



# SPECIAL DELIVERY

NEWS FROM SINGAPORE'S ACADEMIC TERTIARY HOSPITAL FOR WOMEN AND CHILDREN

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## UNDER ONE ROOF



*KK Women's and Children's Hospital leads one-stop centre providing integrated health, social and educational support for vulnerable mothers and children*

Report by Rebecca Tse



President Tony Tan Keng Yam with (from left) A/Prof Winnie Goh, Senior Consultant, Department of Child Development, KKH; Dr Koh Poh Koon, Ang Mo Kio Grassroots Advisor; Mr Richard Magnus, Chairman, Temasek Cares; parents and children at the launch of the Temasek Cares KIDS 0-3 Centre.

Located at Block 643, Ang Mo Kio Avenue 5, the Temasek Cares Kids Integrated Development Service Centre (KIDS 0-3 Centre) is the latest development in the KIDS 0-3 programme – a community-based integrated system of care launched in 2014 to optimise the developmental potential of children from vulnerable families, starting from pregnancy up to the age of three years.

The KIDS 0-3 programme is a collaboration between KK Women's and Children's Hospital (KKH), Temasek Cares and AMKFSC Community Services Ltd (AMKFSC).

The centre is supported by a team of health and social care professionals from KKH and AMKFSC, and aims to provide mothers and children from vulnerable families a welcoming and conducive environment to access antenatal, mother and child health, parenting and social support.

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Mothers and their children will be able to access community support and health services at the centre – such as child developmental assessments and play sessions – as well as education on antenatal and postnatal care, nutrition and baby care, and guidance on parental involvement in child learning and development.

“This (KIDS 0-3) programme has given me a lot of support and guidance on how to take care of a baby, before and after giving birth,”

says Mdm Azlina Abdul Rahim, 34, an administrative officer who received support for pre- and postnatal care.

“I was given a lot of guidance and was loaned aids, like a breast pump, to help with feeding the baby.”

Families are also provided with psychosocial support where needed, such as guidance on financial assistance, employment and mental health services that are available in the community.

## SUPPORTING OPTIMAL CHILD DEVELOPMENT WITHIN THE COMMUNITY



Parents and toddlers attending a facilitated playgroup session at the KIDS 0-3 Centre.

“The KIDS 0-3 Centre is another key milestone in our ongoing efforts to reach out to the community,” says Professor Chay Oh Moh, Senior Consultant, Department of Paediatrics and Campus Director, Education Office, KKH, who is also Programme Director of the KIDS 0-3 programme.

“With the creation of a conducive environment for learning activities for both mother and child, and a meeting place for mothers and families to come together to socialise and support each other, we look forward to strengthened community support for vulnerable families and optimal growth and developmental outcomes for every child.”

More than 110 families currently enrolled in the KIDS 0-3 programme are expected to benefit from the new centre. These families come from Ang Mo Kio, Bishan, Toa Payoh and surrounding areas. The programme also receives referrals from government agencies, health agencies, child development and education centres, voluntary welfare organisations, family service centres and neighbourhood organisations.

The pilot KIDS 0-3 programme expects to serve a total of 600 mothers and children over a three-year period, with funding of about \$8.7 million from Temasek Cares.



### MOTHER AND CHILD SERVICES AT THE KIDS 0-3 CENTRE

#### A Child Services

- Child developmental assessments
- Breastfeeding support and weaning
- Early stimulation play activities
- Facilitated playgroup sessions

#### B Parenting Support

- Antenatal classes
- Workshops on parenting, nutrition and parental involvement in child learning and development
- Consultations with paediatricians, KIDS nurses and community health visitors
- Information and guidance on budgeting and resources for improving skills for employment

#### C Community Building

- Get-togethers, social networking and platform for building friendships among families, staff and volunteers
- Organised activities and learning trips to places of interest
- Information and guidance on community agencies and organisations that provide support to families

# DRIVING SUSTAINABLE, EFFECTIVE HEALTHCARE

*KKH O&G handbook highly commended at recent British Medical Association Book Awards*

Report by Editorial Team

A practical obstetrics and gynaecology handbook, produced by clinicians at KK Women's and Children's Hospital (KKH), has been highly commended by the British Medical Association (BMA) – the professional body for doctors in the United Kingdom.

The 'Practical Obstetrics and Gynaecology Handbook: for O&G Clinicians and General Practitioners 2nd Ed' took home the "highly commendable" award at the BMA Book Awards in September 2015. The handbook received outstanding reviews:

"This is a useful reference book and a fantastic educational resource. Multiple papers and NICE\* guidelines have been condensed and summarised into a readable format with beautiful illustrations, photos and diagrams.

I will recommend this book to local GP trainees. Clear photos; useful diagrams and a good combination of medical and practical advice."

## BMA book reviewer

The BMA Book Awards, which take place annually in London, recognise outstanding contributions to medical literature. This year, the BMA received a total of 630 entries from various medical specialities internationally, including Oxford and Cambridge Universities.

