we have come a long way. Before 2000, this Institute was almost wholly a hospital that provided clinical care and some teaching; whatever studies done were usually small projects, the sum of which did not amount to any significant body of work in any particular area. There was hardly any collaboration with external researchers.

But since we had made that initial determined start in 2000, we have to date garnered more than \$63,120,899 million in extramural funding, published more than 532 papers in peer-reviewed journals, won many awards, and forged numerous and extensive collaboration with local and overseas research centers.

One of our key achievements is that we have now a coterie of committed and senior level researchers who drive their own respective research programmes and others in other clinical and allied health departments who are actively engaged in research.

When the First National Mental Health Blueprint and Policy was implemented in 2007, there was an emphasis on the need to build up research and there were key initiatives that have been identified. These include establishing a platform for the inter-disciplinary collaboration, and doing research in population-based epidemiological studies, genetics of mental disorder, brain imaging and neuro-biological basis of mental disorders, health service research, and clinical trials. We have done all that.



Professor Chong Siow Ann receiving the World Health Organisation Kuwait Prize for Research in Health Promotion in 2006

The Straits Times, 14 May 2008

THE STRAITS TIMES WEDNESDAY, MAY 14 2008

## \$25m each for blindness, schizophrenia research

2 projects aim to pool expertise and resources, develop treatments fast

BY CHANG AI-LIEN  
Science Correspondent

A WHOPPING \$25 million each has been awarded to two ambitious research projects here to tackle blindness and schizophrenia.

The projects – Singapore's largest – will involve about 50 researchers here and abroad, comprising doctors and scientists from hospitals, tertiary and research institutes and disease centres.



FIGHTING SCHIZOPHRENIA: Prof Chong Siow Ann of the Institute of Mental Health.



FIGHTING BLINDNESS: Prof Donald Tan of the Singapore Eye Research Institute.

Focused in approach, wide in scope

### BATTLING BLINDNESS

The main aim of the programme is to develop better anti-scarring and wound-healing treatments for glaucoma and corneal diseases, two of the major causes of blindness.

Among the goals:

- » New drug treatments to control healing after surgery to treat inflammation and infection, and new ways to deliver drugs to different parts of the eye
- » New biological tissue "glue" for surgery as an alternative to sutures

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TODAY, 23 July 2014

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TODAY • WEDNESDAY 23 JULY 2014

STUDY OFFERS NEW HOPE FOR THOSE WITH THE DISORDER

## Researchers shed new light on schizophrenia

JORDAN SKDIANG  
jordan@mediacorp.com.sg

SINGAPORE – In the largest genomic study published on any psychiatric disorder to date, researchers from the Institute of Mental Health (IMH) and the Genome Institute of Singapore (GIS) have identified genetic markers that will enable better and early identification of those who might develop schizophrenia.

A disorder that has seen little development in drug treatment options in the past 60 years, schizophrenia affects approximately one out of every 100 people worldwide.

The latest findings by the researchers point to biological mechanisms and pathways that may underlie the disorder, and could lead to new approaches to treat it.

"With the new genetic loci identified, investigators can now further examine the functions of these genes especially related to the communications between brain neurons (cells) and their relationship with brain changes, cognition, clinical symptoms and daily functioning of the patients."

"A combination of this information from future studies can potentially allow for better detection of the illness, design of new treatments and monitoring of response to treatment," explained Adjunct Associate Professor Sim Kang, one of the researchers from IMH's Research Division.

Local data suggest that treated individuals are found with improvements of symptoms, and are able to engage in gainful employment, and there are significant improvements in daily functioning when the condition is detected and treated early.

Adjunct Assoc Prof Sim Kang  
IMH RESEARCH DIVISION RESEARCHER

al years of work, was a "great demonstration that large-scale genetic association study is a powerful tool for understanding disease genetic susceptibility and revealing novel biological insight into disease mechanism".

The researchers were part of the Schizophrenia Working Group of the Psychiatric Genomics Consortium (PGC), and the study was part of the five-year Translational Clinical Research in Neuroscience, which

is funded by the National Research Foundation. The PGC is an international, multi-institutional collaboration founded in 2007 to conduct broad-scale analyses of genetic data for psychiatric disease.

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The Straits Times, 23 July 2014

## S'pore researchers help spot schizophrenia links

Global study identifies 83 new genes connected to the disorder

By KASH CHEONG

RESEARCHERS here have contributed to a global study that has identified 83 new genes linked to schizophrenia, a finding that could help uncover the disorder's biological cause.

Treatment options are limited as the biological causes of schizophrenia have not been understood, said the Institute of Mental Health (IMH) and the Genome Institute of Singapore (GIS), where the five Singapore researchers involved hail from.

"The latest findings point to biological mechanisms and pathways that underlie schizophrenia and could lead to new approaches to treating the disorder, which has seen little innovation in drug development for more than 60 years," said Professor Chong Siow Ann from IMH, who took part in the study published in science journal Nature yesterday.

Schizophrenia patients typically suffer from hallucinations, paranoia and mental breakdowns. IMH sees about 500 new cases each year. Those with schizophrenic parents are also at higher risk of the illness. The study's findings could also mean earlier detection in the long run, said researchers here.

The study, which compared

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# KEY MILESTONES

**2000** Looking back at our achievements since 2000, we can see how much has already been accomplished in such a short time. Before 2000, this Institute was overwhelmingly a hospital that provided clinical care and some teaching; whatever studies that we managed to do were usually small single projects, the sum of which did not amount to any significant body of work in any particular area. There was also very little collaboration with external researchers.

**2001** Research in First-Episode Psychosis was identified as an important service and research focus. The identification of prolonged duration of untreated psychosis among patients in IMH led to the successful funding of the EPIP programme. This programme aims to provide intensive psychosocial interventions and appropriate pharmacological treatment for those with first episode psychosis. The programme was one of the first to incorporate an active research component as part of the clinical programme that helped in constantly monitoring outcomes and improving interventions.

A series on basic training on research methods and statistics was organised for researchers at IMH. The training provided a foundation of skills and knowledge necessary to embark on research projects in the years to come.

