



# Hong Kong Psychogeriatric Association Newsletter

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## MESSAGE FROM THE NEWSLETTER COMMITTEE

Welcome to the June 2019 issue. The driving capacity of older adult (especially as the driver for commercial vehicle) is under the spotlight after a series of road traffic tragedies. We have invited two experts in driving assessment from Castle Peak Hospital to review the local situation and make suggestions with reference to overseas countries. Apart from physical health, an important cognitive element for driving is the executive function. Dr. Karen Reimers from the International Psychogeriatric Association will share her expertise on different screening instruments for testing executive function. Please do not miss the photos of the 20th anniversary HKPGA Annual Scientific Symposium cum Tripartite Psychogeriatric Meeting. Lastly, you can make your submission via [info@hkpga.org](mailto:info@hkpga.org) and visit [www.hkpga.org](http://www.hkpga.org) for archives of the HKPGA newsletters.

## DRIVING OF OLDER ADULTS IN HONG KONG

**CHAN Wai Lan and HO Chiu Yeung**

**Department of Occupational Therapy, Castle Peak Hospital**

### *Introduction*

The world's population is aging, Hong Kong has no exception. We have even hit the highest of life expectancy in the world (Centre of Health Protection, 2017; The World Bank, 2015). While in traditional Chinese belief, older adults would be regarded as an inactive group, it is surprising to note that there is a significant amount of older adults with age over 60 hold a full driving license.

December 2017	Age			
	≥60	≥65	≥70	All age
No. of driving license holder	372,700	171,900	44,600	2,259,023
Population of the age group (mid-year population 2017)	1,736,800	1,214,900	802,300	7,391,700
% of driving license holder in the age group	21.5%	14.2%	5.6%	30.6%
% of driving license holder in overall	16.5%	7.6%	2%	-

Table 1: Statistics of driving license holder at different age group (Census and Statistics Department, 2018; Transport Department, 2018)

In 2017, there was a total of 0.37 million driving license holders were aged 60 or above, which accounted for 16.5% of the total full driving license holders in Hong Kong. With reference to the 1.75 million population of the same age group, every one out of five people aged 60 or above would be a holder of the full driving license. Moreover, it was interesting to note that 328,100 of full driving license holders were aged 60 to 69, which was 14.5% of the overall driving license holders. What does this tell? Are the older adults still driving?

### *Why the older adults still drive?*

Driving is one of the crucial skills in instrumental activities of daily living that promotes one's community mobility and independence (Occupational Therapy Australia, 2015). In many countries, driving is a community living skill and driving a car represents freedom and independence. Capable to drive helps older adults to feel more satisfied and in control of their lives. When they experience age-related physical and mental changes, driving can become more difficult and dangerous. This is because driving requires them to interact with a rapidly changing environment outside the car, which poses high demand on visual, cognitive (thinking, judgement, reasoning, remembering) and physical aspects. When they are forced to give up driving due to physical and cognitive decline, lifestyle changes would be implied.



However, in an urban city like Hong Kong, driving might not be a community living skill, instead would be regarded as a specific work skill for one's employment. Might this imply that older adults who drive in Hong Kong are for work, not just for community mobility? In reality, it is not uncommon to find older adults as commercial vehicle drivers of taxi, mini-bus and coach.

### ***Aging vs driving performance***

Will aging affect driving performance? Evidence indicated that driving performance is not highly associated with age, but is highly associated with age-related degenerative changes in cognitive (Shanmugaratnam, Kass, & Arruda, 2010), visual (Dukic Willstrand, Broberg, & Selander, 2016; Owsley, 2011) and neuro-motor functions (Hwa-Kyung & Ho-Cheol, 2012; Lacherez, Wood, Anstey, & Lord, 2014; Makishita & Matsunaga, 2008). Increased complex medical conditions and the side effect of medication or adverse impact of common polypharmacy (Road Safety Council, 2012; Walsh, Gier, Christopherson, & Verstraete, 2004) have also been proven to impede the safe driving of the older adults.