All award entries undergo a rigorous appraisal process by a panel of doctors and educators; evaluation criteria include accuracy, currency, originality, book production quality and relevance. Past awardees have included Kumar and Clark's 'Clinical Medicine, Macleod's Clinical Diagnosis', Thalange's 'Essentials of Paediatrics' and Netter's 'Anatomy'.

\* The National Institute for Health and Care Excellence



## ABOUT THE AUTHORS

The 'Practical Obstetrics and Gynaecology Handbook: for O&G Clinicians and General Practitioners 2nd Ed' lists KKH clinicians – Associate Professor Tan Thiam Chye, Dr Tan Kim Teng and Dr Sonali Chonkar – amongst its authors.

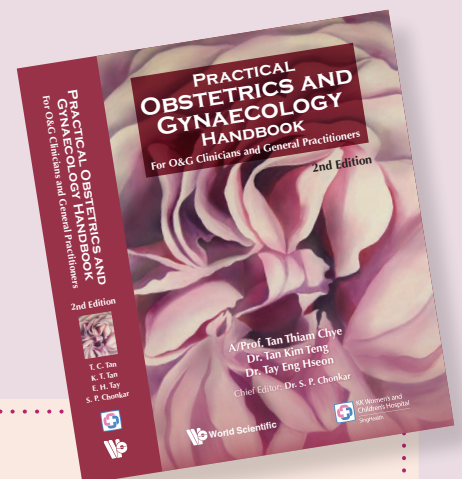
Assoc Prof Tan is Head and Senior Consultant, Inpatient Service, Department of Obstetrics & Gynaecology, and Deputy Campus Director, Education Office; Dr Tan Kim Teng is Senior Consultant, Division of Obstetrics & Gynaecology; and Dr Sonali Chonkar is Staff Physician, Department of Obstetrics & Gynaecology, KKH.

"Medical education is crucial to drive sustainable and effective healthcare for patients," says Assoc Prof Tan, the book's lead author. "KKH has a unique role to advance the succession of knowledge and values to the next generation of healthcare professionals. As an Academic Medical Centre for women's and children's health, it is our mandate to continually create, publish and disseminate medical knowledge."

## ABOUT THE BOOK

The 'Practical Obstetrics and Gynaecology Handbook: for O&G Clinicians and General Practitioners 2nd Ed' offers first-hand advice on the practical management of O&G conditions, including referral criteria and guidelines, and patient counselling.

It also explores notable recent advances in the field of O&G, including the latest research on the human papilloma virus vaccine and contraceptives, as well as International Federation of Obstetricians and Gynaecologists (FIGO) recommendations for abnormal uterine bleeding and many green-top guidelines from the Royal College of Obstetricians and Gynaecologists (RCOG).



For more information about the 'Practical Obstetrics and Gynaecology Handbook – for O&G Clinicians and General Practitioners (2nd Edition)', please contact Cynthia at **+65 9668 1004**.



# BEYOND SEXUAL HEALTH IN MENOPAUSE

*Dr Ang Seng Bin, Head & Consultant Family Physician, Family Medicine Service, KK Women's and Children's Hospital*

According to the World Health Organization, sexual health is defined as “a state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence. For sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected and fulfilled.” (WHO, 2006a)

In the absence of other causes of menstrual disturbances, menopause is defined as the permanent cessation of menstrual period for 12 consecutive months. In Singapore, the average age of natural menopause is 49 years.

Alongside improved standards of healthcare in Singapore, the life expectancy for a woman has risen from 81.6 years in 2003 to 84.6 years in 2013. This means the average Singaporean woman will spend close to a third of her life after menopause. However, a general assumption persists that post-menopause, women are no longer sexually active. Hence, few healthcare professionals and patients proactively discuss sexual function and the management of sexual health in menopause.

## RESEARCH SHOWS 50% OF WOMEN EXPERIENCE SEXUAL DYSFUNCTION POST-MENOPAUSE

A 2010 study by Lindau on women in the United States noted that sexual partnership, frequency of sexual activity, a good quality sex life and interest in sex are positively associated with health among middle-aged and older adults in the United States<sup>1</sup>.

The study reported that, of women who lived with their partners, 79.7 percent aged 55 to 64 and 59 percent aged 65 to 74 remained sexually active. However, only about half reported a good quality of sexual life.

Studies done in Japan and China also showed the prevalence of sexual dysfunction in more than 50 percent of post-menopausal women<sup>2</sup>. In a 2015 pilot study by KKH involving 329 women aged 21 to 60, researchers noted that more than 50 percent of the women surveyed had experienced sexual dysfunction in the areas of desire, arousal, lubrication, orgasm and satisfaction.



## MEANINGFUL DISCUSSION KEY TO EDUCATING PATIENTS ON SEXUAL HEALTH

In Singapore, women who experience sexual health issues tend not to voluntarily reveal these to their healthcare providers. In a study in 1999, 71 percent of patients believed that their doctors would dismiss any mention of sexual concerns and 68 percent believed that their doctors would be embarrassed by any discussion of sexual problems<sup>2</sup>. A conducive and welcoming environment is essential to facilitate a meaningful discussion of sexual health issues. To that end, the PLISSIT model can be a useful tool to help healthcare providers assess and guide patients in managing the physical, emotional, mental and social aspects of their sexual health:

**PERMISSION** Seek the patient's permission to discuss issues and concerns regarding their state of well-being in relation to sexuality now or in the future. This includes giving the patient permission to continue normal sexual behaviours.