**2002** Two large national epidemiological studies were conducted to establish risk factors of depression among older adults and those of depression and anxiety among adult populations in Singapore - the National Mental Health Survey and the National Mental Health Survey of the Elderly.

The National Mental Health Survey (Adults) aimed to establish the prevalence of depression and anxiety in the adult population in Singapore. The study comprised interviews with 2,847 households from an ethnically stratified random sample of adults aged 20–59 years who were Singapore citizens or permanent residents. The prevalence of Depressive Disorders (Major Depressive Disorder and Dysthymia) was 4.9 percent; female: 5.5 percent, male: 4.3 percent. The prevalence of Depressive Disorders was lowest in Malay males: 2.5 percent, and highest in Indian females: 7.7 percent. The lifetime prevalence of Generalised Anxiety Disorder (GAD) was 3.3 percent, and the current prevalence was 3.0 percent.

The National Mental Health Survey of the Elderly aimed to provide nationally representative estimates of the prevalence of dementia in the elderly population of Singapore. The study found that the overall prevalence of dementia for older adults over 60 years was 5.2 percent and 6.0 percent for those over 65 years. For those over 75 years old, it was 13.9 percent. The prevalence of dementia in the age group was 60–64 years was 0.8 percent; in the age group 65–74 years, it was 4.0 percent; in the age group 75–84 years, it was 9.2 percent; and for those over 85 years, it was 32.2 percent. These were the first estimates of dementia prevalence based on a nationally representative sample of elderly subjects in Singapore. The Principal Investigators of the two studies were A/ Professor Chua Hong Choon and A/ Professor Chiam Peak Chiang respectively.

**2003** Researchers at IMH established the psychological and social impact of the SARS outbreak among primary health providers and mental healthcare staff.

The first case of SARS arrived in Singapore in February 2003, and by the end of May, a total of 206 people had been infected; there had been 32 fatalities, of whom four were healthcare workers (HCWs). This study aimed to assess the psychological morbidity in the community healthcare workers during the outbreak of SARS as well as examine whether the HCWs who had treated SARS patients would experience greater psychological distress. Two months after the SARS outbreak, all the GPs and TCM practitioners in Singapore were mailed a set of self-reported questionnaires, which included the General Health Questionnaire (GHQ), the Impact of Event Scale-R (IES-R), and a questionnaire to measure the perception of stigma. A total of 721 (29 percent) GPs and 329 (22 percent) TCM practitioners responded to the survey. Significantly more GPs had worked in SARS affected facilities and had been directly involved in the care of patients with SARS than the TCM practitioners. Those GPs who were directly involved in the care of patients with SARS had more psychological comorbidity than those not involved in the care of patients with SARS. The mean score of the GHQ somatic, anxiety and social dysfunction subscales were significantly higher in GPs as compared to TCM practitioners. The GHQ total score as well as the subscales were significantly correlated with the IES-R and stigma subscales.

**2004** An epidemiological survey among 23,000 Singapore Armed Force pre-enlistees was completed to assess common mental disorders in this group.

The study was initiated to screen young men who were about to be enlisted into the military in Singapore for psychiatric disorders. The accurate identification of persons with undetected mental illnesses, as well as those at high risk, has obvious implications for the armed forces, including the provision of psychiatric service to those needing it, and a more informed allocation of manpower and resources. This collaborative project was undertaken by investigators from IMH and the Singapore Armed Forces. The aims of the project were to examine the ease of administration of a screening instrument for psychiatric disorders, to investigate the validity of the screening instrument, and to determine the rates of psychiatric disorders and treatment for these disorders among a population of Singapore male adolescents. The mean age of the subjects was 19.0 (SD= 1.2) and ranged from 16 to 26 years. 4.8 percent of them had an alcohol-related disorder, i.e. alcohol abuse or dependence and 0.9 percent had a drug-related disorder, i.e. either drug abuse or dependence. The prevalence of nicotine dependence was 12.3 percent in the sample of 9,702 males assessed by the Composite International Diagnostic Index (CIDI). Those with nicotine dependence had attained significantly lower PSLE scores than those who did not meet a diagnosis of nicotine dependence. Those with nicotine dependence also had significantly fewer years of schooling as compared with those without. There were also significant ethnic differences associated with nicotine dependence. A higher proportion of Malays and Indians were found to be in the nicotine-dependent group as compared with those who were not dependent.

# KEY MILESTONES

**2005** This year saw the establishment of the two main research programmes - the Programme of Mental Health Policy Studies and the Programme for Translational and Clinical Research. The Programme of Mental Health Policy Studies addresses the real-world challenges that mental illness poses to individuals, their families, care providers, payers and policymakers. This programme works with various stakeholders to ensure the relevance of the findings which have to be actionable for them.

The aim of the Programme for Translational Clinical Research is to generate scientifically relevant research that will contribute meaningfully to understanding the underlying mechanisms of mental disorder, treatment response, recovery; and/or translating these discoveries into interventions that will relieve the suffering of people with mental disorders.

**2006** IMH's Early Psychosis Intervention Programme won the World Health Organisation, State of Kuwait Prize for Research in Health Promotion.

**2007** IMH spearheaded the research initiative that was one of the main thrusts of the first National Mental Health Blueprint and Policy. In 2005, the Ministry of Health of Singapore convened a committee of psychiatrists, medical administrators, other mental health professionals and representatives from nongovernmental organisations to draw up a National Mental Health Policy for the country. The subsequent Blueprint was a five-year plan that was implemented in 2007 and one of the four key areas of focus was developing mental health research.

An important component of this was a nationwide epidemiological study on the mental health status of the resident population. A national survey gives more accurate and actionable information when compared to surveys on select clinical populations which are biased by the illness behaviour of those seeking help and the exclusion of the ill who did not seek help. There were no previous population-based studies that went beyond establishing the rates of mental disorders in Singapore i.e., there was no data on the unmet needs, help-seeking behaviour and the impact of mental disorders on the workforce. These considerations led to the Singapore Mental Health Study (SMHS), which was a household survey of the adult resident population initiated in 2008.