<b>Possible domains that affect driving performance in the older drivers</b>		
<b>Degeneration related to normal aging</b>	Vision	- Visual Acuity - Spatial sensitivity
	Cognition	- Visual processing Speed - Memory - Divided attention - Planning and judgment - Executive functions
	Neuro-motor	- Reaction time
<b>Medical conditions that affect driving</b>		- Cataract - Macular degeneration - Diabetes - Depression - Osteoarthritis - Dementia
<b>Pharmacological side effect</b>		- Blurred vision - Drowsiness - Impaired concentration & judgement - Slowing of reaction

Table 2: Possible domains that affect driving performance in older adults



It is consistently found that the older drivers presented with difficulties in handling complex road conditions (Doroudgar et al., 2017). They are significantly slower in hazard reaction, associated with more traffic lights violation and more collision, slower in driving and less able to maintain a constant distance behind a car as compared with young drivers (Andrews & Westerman, 2012; Ebnali et al., 2016; Rusch et al., 2016; Thompson et al., 2012).

### What is the concern?

The accident rate of older drivers had raised public concerns on their driving fitness. Overseas studies reported the accident rate of older drivers could be double as compared with the middle-aged adult group when driving the same mileage of distance (Bayam, Liebowitz, & Agresti, 2005; Bélanger, Gagnon, & Yamin, 2010; Ebnali et al., 2016; Rusch et al., 2016).

In Hong Kong, an increasing trend of vehicle accidents has been noted in the past 10 years (Transport Department, 2017). There has been a four-time surge (from 923 to 3,661) in the older age group (age 60 or above) from 2006 to 2016, while the young drivers (age 18 – 59) have maintained at around 19,000 accidents per year. (See figure 1).

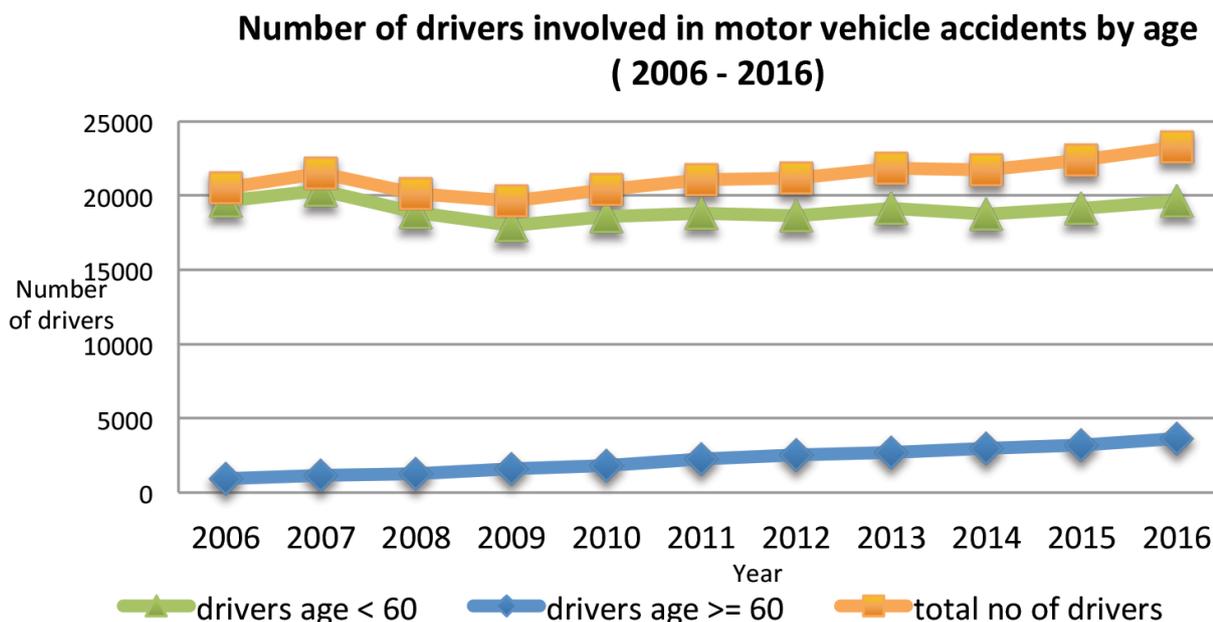


Figure 1: Number of motor vehicle drivers involved in accidents by ages from 2006 to 2016 (Transport Department, 2017)

The older drivers were involved in more accidents related to commercial vehicle than non-commercial vehicle in Hong Kong, which possessed threat to safety of the public (see Figure 2). The recent tragic traffic incident in Cheung Tsing Highway on 30 November 2018 also involved a 62-year old coach driver, who had ploughed his coach into the back of a stationary taxi, claimed five lives and 32 injured (Cheung, Clifford, & Su, 2018).