**LIMITED INFORMATION** Provide factual information to educate the patient about well-being in relation to sexuality and dispel myths (e.g., It is common for women to experience vaginal dryness after menopause. This can be treated with topical estrogen).

**SPECIFIC SUGGESTIONS** Provide specific suggestions directly related to a particular problem (e.g., the use of lubrication during sex to ease vaginal dryness).

**INTENSIVE TREATMENT** Provide highly individualised therapy for more complex disease

Post-menopause, women generally experience a decline in estrogen levels, leading to vaginal atrophy and dryness. Dyspareunia can subsequently result, which could affect their sexual function and thus their sexual health. Table 1 details factors that could affect sexual function in a menopausal woman. These treatable causes should be considered when evaluating sexual health in a woman.

The KKH multidisciplinary clinic for sexual health adopts a multidisciplinary approach in addressing issues in women's intimacy, women's sexual function and dysfunction in couples, couples seeking infertility treatment, women who have undergone gynaecological cancer treatments and women with menopause.

**TABLE 1. FACTORS AFFECTING SEXUAL FUNCTION IN MENOPAUSE**

PREDISPOSING FACTORS		
Biological	<ul style="list-style-type: none"> <li>Gynaecological or surgical treatment</li> <li>Primary ovarian insufficiency</li> <li>Endometriosis</li> </ul>	<ul style="list-style-type: none"> <li>Iatrogenic menopause (bilateral oophorectomy, radiotherapy)</li> <li>Endocrine factors</li> </ul>
Psychosexual	<ul style="list-style-type: none"> <li>Previous sexual history</li> <li>Body image</li> <li>Personality traits</li> </ul>	<ul style="list-style-type: none"> <li>History of sexual abuse and/or violence</li> <li>Affective disorders</li> <li>Coping strategies</li> </ul>
Social	<ul style="list-style-type: none"> <li>Ethnic, cultural and/or religious expectations and constraints</li> </ul>	<ul style="list-style-type: none"> <li>Support and network</li> </ul>
PRECIPITATING FACTORS		
Biological	<ul style="list-style-type: none"> <li>Age at menopause</li> <li>Biological VS iatrogenic menopause</li> <li>Extent and severity of menopausal symptoms</li> </ul>	<ul style="list-style-type: none"> <li>Current disorders</li> <li>Substance abuse</li> </ul>
Psychosexual	<ul style="list-style-type: none"> <li>Relationship</li> <li>Sexual experience</li> </ul>	<ul style="list-style-type: none"> <li>Affective disorders</li> <li>Loss of partner</li> </ul>
Social	<ul style="list-style-type: none"> <li>Life stressors (e.g., divorce, separation, partner infidelity)</li> <li>Loss or death of close kin</li> </ul>	<ul style="list-style-type: none"> <li>Lack of access to medical treatment</li> <li>Economic difficulties</li> </ul>
PERPETUATING FACTORS		
Biological	<ul style="list-style-type: none"> <li>Changes secondary to menopause (hormonal, vascular, muscular, neurological, immunological)</li> <li>Contraindications to hormone therapy</li> </ul>	<ul style="list-style-type: none"> <li>Inadequacy of hormone therapy</li> <li>Pharmacological treatments</li> <li>Substance abuse</li> </ul>
Psychosexual	<ul style="list-style-type: none"> <li>Perception of menopause changes</li> <li>Loss of sexual confidence</li> <li>Affective disorder</li> </ul>	<ul style="list-style-type: none"> <li>Distress (personal, emotional, occupational, partner)</li> <li>Partner's general health or sexual problems</li> </ul>
Social	<ul style="list-style-type: none"> <li>Lack of access to care</li> <li>Partner's general health or sexual problems</li> </ul>	<ul style="list-style-type: none"> <li>Interpersonal conflict</li> </ul>

Adapted from the European Society for Sexual Medicine Manual of Sexual Medicine 2nd edition 2015

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- NAMS Menopause Practice. A clinician's guide. 5th Edition.



Dr Ang Seng Bin graduated with an MBBS from National University of Singapore and completed a Masters of Medicine in Family Medicine. He further pursued and completed the Fellowship Programme at the College of Family Physicians, Singapore. Dr Ang currently heads the Family Medicine Service and the Menopause Unit at KKH. He is also active in his roles as Adjunct Assistant Professor, Duke-NUS Graduate Medical School, and Associate Program Director, SingHealth Residency Family Medicine Program.

# ADDRESSING PUBLIC PERCEPTION ON ECZEMA CARE

*Dr Liew Hui Min, Associate Consultant, Dermatology Service; and Dr Rajeshwar Rao, Senior Consultant, Allergy Service, KK Women's and Children's Hospital*

Atopic dermatitis, or eczema, is common amongst young children, adolescents and adults. The chronic inflammatory skin condition presents as itchy, red, scaly bumps and patches on the skin, and affects up to 20 percent of children in Singapore. In moderate-to-severe cases, the affected person's quality of life can be severely impacted, leading to psychosocial, family and relationship issues.