**2008** The Research Division received the prestigious \$25 million, five-year Translation and Clinical Research Grant in Neuroscience. It focused on the following three interlinked projects:

- A Comprehensive Genetic Study of Schizophrenia and Neurocognitive Impairments;
- Prospective Observational Study of Young Adults at Ultra High Risk for Psychotic Disorders; and
- Double-blind randomised controlled trial of cognitive enhancement.

IMH embarked on a bench-to-bedside research programme focusing on three areas. The overall objective was to identify key genetic, biological, cognitive and social risk factors for psychotic disorders, and to establish the efficacy of a new neurocognitive enhancing agent in patients with schizophrenia. The team led by Prof Chong Siow Ann, the Vice Chairman of Medical Board (Research) and the Senior Consultant Psychiatrist at IMH, included internationally recognized researchers from various institutions in Singapore as well as from Duke University and the University of Melbourne. They encompassed a broad range of expertise, from basic science (in genomics, neuroimaging) to clinical acumen regarding high-risk psychosis studies and assessment and treatment of cognitive deficits in schizophrenia. An extensive network of collaboration has been set up with the Genome Institute of Singapore, Singapore Clinical Research Institute, National University of Singapore, University of Melbourne, and Duke University, encompassing various aspects of early detection, epidemiology, genetics and treatment.

- The Singapore Mental Health Study was initiated to assess the state of mental health of adult Singapore population. The aims and objectives of this study were to:
  - I. Conduct a population-based epidemiological study and assess the prevalence of mental disorders;
  - II. Describe current use of mental health services and identify barriers to mental health care in Singapore;
  - III. Investigate the social, cultural and economic factors associated with major mental disorders; and
  - IV. Develop and validate a tool to assess the mental well-being in the Singapore population.

The study showed that 12.0 percent of the population had at least one lifetime affective, anxiety, or alcohol use disorders and 4.5 percent had current nicotine dependence. The 12-month prevalence of at least one affective, anxiety or alcohol use disorder was 4.4 percent, and the most prevalent 12-month disorder was major depressive disorder (MDD) (2.5 per cent). The study found that the majority of mentally ill individuals did not seek help and this is consistent with other international studies. Of those who sought help, there was a considerable delay before doing so: the shortest was among those with MDD (median of four years) and the longest was alcohol abuse (median of 13 years). More than 13 percent of those with any lifetime disorder and who were help-seeking, sought treatment from a psychiatrist, 5.8 percent sought help from a psychologist, 8.4 percent saw a general practitioners (GP), 9.6 percent went to a counsellor, and 6.6 percent consulted a spiritual or religious healer. The study confirmed that comorbidity between mental disorders and medical disorders is common—14.3 percent of people with a chronic medical condition had at least one mental disorder, and 50.6 percent of those with a mental disorder had a chronic medical condition. This comorbidity was associated with increased severity and “days out of role”.

# KEY MILESTONES

**2011** The Well-being of the Singapore Elderly survey among older adults was initiated to establish prevalence and risk factors of dementia.

Demographic ageing is proceeding at a rapid pace worldwide than what was initially estimated due to increase in life expectancy and reduced mortality and fertility rates. According to 2008/2009 report by the Ministry of Community, Youth and Sports Development (State of the Elderly in Singapore 2008/09) Singapore's elderly population - defined as persons aged 65 years and older - has grown dramatically since the country's independence in 1965. Dementia is a growing public health issue in the Asia-Pacific region. The number of people with dementia in the Asia-Pacific region will increase from 13.7 million people in 2005 to 64.6 million people in 2050 (Asia Pacific Members of Alzheimer's Disease International). In Singapore, with the rate of population ageing at 3 percent per year, two to three times higher than that of other developed countries, the number of people with dementia will more than double from 22,000 in 2005 to 52,600 by 2020 (Asia Pacific Members of Alzheimer's Disease International).

The aims and objectives of this study were to:

1. Conduct a population-based epidemiological study to establish the prevalence of dementia and depression among the elderly population in Singapore (age 60 years and above);
2. Identify the associated factors for dementia and depression among the elderly;
3. Describe current use of healthcare services and unmet needs of patients of dementia;
4. Estimate caregiver burden; and
5. Evaluate the economic burden comprising indirect (informal care) costs, lost earnings and direct costs (health and social care and medication) of dementia in Singapore.

**2013** A symposium on 'Improving Mental Health of the Population - an Asian Perspective' was held in conjunction with the World Health Summit.

Increasingly, countries across the world are adopting a population health approach to mental health. Such an approach encompasses the whole lifespan of populations, i.e., from infancy to old age, and includes all levels of care from primary to tertiary. It also involves a wide spectrum of interventions from prevention to maintenance, thus lessening disease prevalence, morbidity, disability and mortality. This one-day symposium focused on innovative and multidisciplinary approaches to improve mental health using a wide range of interventions across the lifespan of people. International and local experts shared their experiences with an audience comprising mental health professions and care providers from various sectors in Singapore.

IMH was awarded the \$10 million Centre Grant by the National Medical Research Council, Singapore in 2013. Centre Grants are institution-centric grants that are intended to support a research programme in which a team of investigators works on a clearly defined central theme of mutual scientific interest.

**2014** Prof Chong Siow Ann, together with his research team and A\*STAR's Genome Institute of Singapore, has helped identify over 100 locations in the human genome associated with the risk of developing schizophrenia in a genome-wide association study published in Nature [Nature vol 511, no. 7510 (Jul 24, 2014); 421-7] which is the top-ranked science journal. The team was part of the five-year Translational Clinical Research Programme in Neuroscience (funded by the National Research Foundation) of which Prof Chong is the Principal Investigator.

# RESEARCHERS

## Main Research Themes: Overall mental health levels in Singapore's population and biomarkers of schizophrenia



**Prof Chong Siow Ann**

Senior Consultant,  
Department of Early Psychosis  
Intervention

Vice Chairman, Medical Board  
(Research)

My initial focus was in psychosis and the various aspects of this group of heterogeneous disorder - ranging from genetics, clinical phenotypes, and the psychopharmacological treatment. This area of work later led to our ambitious five-year programme which was an international collaborative effort to identify the biomarkers of schizophrenia and related psychosis.