Triggers for eczema can be multi-factorial, and vary between individuals. Common triggers include hot and humid weather, haze, house dust mites, skin infection, mosquito bites and stress.

In 2015, the Dermatology Service at KK Women's and Children's Hospital (KKH) has seen an average of eight-to-10 new patients with eczema daily – an increase from five-to-eight in 2014. Possible reasons for this include the increasing prevalence and severity of eczema, and greater public awareness of good treatment options.

While the majority of eczema cases are mild-to-moderate, an increasing number of paediatric patients are presenting with moderate-to-severe eczema. Apart from the severe skin symptoms, many of these patients experience significant psychosocial issues, leading to poor quality of life, low self-esteem, school bullying and poor school performance. Parental anxiety is also common in this group of patients.

A significant proportion of these children and their parents suffer in isolation, leading often to anxiety and depression. Both parent and child require more time and counselling during clinic consultation not only to come to terms with the skin condition, but also to inform their understanding of the disease, and address concerns regarding treatment side effects, issues in the family and school, their psychosocial well-being, and the financial burden of a chronic condition.

The healthcare provider should take pains to reassure patients and parents that eczema can be controlled through an accurate understanding of the nature of this chronic disease, avoiding trigger factors and complying with medical advice and treatments.



## PERCEIVED FOOD ALLERGIES

There is a prevalent perception among parents that eczema is commonly related to foods, or a food allergy. Many patients with severe eczema may indeed also have associated allergies, in particular house dust mite allergy, allergic rhinitis, allergic conjunctivitis and food allergies. Food allergies can occur especially in infants and younger children with severe eczema, although they are less common in older children and adolescent patients.

However, many parents may mistakenly attribute their child's eczema to a perceived food allergy, and restrict the child's diet – which can lead to malnutrition, and poor weight gain and development. The diagnosis of true food allergies requires good history-taking, diagnostic tests and controlled food challenge tests administered by an allergist.

If a food allergy is suspected in a child with eczema, the patient should be referred to seek advice from the dermatologist or allergist. However, patients and their parents should be advised not to neglect the eczema treatment plan recommended by their doctors.



## STEROID PHOBIA

Steroid phobia – an inappropriate amount of fear of using topical corticosteroids - is a very common problem among parents of paediatric patients with eczema, and can lead to sub-optimal treatment of the condition. Some international studies have shown that about 30 percent of patients and parents have steroid phobia, leading to inadequate use of steroids to treat eczema<sup>1</sup>. This fear has not been helped by news coverage of the high incidence of steroid abuse in professional sport, as well as non-scientific-proven testimonials circulating on social media.

When patients discontinue using prescribed topical steroids too early, or apply these too sparingly, the eczema is not optimally controlled, and flares quickly when the patient is again exposed to triggers such as dust or stress. Poorly-controlled eczema can cause an affected child to have a very poor quality of life, repeated hospital admissions, poor sleep, slow growth and worsening school performance.

One of the concerns commonly raised by parents with steroid phobia is that the child requires a stronger topical steroid after using a lower-strength steroid for some time. This is because a child's skin naturally thickens as they grow. Additionally, chronic scratching from

poorly-controlled eczema can also lead to thickening of the skin. Hence, stronger topical steroids are required to penetrate the skin to treat the inflammation.

Some patients may explore alternative medications, or doctor-hop, requesting for oral steroids whenever they experience an eczema flare. The uncontrolled, unsupervised use of steroids can cause severe skin and systemic side effects. Repeated oral courses of steroids can also lead to problems such as poor growth, high blood pressure, diabetes, stretch marks and cataracts, among other problems.

Together with a daily skin moisturising regimen, topical steroids – when used in the right strength, amount and duration – are still the mainstay of eczema treatment.

“The controlled, supervised, intermittent use of topical steroids is very effective and safe in the treatment of eczema, and has been scientifically proven to reduce and control eczema. This leads to an improved quality of life for patients.”



## VACCINATIONS

How vaccinations can trigger eczema is not fully known, but it is thought to be similar to how infections (such as upper respiratory tract infections) trigger eczema – by boosting the immune system, which then goes on to increase inflammation in eczematous skin.

However, it is not recommended that children with eczema avoid vaccinations, as the benefits far outweigh the complications. Parents should be warned to anticipate the flare of eczema post-vaccination, and advised to increase the use of prescribed medication during the flare.

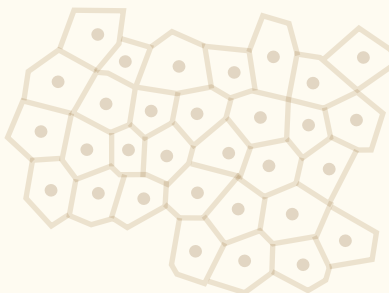


## KKH MULTI-DISCIPLINARY CHRONIC ECZEMA CLINIC

The Dermatology Service at KKH pursues holistic management and education for patients and their caregivers, involving consultation with a multidisciplinary team of healthcare professionals over several clinic visits. Patients are also provided with a written eczema management plan, as well as a patient information leaflet to help them understand and remember their treatment plans.

The Multi-disciplinary Chronic Eczema Clinic, established in 2014, provides one-stop care for patients with complex and severe cases of eczema, who need more specialised support. The clinic is run twice-monthly, supported by a team comprising paediatric dermatologists, pediatric allergists, dermatology nurses, psychologists, medical social workers, dietitians and art therapists.

The one-stop clinic enables both the patient and their caregiver to be reviewed by all the relevant specialists within one day to minimise visits to the hospital. Additionally, this multidisciplinary, holistic approach enables patients to access integrated medical, healthcare, emotional and psychosocial support, as well as dietary and financial counselling where required. It has proven to be of particular benefit to patients with chronic and severe eczema.



### REFER A PATIENT TO THE KKH MULTIDISCIPLINARY CHRONIC ECZEMA CLINIC

General practitioners and paediatricians who wish to refer a patient to the KKH Multidisciplinary Chronic Eczema Clinic can contact KKH at **+65 6294 4050**. Patients will be required to undergo review by the Dermatology Service before referral can be made.

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Dr Liew Hui Min graduated from University of Dundee in Scotland and completed medical training in the United Kingdom, obtaining her Membership of the Royal College of Physicians in 2007. She further pursued training in dermatology at King's College Hospital in London. Dr Liew's current subspecialty interests include paediatric and women's dermatology.



Dr Rajeshwar Rao trained in paediatric allergy and respiratory medicine in Southampton, United Kingdom, and thereafter was a consultant paediatrician specialising in respiratory and allergic conditions in Poole, UK, for 13 years. Dr Rao's main clinical and research interests include food and drug allergies.

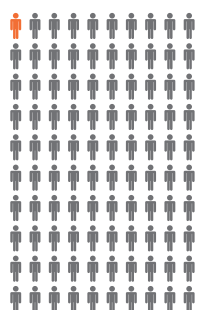
# AUTISM: THE CASE FOR EARLY DETECTION

*Why 'watch and wait' may not be the best approach to autism*

*Dr Padmini Yeleswarapu, Consultant; and Dr Mae Wong, Consultant, Department of Child Development, KK Women's and Children's Hospital*

Autism Spectrum Disorder (ASD) is a complex neurodevelopmental disorder characterised by persistent deficits in social communication and interaction across multiple contexts, and restricted, repetitive patterns of behaviours, interests or activities. These symptoms are often present in the early developmental period of the child, causing clinically significant impairment in the child's functioning.

The Diagnostic and Statistical Manual for Mental Disorders Fifth Edition (DSM-5), published in 2013, no longer lists ASD subtypes. All individuals who meet diagnostic criteria are diagnosed with 'autism spectrum disorder', with specifications for severity and level of language or cognitive ability.



In Singapore it is estimated that:

**ASD AFFECTS  
1 IN 100  
INDIVIDUALS**

## PREVALENCE

In Singapore, it is estimated that ASD affects 1 in 100 individuals. The Department of Child Development at KK Women's and Children's Hospital (KKH) sees approximately 3,000 new cases of preschool-aged children with developmental or behavioural problems every year, of which 500 are diagnosed with ASD.

In the United States, data from the Centers for Disease Control and Prevention (CDC) Autism and Developmental Disabilities Monitoring (ADDM) Network in 2010 show a prevalence rate of ASD in about one in 68 children, up from one in 150 a decade ago.

## AETIOLOGY

The exact cause of ASD is unknown. Both genetic and environmental factors may play a role via complex gene-environment interactions<sup>1</sup>. Some of the risk factors for ASD include having a parent or sibling with ASD; antenatal infections; exposure to medications such as valproate and thalidomide; prematurity and low birth weight. Genetic conditions associated with increased risk of ASD include fragile X syndrome, Down syndrome, Rett syndrome and tuberous sclerosis.

## THE IMPORTANCE OF EARLY RECOGNITION

Early intervention for ASD is associated with better functional outcomes and quality of life for the child and their family<sup>2,3</sup>. All healthcare providers for young children should recognise both early and later warning signs of ASD, and refer children as soon as possible for further evaluation and intervention. Early intervention is key and the 'watch and wait' approach should be avoided.

ASD is often diagnosed after the age of three years, although caregivers usually raise concerns for possible ASD from 15 to 22 months. This delay is often due to a passive or reassuring approach taken by healthcare providers<sup>4</sup>. Yet, early warning signs of ASD can be recognised by a trained professional before two years<sup>5</sup>. These are outlined in Table 1.