The other direction of my research was impelled from a conflation of necessity and opportunity. There was a need to map the mental health status of the Singapore population as an integral component of our first ever National Mental Health Blueprint and Policy. We have since established the prevalence of a number of key mental illnesses including dementia in the local population and their correlates - information that is vital for policy formulation, service development and resource allocation.

### About the Researcher

There is much potential within this Institute to be able to do good, impactful research which should be those research that will change the way we think about mental health and change the way we treat people with mental health issues. As Vice Chairman, Medical Board (Research) I have tried in these years to realize this potential. We have now an infrastructure for research that includes an expertise in research administrative support, an extensive and productive platform for collaboration between clinicians and researchers across the various disciplines and across countries, and a coterie of mental health researchers within this Institute, all of which has established IMH as the hub of mental health research in Singapore.

At the end of the day, we are very minor blips in this universe and real greatness is achieved by the very few. Most of us would never reach that level of greatness. What is important though is whether in our tiny roles, in our brief time on this earth, we can make a bit of difference and add more beauty than ugliness. Among the few other things that matter to me, doing a good useful piece of research is a thing of beauty - the best of which contains truth, creativity, elegance, grace and is of service to others.

Main Research Themes:  
Psychosis and addiction



**Adj. Asst Prof Mythily Subramaniam**  
Director, Research Division

My research interest and focus is increasingly in the area of psychosis and addiction, and I am involved in a number of ongoing studies in these fields. We are exploring the prevalence and risk factors of smoking and alcohol use disorder among patients with psychosis and also working collaboratively with the addiction medicine department, especially on behavioural addictions like gambling disorder.

**About the Researcher**

More than 13 years back, I replied to an advertisement for a Research Assistant at the then newly restructured Institute of Mental Health and Woodbridge Hospital, was given the job, and the rest is history!

While understanding the various aspects of psychiatry was challenging, the terminology and fundamental understanding was helped by my prior knowledge of medicine as I'm trained as a medical doctor with a Master in Biochemistry, though I did not specialize in psychiatry. Research on the other hand was an entirely different cup of tea. The learning curve was steep and I struggled initially to get the nuances right but I found it immensely fascinating, which developed into a passion.

The landmark Singapore Mental Health Study (SMHS) was the turning point in my life where we learnt from experts how to conduct large scale surveys. This study gave me an appreciation of policy matters and taught me how to work as part of a large team spread both within and outside Singapore. We have since published extensively using data from this study mainly on the prevalence and risk factors associated with mental illnesses. The study not only contributed to the field of psychiatric epidemiology and health service research but also helped in raising awareness about mental illnesses, treatment gaps and other issues like comorbidity, quality of life, and not to forget positive mental health. I see my largest achievement to date as the establishment of the programme of mental health policy studies with a close knit team of researchers across disciplines and with the capacity to carry out large scale population-based studies.

Main Research Project:  
Brain white matter neurobiology  
underlying major psychoses



**Adj. A/ Prof Sim Kang**  
Senior Consultant, Department of  
General Psychiatry 1  
Director, Education  
Deputy Director, Research Division

This research seeks to harness the technological advances in neuroimaging, genetic/genomic platforms as well as converging imaging-genetic paradigms to better understand the neural substrates underlying psychosis. We found various implicated cortical, subcortical white matter nodes and commissural tracts in psychoses as well as their association with genome-wide supported psychosis vulnerability genes. This may potentially allow us to track such white matter brain changes over time and their response to extant treatment.

**About the Researcher**

My interest in research in psychiatry was piqued early in training at IMH/TTSH when I found that patients with psychotic spectrum conditions often have comorbid psychiatric symptoms. Looking into the literature led me to understand that the prevalence of comorbid depression, obsessive-compulsive symptoms, and substance use can be substantial and that more needs to be done to understand the clinical situation in our local patients due to its impact on treatment outcomes. In our earlier studies, we found a substantial rate of such psychiatric comorbidities in patients with psychotic disorders, which are associated with poorer quality of life and worse prospective outcomes especially in symptomatology and insight, hence warranting early identification and management.

I have also been involved in an international collaborative initiative to study the pharmaco-epidemiology of psychotropic prescription patterns in Asia, which started with six countries (Hong Kong SAR, China, Taiwan, Korea, Japan and Singapore) initially but has since expanded to 10 (adding Malaysia, India, Thailand and Indonesia). The several continuing waves of studies with international colleagues under this initiative that has no funds impressed upon me the importance of forging friendship, collaboration, and having passion and fun in psychiatric research.

I am driven to understand the causes of major psychoses because of my clinical experience. In the midst of either in- or out-patient clinical consultations, families often ask me why their loved ones develop the psychoses that they do. As Aristotle once said, "hope is a waking dream". One of the hopes and dreams that I held during my training years was to better assess the underlying neurobiology of these conditions which can translate to a better understanding of major psychoses and with the potential for better intervention strategies.

Main Research Project:  
Childhood neurobehavioural disorders,  
risks and interventions



**Adj. A/ Prof  
Daniel Fung Shuen Sheng**

Senior Consultant, Department of  
Child & Adolescent Psychiatry  
Chairman, Medical Board

My initial work was focused on selective mutism in which I created a treatment programme and evaluated its effectiveness. I also set up a psychoeducational service which evolved to the present Neurobehavioural clinic with an emphasis on Autism and Attention Deficit Hyperactivity Disorder (ADHD). Supplement and social skills interventions (SASSI) was a clinical trial that was part of the development of ADHD services, in particular, in helping children with anger-related issues. I also started to develop an anger management programme that formed the social skills training part of SASSI and transferred the training into a digital game based format. As a result, I have pursued my interest in Serious Games, a new genre of games that have health purposes other than entertainment. Alongside this is a Brain Computer Interface training programme (in the form of a serious game) to improve attention in children with ADHD which is another large-scale randomised controlled trial.