**TABLE 1. EARLY WARNING SIGNS FOR ASD**

AGE	CONCERNS
<b>12 months</b>	<ul style="list-style-type: none"> <li>No cooing or reciprocative babbling</li> <li>No use of social gestures (e.g., waving, pointing)</li> </ul>
<b>18 months</b>	<ul style="list-style-type: none"> <li>No shared enjoyment (e.g., bringing toys of interest to show caregivers)</li> <li>No meaningful single words</li> </ul>
<b>24 months</b>	<ul style="list-style-type: none"> <li>No spontaneous (non-echoed) two-word phrases</li> <li>No interest in other children</li> </ul>
<b>At any age</b>	<ul style="list-style-type: none"> <li>Poor eye contact or no response to name</li> <li>Loss of language, words or social skills (may indicate regressive ASD)</li> </ul>

Approximately 25 to 30 percent of children develop regressive ASD, with normal development until 12 to 24 months, followed by regression in language milestones and/or social development. Hence, it is vital to maintain regular developmental screening appointments with preschool-aged children.

The American Academy of Pediatrics recommends screening for ASD during regular well-child doctor visits at 18 and 24 or 30 months, using the M-CHAT (Modified Checklist for Autism in Toddlers), which has been validated for use in our local population<sup>6</sup>.

Other signs of ASD in children are indicated in Table 2.



## TABLE 2. SIGNS OF ASD IN CHILDREN

- Deficits in social-emotional reciprocity (e.g., an abnormal social approach, reduced sharing of interests and emotions, difficulties in initiating or responding to social interactions)
- Atypical language difficulties in verbal children, such as:
  - Speaking in an odd prosody (often a Western accent or robotic intonation)
  - Immediate echolalia (repetition of words/phrases)
  - Delayed echolalia or scripted phrase use (e.g., speaking using phrases copied from TV shows)
  - Pronoun confusion (using 'you' when meaning 'I', or referring to self by own name instead)
  - Difficulty in maintaining conversations or always talking about their own topic of interest
  - Having a very literal understanding of what is said (difficulties understanding jokes, metaphors etc.)
- Repetitive play which lacks imagination
- Highly restricted or fixated interests (e.g., obsessions or preoccupations with unusual items or topics)
- Difficulties with adapting to changes
- Stereotypic behaviours (e.g., lining up or spinning objects) and motor stereotypies (e.g., hand flapping, unusual hand mannerisms)
- Hyper or hypo-reactivity to sensory input (e.g., sensory aversion to loud noises, excessive smelling or touching of objects, apparent indifference to pain or temperature).

Pre-schoolers with ASD who are verbal may be missed initially, as caregivers may not realise that atypical language difficulties in verbal children is a feature of ASD. In those with good language and cognitive abilities, social difficulties may not be obvious until social demands increase; hence they may present late in

school age or only be diagnosed in adulthood.

Useful screening tools for children more than four years include the Social Communication Questionnaire (SCQ) and Autism Spectrum Screening Questionnaire (ASSQ).

## DIAGNOSIS AND MANAGEMENT

The diagnosis of ASD warrants a comprehensive evaluation, including early developmental history; information of the child's functioning across different settings, such as home and preschool; and clinical assessment and observation. Any child with suspected ASD should be referred immediately to:

### For preschool-aged children

- Department of Child Development, KKH
- Child Development Unit at Jurong Medical Centre, National University Hospital (NUH)

### For school-aged children

- Developmental & Behavioural Paediatric Services, NUH Children's Clinic
- Child Guidance Clinics, Institute of Mental Health

Interventions for ASD include occupational therapy, speech-language therapy, the Picture Exchange Communication System (PECS), the TEACCH (Treatment and Education of Autistic and Related Communication Handicapped Children) programme, as well as the Relationship Development Intervention (RDI) and Applied Behavioural Analysis (ABA).

Continued psycho-education and support for caregivers is paramount to aiding the child's improvement. At KKH, caregivers can learn coping and management strategies through the Signposts for Building Better Behaviours programme, and access home-based family support facilitation through the SAFE (Support Autism through Family Empowerment) programme funded by Temasek Cares.

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Dr Padmini Yeleswarapu graduated from Mahatma Gandhi Institute of Medical Sciences, Nagpur University, India, and completed higher specialist training in community paediatrics in the United Kingdom. Dr Padmini's areas of interest include autism spectrum disorder and neurodisability.



Dr Mae Wong leads autism services at KKH, and is certified in the Bayleys and Griffiths Developmental Assessments, as well as the ADOS and ADI-R diagnostic tools for autism. Her subspecialty interests include autism spectrum disorder, the developmental outcomes of premature infants, and neonatal pain. Dr Wong is also an Adjunct Assistant Professor with the Duke-NUS Graduate Medical School, Singapore, and a Senior Clinical Lecturer with the NUS Yong Loo Lin School of Medicine, Singapore.

# HEALING CHILD TRAUMA IN OUR COMMUNITY

Mercy Teo-Tan, Senior Medical Social Worker, Psychosocial Trauma Support Service, KK Women's and Children's Hospital



It is a known fact that child trauma tends to remain under-detected in a community. In Singapore, a significant number of children and adolescents experience potentially traumatic events such as domestic violence, physical/sexual abuse, assault and bullying. A large proportion of these cases may not present in the healthcare setting, as the injuries sustained may not be physically apparent. Yet, emotional wounds can be deep while eluding observation.

In 2012, the KKH team met with community partners, such as schools and family services centres, to better understand the needs of children and adolescents in the community.