The SASSI study is a large-scale, randomised, double-blind, placebo-controlled clinical trial (RCT) funded by an Individual Research Grant (IRG) from the National Medical Research Council (NMRC). It is the first in Singapore to examine whether Omega-3 supplementation and social skills training in combination is more effective than either approach alone in alleviating aggression and improving attention of children with hyperactivity and conduct problems. For this study, children aged 7 to 16 were recruited. All were supplemented for a period of six months with either Omega-3 filled soft-gel capsules (1,000mg daily dosage; 600mg of eicosapentaenoic acid [EPA] and 400mg of docosahexaenoic acid [DHA]), or placebo capsules (high content of oleic sunflower oil with a tinge of fishy taste). Manualised group social skills intervention was administered to half the participants. All parents of the participants also received monthly consultation with a clinician on the management of their child's symptoms and standardised parenting sessions (treatment as usual). The outcomes are still being analysed but research output so far has been two journal publications, two in preparation, 13 presentations at conferences, an anger management manual and a parenting workbook. The programme also provided training for three post docs and one doctoral student.

**About the Researcher**

I have been involved in over 20 research grants and was a PI in several NMRC-funded grants. I have co-authored over 70 peer reviewed research papers, more than 25 books and 10 book chapters.

I am a firm believer in the concept that all clinicians should have a scientific approach to their work so that treatment and interventions are evidence-based. I also believe that the present gold standard of using RCT can limit the access to healthcare services because of resource issues in terms of professional manpower and costs. A more enlightened approach is to look at scalable interventions that are population-based, meaning either prevention or early intervention.

I am exploring other clinical areas where research can bridge potential gaps. One of my current interests is in serious games and how they help in mental health disorders in youths. I also hope to develop an evidence base for the delivery of a population-based mental health programme for the young.

Main Research Theme:  
First episode psychosis



**Adj. A/ Prof Swapna Verma**

Senior Consultant  
and Chief, Department of  
Early Psychosis Intervention  
Chief, Department of General Psychiatry 1

Studies show that people suffer from mental illness for a period of time before they are diagnosed and treated. My research in this area seeks to address underlying attitudes and perceptions of the illness, and how the sufferers cope prior to their diagnosis and treatment, and especially the first episode of their psychosis. This is further expanded to seeking means for early intervention for the sufferers, their treatments and coping methods.

**About the Researcher**

I became keenly interested in research when I signed up for a two-year research elective during my residency training in Psychiatry at Baylor College of Medicine in Houston, Texas. After moving to Singapore, I joined the Department of Early Psychosis Intervention and was placed in charge of the research programme for the Department. We set up a clinical database that tracked patient outcomes at regular intervals from baseline up to a period of two to three years. This database has yielded several important studies in patients in first-episode psychosis including symptomatic and functional recovery, rate and predictors of service disengagement, and quality of life. I was also successful in securing a number of competitive grants from the various funding bodies in Singapore to conduct brain imaging and examine auto-immune markers in young patients with psychosis. We continue to investigate, through a series of studies, the risk factors as well as treatments for metabolic risk factors in patients with first episode psychosis. A testament to our research work has been the World Health Organization Award in Research in Health Promotion given to our team in 2006. Our team also won the inaugural NMRC research team award in 2009.

Main Research Theme:  
Translational and Clinical Research  
in Psychosis



**Dr Jimmy Lee Chee Keong**  
Consultant and Deputy Chief,  
Department of General  
Psychiatry 1 /  
Research Division

The first theme is translational and focuses on biological and cognitive subtypes in psychosis. The second is clinical and looks at pressing clinical issues such as cardio-metabolic risks and the development of treatment resistance in schizophrenia.

The translational theme harnesses different methodologies, from molecular to imaging and behavioural modalities, to dissect and refine the heterogeneous nature of psychiatric disorders.

Treatment resistance in schizophrenia is an under-researched topic globally. This project seeks to deepen our understanding of psychopharmacology in the context of addressing treatment resistance, and study this pharmacological subtype in greater detail.

Cardio-metabolic risk is elevated in patients with schizophrenia and accounts for a significant proportion of the premature mortality. We seek to identify locally relevant risk factors with a view to implementing clinical strategies to modify this risk.

About the Researcher

My interest in research began after my clinical interactions with patients led me to question clinical practices and ponder if more could be done. Through my research studies, I provide pertinent information to my research participants and I hope my findings will have a longer-term impact on patient care.

I was awarded the NHG Clinician Leadership in Research Programme and completed it with distinction in 2008. I was awarded an NRF-MOH Healthcare Research Scholarship in 2008 and graduated in 2010 with a Master of Clinical Investigation from the Yong Loo Lin School of Medicine at National University of Singapore. My research has won awards from the Schizophrenia International Research Society and the Singapore Health and Biomedical Congress, and has been featured in the local print media. I have held competitive research grants at cluster and national level, and I am currently supported by the NMRC Transition Award.

Main Research Project:  
Cognitive Training for ADHD



**Dr Lim Choon Guan**  
Consultant and Deputy Chief,  
Department of Child &  
Adolescent Psychiatry

A Randomised Controlled Trial of a Brain-Computer Interface Based Intervention for the Treatment of ADHD (BCI); and An fMRI Study on Children with ADHD Undergoing Brain-Computer Interface Based Training Programme

The Brain-Computer Interface (BCI) is a large-scale, randomized controlled trial (RCT). Led by Principal Investigator, Dr Lim Choon Guan of the Department of Child and Adolescent Psychiatry, the BCI technology was adapted as a novel alternative treatment for ADHD in children. The study aims to recruit a total of 160 children aged between 6 and 12. In addition to the more rigorous study design, a small sample from this group would also undergo fMRI scanning to determine any structural changes in the brain after treatment, adding to the validity of the trial. This foray into the use of BCI technology in the clinical field is a budding one. We have definitely seen for ourselves the rewarding effects BCI has had on our ADHD participants and hope to learn how to better harness this novel and innovative approach in treatment.

About the Researcher

It was during my first paediatric posting that I became curious about attention deficit hyperactivity disorder (ADHD) and embarked on two studies to understand more about the condition. Weekends and after-work hours were spent on clinical assessments, home visits and ploughing through case notes. These projects were supported by small grants from the hospital.

In 2007, with my supervisor Dr Daniel Fung's encouragement, I signed up for the inaugural NHG-NUS Clinician Leadership in Research Programme. My project investigated the use of a brain-computer interface (BCI)-based programme to treat ADHD, and was a collaboration with Duke-NUS and A\*STAR. The project was supported by the Small Innovative Grant (SIG) from NHG. For the first time, I hired a research associate to help as a therapist with the project. Our involvement with the BCI intervention has proven to be a long-term one as we are now into our seventh year! We published our two pilot trials and along the way and we have filed for a joint patent with our collaborators. I had also obtained a New Investigator Grant from NMRC to support a brain-imaging study to understand how the intervention affects the brain.

Main Research Theme:  
Aspects of autism



**Dr Sung Min**  
Senior Consultant,  
Department of Child and  
Adolescent Psychiatry

Autism is a neurodevelopmental disorder characterised by difficulties in social communication and a pattern of repetitive stereotyped behaviours. My studies on autism seek to integrate our clinical setting of mental health disorders in autism with research in terms of diagnosis, parent support, intervention and delivery of services. We also work collaboratively with basic scientists to investigate genetic, neurological and other biological aspects of autism .

About the Researcher

I started off in 2006 focusing on developing a specialised clinical service for children with autism spectrum disorders. My then Department Head Dr Daniel Fung suggested that I go for a clinical trial along those lines, looking into the role of Cognitive Behavioural Therapy in the treatment of anxiety in high-functioning children with autism spectrum disorders. As I had support from a research-oriented colleague working with me on the clinical service then, we decided to give this project a try. We were fortunate in securing a grant for our project and thus embarked on this exciting journey.

Research for me has been moving in-sync with work done at our clinic on autism spectrum disorders. From a clinical perspective, we have developed a service specialising in good assessment and diagnostic practices and pharmacological, psychological and behavioural management strategies. Our research work has followed these directions such as looking into diagnostic/screening tools, Robot Assisted Social Skills interventions and Omega-3 Supplementation. We have also established collaborations with partners in areas such as in Genetics, QEEG and Neuroimaging techniques.

Main Research Theme:  
Managing addiction, treatment and recovery



**Adj. Asst Prof Guo Song**  
Senior Consultant,  
National Addictions  
Management Service

My main areas of research are addiction treatment, addiction management and recovery. My interests also include exploring a combination of traditional Chinese acupuncture and routine Cognitive Behaviour Therapy for addictive disorders. I am the programme director of the National Addictions Management Service. Acupuncture Clinic for addictions, a Health Services Development Programme (HSDP) by the Ministry of Health (MOH) that commenced in August 2013.

About the Researcher

I am a senior consultant psychiatrist and the head of research at NAMS, IMH, with a joint position as adjunct assistant professor at Duke-NUS Graduate Medical School. I hold a PhD in Psychopharmacology and have been practicing in Addictions Psychiatry since 1990, including serving as the director of the National Drug Dependence Treatment Centre, Beijing (2003-2004). Since heading the NAMS research team, I have published five addiction papers in various international journals.

Prior to working in Singapore, I was involved in conducting clinical trials and genetic research in China and was Principal Investigator of a genetics study on nicotine dependence titled Pharmacogenomic Study of Smoking Cessation Treatment with Nicotine Sublingual Tablets. I am currently the Principal Investigator for both the double-blind Randomised Controlled Trial (RCT) of Lofexidine versus Diazepam in the management of opioid withdrawal syndrome during inpatient detoxification in Singapore, and in understanding the epigenetic mechanisms behind pathological gambling and its links with substance addiction. While studying medicine in Beijing, I had opportunities to see many patients in the treatment centre and prison and interacted with their family members. I realised that addiction disorders need to be studied in depth from the scientific perspective and that patients with addiction require more care and treatment, as their recovery will have a positive impact not only on themselves, but to the community at large. Since then, I have been focusing on understanding and treating this special and often overlooked population. With my position as head of the NAMS inpatient team, I am able to implement best practice in giving the addicted population a conducive environment for treatment. With the zero drug tolerance policy in Singapore, providing a conducive and safe environment for the local population to seek treatment has proven to be a challenging yet fulfilling experience. My belief in the holistic approach to treating patients has expanded to include a combination of routine medical and psychological treatment with traditional Chinese acupuncture to improve addiction treatment outcomes.

Main Research Theme:  
Early trauma and psychiatric disorders



**Dr Attilio Rapisarda**  
Senior Research Fellow,  
Research Division

After graduating in Clinical Psychology and Child Psychotherapy in Italy, I started working in the field of Neuroimaging as a PhD student. After my PhD, I moved to Singapore and here at IMH I was involved in a large study on the cognitive abilities of people diagnosed with schizophrenia.

More recently, I became interested in the impact that parenting and child trauma may have on the development of psychiatric disorders. Specifically, I apply epigenetic methods to investigate how parenting and traumatic experiences may affect the genetic expression of certain proteins that are involved in brain development. I strongly believe that in the near future, such methods will help to elucidate how diet, physical exercise, sleep and early emotional environment shape our personality and psychiatric risks.

We have definitely seen for ourselves the rewarding effects BCI has had on our ADHD participants and expect only greater feats from this novel and innovative treatment alternative.

**About the Researcher**

I am currently a Senior Research Fellow at the Institute of Mental Health and Course Coordinator of the Brain & Behaviour module at the Duke-NUS Graduate Medical School.

I have a background in Clinical Psychology and Neuroimaging and here at IMH I developed an expertise in the neuropsychology of schizophrenia. I like research, and I like teaching and training even more. My research production is currently focused on the norming of neuropsychological tests on psychiatric populations.

I am also developing expertise in psychiatric epigenetics with specific reference to early traumatic experiences and parental bonding.

Main Research Theme:  
Positive mental health and eldercare



**Janhavi Vaingankar**  
Senior Manager,  
Research Division

I have a longstanding interest in areas of mental health research and have contributed to the development of mental health policy studies at the Institute. Since 2009, on completing a Master of Science in Epidemiology from the University of London, I have been involved in designing and developing population-wide studies for estimating prevalence and risk factors for mental disorders in the adult and elderly populations in Singapore. As a Co-Investigator on the Singapore Mental Health Study (2010) and Well-being of the Singapore Elderly study (2013), I have advanced my career into national mental health survey research and published a number of articles based on the study findings.