It was found that, while many of the counselling professionals spoken to encountered children and adolescents who were affected by traumatic experiences, they did not feel adequately equipped to assess paediatric trauma symptoms and intervene through evidence-based practice. Additionally, many of them did not know how to screen and identify trauma symptoms in their community settings.

## STRENGTHENING A COMMUNITY TO HELP ITS CHILDREN

It is prudent for communities to be equipped and prepared to help children and adolescents affected by major traumatic events, such as exposure to earthquakes, terrorist attacks or tsunamis. Hence, it was timely and needful when KK Women's and Children's Hospital (KKH) collaborated with Temasek Cares to launch the Temasek Cares KITS (Kids In Tough Situations) Programme in 2014.

The KITS Programme aims to train community counselling professionals to provide trauma-focused cognitive behavioural therapy (TF-CBT), which is an evidence-based, gold-standard approach used worldwide. Through this programme, these counselling professionals are also equipped to conduct community outreach activities to raise awareness of trauma and its effects on children and adolescents.

The pilot programme started in January 2014, and by October 2015 had trained 70 therapists from schools and family services centres in TF-CBT. Training involves the therapists attending a basic course in TF-CBT, before receiving monthly clinical group supervision by the KKH team. While training is intensive – which is necessary

to produce a high standard and quality of trauma care – I am continually inspired by the passion, dedication and belief that we share in unity with the community counselling professionals. They exhibit increased competency and confidence, and the learning journey has been very enriching, meaningful and fruitful.

In parallel, our community outreach activities to raise awareness about psychological trauma have also reached out to more than 18,000 children, parents, professionals and members of the public, and more than 500 children and their families have benefited from the KITS Programme. Our research has so far indicated effectiveness in helping children cope with trauma reactions through the programme. Results showed that both children and parents reported significant improvements in post-traumatic distress symptoms.

Through this nationwide effort, I am greatly encouraged to see more children and adolescents being relieved from the pain of psychological trauma, and gaining resilience and hope about their future. In a world where challenges and traumatic events do occur, a community's preparedness and commitment to

helping our children cope psychologically and emotionally with trauma is crucial in helping them to recover and face the future with resilience.

COMMUNITY AWARENESS ACTIVITIES  
ON PSYCHOLOGICAL TRAUMA HAVE  
REACHED OUT TO

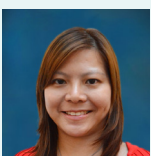
MORE THAN **18,000\***

CHILDREN, PARENTS, PROFESSIONALS  
AND MEMBERS OF THE PUBLIC

MORE THAN **500\***

CHILDREN AND FAMILIES HAVE BENEFITED  
FROM THE KITS PROGRAMME

\*Community outreach figures for the Temasek Cares KITS Programme as at October 2015.



Ms Mercy Teo-Tan is a registered social worker with a Masters of Social Work, and a certified counsellor trained in trauma-focused cognitive behavioural therapy. Involved in the Temasek Cares KITS (Kids In Tough Situations) Programme, Mercy supervises school and community counselling therapists, and is in charge of the programme's community outreach efforts. Mercy also has a special interest in working with parents, and is a certified practitioner of the Triple P – Positive Parenting Program.

# ROBOTIC MEDICATION SYSTEM SWEEPS SMART TECH AWARDS

Report by Editorial Team

A robotic medication management system at KK Women's and Children's Hospital (KKH) has swept this year's national awards for innovative information technology – clinching 'Best Innovative Use of Infocomm Technology (Public Sector)' at the Singapore Information Technology Federation (SiTF) Awards and 'Outstanding Information and Communication Technology (ICT) Innovation Award' at the HIMSS-Elsevier Digital Healthcare Awards.

## AUTOMATED MANAGEMENT SPEEDS MEDICINE DISPENSING, TRACEABILITY

The Outpatient Pharmacy Automation System (OPAS) is an integrated robotic solution that automates at least 90 percent of medication dispensing workflow – such as picking, packing and assembling medication, and tracking expiry dates and batch numbers.

'First-expiry-first-out' computerised programming enables quicker and more accurate inventory management, and also achieves medication traceability of 90 percent in the unlikely event of a drug recall.

### Reinforcing round-the-clock medicine safety

The OPAS, which is installed in KKH's 24-hour Emergency Pharmacy, enables the hospital to accurately and swiftly dispense a wide array of medicines around the clock, and provides an additional layer of medication safety.

"The majority of our paediatric patients require bottled medication. Given that our 24-hour Emergency Pharmacy serves the busiest A&E in Singapore, we handle about 1,350 to 1,800 bottles of medication each day," says Ms Irene Quay, Chief Pharmacist at KKH.

"The automation of labour-intensive tasks involved in medication management has reduced the potential for human error, and enabled our staff to dedicate more time to directly addressing patients' needs and performing safety checks."

## INNOVATIVE, PATENT-PENDING TECHNOLOGIES

The OPAS incorporates innovative, patent-pending technologies, such as a robotic Bottle Dispensing System (BDS), flag labelling and integration of the inpatient and outpatient medication systems.