My interests also centre on mixed methods study design, the biggest application of which was the development of the Positive Mental Health instrument that combined qualitative and quantitative inquiry into scale development and validation of the tool that measures six aspects of mental health. At present, as part of my commitment to establishing the relationship between mental illness and well-being, I am undertaking a study to estimate the level of positive mental health among people with serious mental illnesses such as major depressive disorder and schizophrenia.

Collectively through these studies, I hope to understand the scale and impact of mental illnesses among individuals and their families, and encourage a research culture that places high importance on methodology, healthcare service and policy relevant research.

**About the Researcher**

I am a researcher and a project manager, and consider these roles to be interrelated and adjunctive aspects of my profession. While my research interests focus on qualitative inquiry, epidemiology and mental health, my managerial skills ensure efficient project outcomes and resource management. My deep appreciation for philosophies of epistemology (to understand), ontology (to study the real nature of society) and methodology (to combine and apply best methods of inquiry) is my motivation for research.

Main Research Theme:  
Neuroplasticity in psychiatry



**Dr Ho New Fei**  
Research Fellow,  
Research Division

I am interested in understanding the role of neuroplasticity in psychiatric disorders. The brain changes its connections and neuronal production in response to various experiences. I use in vivo neuroimaging tools such as structural and functional magnetic resonance imaging (MRI) and neuropsychological assessments to study negative neuroplasticity which is thought to underlie many cognitive-behavioural abnormalities found in mental illnesses. I am interested in finding out whether positive neuroplasticity, such as cognitive and physical training, can be harnessed to address the cognitive and emotional deficits in mental disorders.

**About the Researcher**

I received my Ph.D. in Pharmacology (NUS), and did my postdoctoral training in the Psychiatric Neuroimaging Program at Massachusetts General Hospital/Harvard Medical School. I am currently based at the Research Division in IMH and I hold a visiting fellow position at Duke-NUS Graduate Medical School. I am also a house tutor at the Lee Kong Chian School of Medicine.

Main Research Theme:  
Statistical analysis and meaningful interpretation of research data



**Dr Edimansyah Abdin**  
Senior Biostatistician,  
Research Division

My research interests involve the application of statistical methods for the analysis of complex survey data, psychometric testing of mental health instruments and health services research.

**About the Researcher**

I am a senior biostatistician at the Research Division at the Institute of Mental Health. I joined the Institute of Mental Health's Research Division as a research fellow in August 2008 after I earned my PhD from Universiti Sains Malaysia (USM).

Since 2008 I have been supporting the Division in the Singapore Mental Health Study (SMHS), which yielded a rich body of information on the prevalence of mental disorders and the co-occurrence of physical disorders of the adult resident population in the community. As part of the SMHS, I was also involved with the development and validation of an instrument to measure the positive mental health of Singapore residents. I am currently engaged with the Well-Being of the Singapore Elderly (WISE) Study, and the Mind Matters study. These studies will provide national estimates of disorders among the elderly and mental health literacy respectively. My work is primarily concerned with how data from survey projects is managed, analysed and interpreted meaningfully. This involves data monitoring, cleaning, checking, application of statistical techniques and modelling, and the reporting of research findings. I also provide statistical consultation to other IMH colleagues for their own research. I have been motivated to continue pursuing mental health policy research, with a focus on the epidemiology of common mental disorders and the development of mental health instruments in Singapore.

Main Research Theme:  
Cognitive genetics



**Max Lam**  
Research Psychologist,  
Research Division

I started my research career with the Research Division at IMH in October 2008. I was trained as a neuropsychological and clinical evaluator in the Translational and Clinical Flagship Program in Psychosis. Neuropsychological assessment has been one of the key tools to elucidate cognitive deficits in individuals with psychosis, which had been shown to be a key characteristic of the illness — a feature which makes schizophrenia a debilitating illness. As cognitive processes are intimately linked to neuropsychiatric disorders, one of the ways to understand the pathogenesis of these illnesses is to study biological substrates underlying cognitive mechanisms.

During this time, I was awarded the NMRC Research Fellowship to pursue a PhD, where the key thrust of the research dissertation was to examine DNA from the entire human genome and investigate how genes might affect cognitive performance both in healthy individuals and patients suffering from schizophrenia. As neuropsychological performance is a complex trait and its use in Singapore was not well known when my research first began, I embarked on a series of studies to demonstrate how the normal Singapore population would perform on these cognitive tasks, how education might have affected cognitive performance, and more recently showed that executive function, attention, speed, and general intelligence are cognitive domains that contribute to performance on standard neuropsychological tests.

**About the Researcher**

I joined the Research Division in October 2008 as part of the team that administered the clinical and neuropsychological assessment to the study subjects on the Translational and Clinical Research Programme in Psychosis. During this time, large-scale genetic studies that scanned the entire human genome were emerging which promised the discovery of potential biological markers that were precursors to schizophrenia. It was in this same period that I became intrigued with the role of cognition in schizophrenia. Researchers were calling for more objective measures to describe schizophrenia over and above clinical diagnosis and judgment of the illness. Cognition became a candidate measure as its deficits are a core characteristic of schizophrenia.

Main Research Theme:  
Emotion regulation in children with anxiety



**Nikki Lim-Ashworth**  
Psychologist, Child &  
Adolescent Psychiatry

Cognitive behavioural therapy (CBT) is utilised widely in the treatment of childhood anxiety. An estimated one-third of the children who received CBT continue to present with anxious symptomology upon completion of treatment. Empirical evidence now suggests that maladaptive emotion regulation (ER) is central to the development and maintenance of anxiety. Despite this, few CBT programmes include an emotional regulatory framework.

The overarching objective of my research would be to evaluate the efficacy of an ER-based treatment component when incorporated onto a pre-existing CBT intervention for reducing symptoms of anxiety in children. This represents a unique approach in addressing ER deficits in childhood anxiety by incorporating an ER-based treatment component onto pre-existing CBT programmes. This can eventually be employed to address ER deficits in other clinical population and/or as a preventive programme.

**About the Researcher**

As a psychologist fresh out of post-graduate training five years ago, research was not part of my grand scheme of things. Serendipity, however, brought me to the Research Unit of the Department of Child & Adolescent Psychiatry (DCAP). I was part of a randomised controlled trial examining the effects of Omega-3 supplementation in children with attention and conduct problems. The dynamic nature of research work kept me absorbed and intrigued. Very quickly, I recognised that the path of a geeky clinician who dabbles in research is where I wanted to venture!