### Radio frequency identification technology tracking

The robotic Bottle Dispensing System (BDS), in particular, is believed to be the world's first automated system. Using radio frequency identification (RFID) technology, the BDS is able to automatically dispense, label, track and deliver close to 100 percent of all bottled medications required at the Emergency Pharmacy.

### Tear- scratch- and water-resistant flag label

The system also features yet another industry first, an innovative flag label that enables patients to read the original medication labels on the bottles to reference drug facts and ingredients.

"The flag label was developed by Pharmacy staff following patients' feedback," shares Ms Quay. "Many patients had shared that when labels printed with their names and prescribed dosage were placed on bottles of medication, these prevented them from reading the original medication labels on the bottles to reference drug information."

Tear- scratch- and water-resistant, the label's unique design allows it to be easily unfastened to reveal the original label underneath. The label can then be easily refastened to the bottle.

"Since the new flag label was implemented, many patients have told us that they were impressed by the flag labels and have found it very practical."

The BDS was developed in collaboration with Integrated Health Information Systems, Getech Automation, Singapore Polytechnic, NCS Pte Ltd and the Agency for Science, Technology and Research (A\*STAR). The team had also assisted in the integration of the OPAS-IPAS (Inpatient Pharmacy Automation System) Interface. The entire project was fully funded by Ministry of Health, Singapore.



Improving medication safety - A tear-scratch - and water-resistant flag label for bottled medication.



# NEW RESEARCH PARTNERSHIP SEEKS BREAKTHROUGH IN CHILD TUMOURS

Report by Lisa Loh, Development Department, KK Women's and Children's Hospital

Brain and solid tumours are the second most common type group of cancers among children in Singapore today. To advance the care of childhood brain and solid tumours, a partnership between KK Women's and Children's Hospital (KKH), Viva Foundation for Children with Cancer (VIVA), and St. Jude Children's Research Hospital, USA (St. Jude), has led to the establishment of the VIVA-KKH Paediatric Brain and Solid Tumour Programme.

Based on a framework and scope developed by KKH, this phased three-year

pilot project will leverage on the core strength of KKH in treating brain and solid tumours while St. Jude will lend its knowledge and expertise to the programme.

VIVA is helping to raise funding for the programme. As of August 2015, a total of \$4.2 million has been raised by generous donations through VIVA. Its priority now is the search for like-minded partners to help contribute to the remaining funding of \$4 million towards the programme.

The VIVA-KKH Paediatric Brain and Solid Tumour Programme aims to enhance the depth and breadth of cancer care and research activities in three major areas:

1

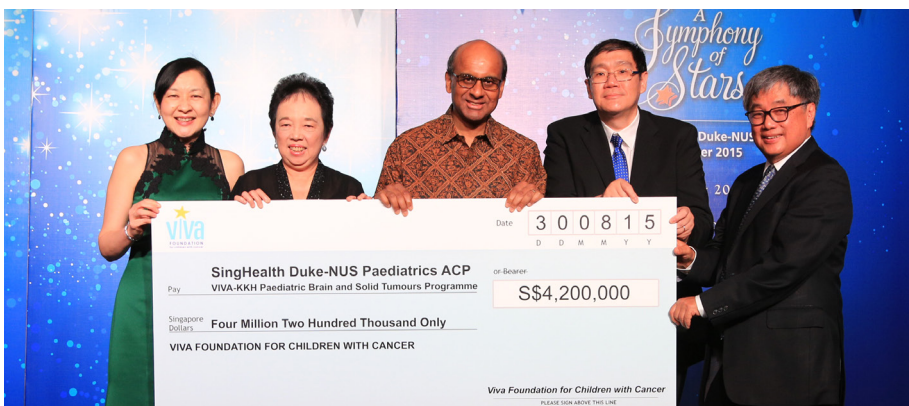
Improving clinical care for childhood brain and solid cancers - the creation of a team of dedicated solid tumour and cancer case managers coordinating multidisciplinary care and research

2

Bench to bedside translational clinical research for childhood brain and solid cancers - the establishment of a molecular pathology programme centered at KKH to undergird existing translational research efforts

3

Prevention, control and population-based science - strengthening the manpower for the Singapore Childhood Cancer Registry by appointing dedicated data managers for brain and solid tumours, and supportive care. This also includes the education and training of nurses and doctors specialising in brain and solid tumours.



A cheque of \$4.2 million raised by VIVA for the VIVA-KKH Paediatric Brain and Solid Tumour Programme was presented by Madam Kay Kuok, Vice Chairman, VIVA Foundation for Children with Cancer (second from left) to Prof Ivy Ng, Group Chief Executive Officer, SingHealth (left), Deputy Prime Minister Tharman Shanmugaratnam (centre), A/Prof Ng Kee Chong, Chairman, Division of Medicine, KKH (second from right) and Prof Soo Khee Chee, Deputy Group Chief Executive Officer, SingHealth (right).

For more information about supporting the VIVA-KKH Paediatric Brain and Solid Tumour Programme, please contact Christine at +65 6394 2329 or email [development@kkh.com.sg](mailto:development@kkh.com.sg).

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