Main Research Theme:  
Psychological intervention, autism spectrum disorders, the mental health of children



**Goh Tze Jui**  
Senior Psychologist,  
Child & Adolescent  
Psychiatry

I have been actively involved in several research projects focusing on children with Autism Spectrum Disorders such as assessment, intervention, etiology and services. These projects are funded by a variety of funding bodies such as NMRC, NTU-NHG Innovation Grant, NHG HOMER grant and industry sponsors. The results of some of these studies have resulted in the implementation of intervention programmes such as a manualised Cognitive-Behavioural Therapy program for children with ASD in addition to conference presentations and workshops and journal publications. These projects have also led to the development of a pilot database and a community outreach programme under the Neuro-Behavioural Clinic, Child Guidance Clinic.

**About the Researcher**

I began my research work when I joined IMH in 2006 as a Research Assistant. From executing and running research studies, I learned the ropes of doing research from the ground up and began to engage in publishing, proposal and grant writing with the support and trust of my mentor, Dr Sung Min and then Head of Department of Child and Adolescent Psychiatry, Dr Daniel Fung. They were supportive and encouraging when I attempted to develop and implement research ideas and initiate projects. Under their guidance, I was invited to be a reviewer for a distinguished peer-reviewed journal and they were also indispensable to the National Medical Research Council Fellowship Award I received in 2011 to pursue my doctorate studies.

Main Research Theme:  
Education, mental health and gerontology



**Poh Chee Lien**  
Assistant Director,  
Nursing (Education)  
Nursing Training  
Department

**About the Researcher**

I am the Assistant Director, Nursing (Education) and Head of the Nursing Training Department at the Institute of Mental Health, Singapore. I am also an Evidence-Based Practice Clinical Fellow at the Joanna Briggs Institute, Adelaide, Australia. I hold a Master of Health Science (Education) from the University of Sydney, Australia; a Bachelor of Nursing from the University of Sydney, Australia; an Advanced Diploma in Nursing (Gerontology) from Nanyang Polytechnic, Singapore; and a Diploma in Nursing from Nanyang Polytechnic, Singapore. I am a member of the National Healthcare Group Domain Specific Review Board (Domain A) and the IMH Clinical Review Committee. I have been the Principal Investigator of several research studies and have published and presented in the local and international arena. I have also served as an Adjunct Lecturer in Ngee Ann Polytechnic, Nanyang Polytechnic, Nanyang Technological University/National Institute of Education and at the University of Adelaide. In addition, I have been a research supervisor to Bachelor (Hons) and Masters students.

I began my career as a Staff Nurse in an acute psychiatric ward at the Institute of Mental Health, after graduating from Nanyang Polytechnic with a Diploma in Nursing Programme in 1995 (I was in the pioneer cohort). After having worked with patients and their family members in the ward for a couple of years, I craved for more nursing-related knowledge to better serve them. I went on to pursue my Bachelor of Nursing with the University of Sydney in Australia in 1999 and was sponsored by my institution to pursue my Advanced Diploma in Nursing with Nanyang Polytechnic in 2000.

Upon returning from my studies, in the midst of my ward duties, I was given ample opportunity to participate in various nursing research projects. It was through these challenges that I discovered my interest in teaching and research. In 2004, I was offered an educator role in the Nursing Training Department. The new role gave me more opportunity to participate in, and lead, more challenging nursing research projects that translate findings into clinical areas through work instructions to enhance nursing practices and optimise patient outcomes. Besides these, the new role also gave me the opportunity to strengthen our research partnership with academic institutions, and groom the next generation of nurse researchers.

# ADMINISTRATORS



**Jenny Tay**  
Assistant Manager

I have been with the Research Division since 2007, starting off as a Research Assistant and progressing to my present appointment as Assistant Manager. I am actively involved in coordinating clinical trials and research projects, and in 2009, I was accredited as a Certified Clinical Research Professionals (CCRP) by the Society of Clinical Research Associates (SOCRA). I was also a member of the NHG Study Coordinator Faculty, Singapore from 2007 to 2010. The Faculty is involved in implementing training programmes for Study Coordinators and creating a platform for Study Coordinators to discuss trial related issues and to share expertise. After that, I took on an administrative role handling the contractual and budgetary aspects of research grants and other research related matters.

Research administration has not been given its due importance and credit in the whole research enterprise — it oils the research machinery and keeps it going. Research administrators like myself play a crucial role in providing the necessary support to the IMH Clinical Research Committee (CRC), the Clinical Trial Unit (CTU) and all investigators in IMH who undertake clinical research projects or trials. I work closely with various ethics committees, funding agencies, stakeholders and researchers.

At present, I am also the project manager for the National Medical Research Council (NMRC) Centre Grant which was awarded in 2013. Looking forward, the Research Division will continue to support and provide platforms to cultivate researchers in IMH. We are building on and improving existing skills in providing research consultations to IMH staff via one-to-one clinics and workshops and facilitating clinical trials and complex collaborative agreements. Lastly, I hope this will help to build a critical mass of researchers within our institute and further expand our network of collaborators that cut across different scientific disciplines.



**Kulvinder Kaur D/O  
Ranjit Singh**  
Administrative Assistant

I joined the Research Division in 2009. As Secretary to the IMH Clinical Research Committee (CRC), I play a crucial role in supporting the Chairperson, the Vice Chairperson, and its members. This requires careful coordination, meticulous attention to detail, and teamwork. I ensure that all procedures and documentation are in place to facilitate the Committee's review of IMH research related projects.

I also add value to the Division and IMH research as a whole by way of managing the administration of grants and the collation of research indicators for various stakeholders. My in-depth understanding of administrative procedures has also given me great opportunities to work with, and support, new and experienced researchers in their research studies. I am happy to be part of a team that is dedicated to provide strong administrative support to strive for greater research findings in IMH.

This book was made possible with the kind contributions of IMH researchers.

We also appreciate everyone who has influenced the content and the production of this chronicle of our research efforts.

Thank you.

June 2015

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