Figure showing the number of accidents by driver's age and vehicle class (2006 - 2016)

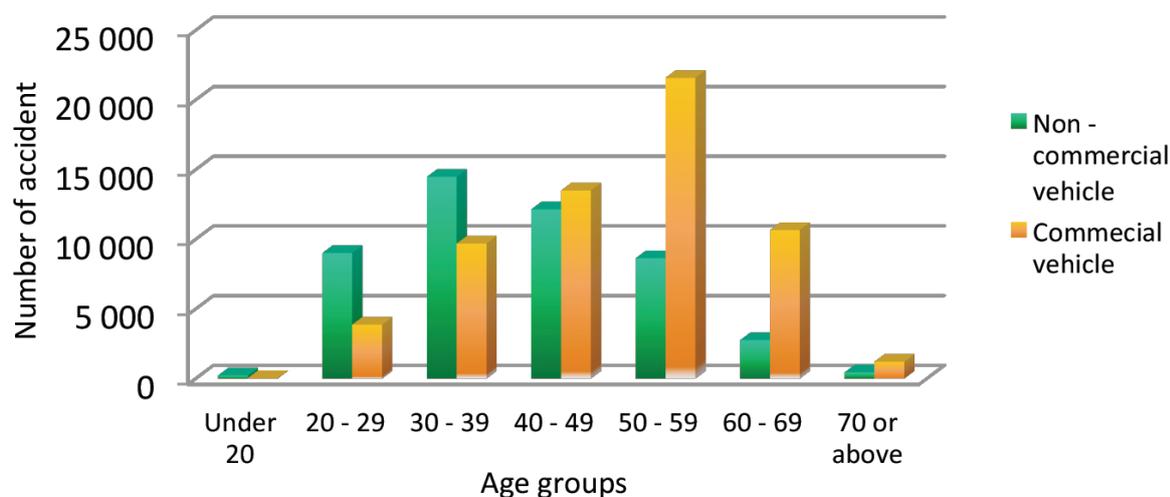


Figure 2: Number of accidents by driver's age and vehicle class (Transport Department, 2017)

\* Non-commercial vehicle: Private car and motor cycle

\*\* Commercial vehicle: Taxi, public light bus, public bus, light, medium, heavy good vehicles and articulated vehicle.

The health issues of public transport drivers, especially for those older drivers, had already raised public concern and was brought up to the Legislative Council for discussion (HKSAR, 2017). In recent few years, there were quite a number of public transport accidents leading to casualties, which were due to the onset of illness when driving. These drivers had an average age of 63.8. The concern was partially addressed by some of the franchised bus companies that had set clear health requirement of the bus captains. Regular health check by registered medical practitioner would arrange for drivers over 50 and driving duties would be suspended for those drivers failed to pass the health check. Bus captains have to pass the examinations (e.g. chest examination, eyesight, diabetes, blood pressure, urine test, etc.) before continuing their services. It was delighted to note that a relatively low accident rate was found in these bus drivers aged over 60 and the regular health check seemed an effective strategy. However, there is still no standardized health requirement of the other public transport drivers who are usually self-employed, such as taxi drivers or public light buses drivers. According to the traffic accidents statistics, older taxi drivers and public light bus drivers had higher accident rates among other drivers in the same age group and the older public light bus drivers had the highest accident rate among different age groups (see table 3). Mandatory regular health check might be the way out to ensure the health condition and safe driving of the older drivers and minimize vehicle accidents.



## Accident involvement rates<sup>^</sup> of motor vehicle drivers by age and selected class of motor vehicle 2016

(per 1 000 licensed drivers)

Age	Class of motor vehicle							
	Motor cycle	Private car	Taxi	Public light bus	Public bus	Light goods vehicle	Medium & heavy goods vehicles	All motor vehicles
Under 20	77.6	7.5	-	-	-	2.3	-	6.1
20 - 24	72.3	8.3	70.8	5.7	22.2	4.0	3.9	8.1
25 - 29	35.6	5.2	33.2	2.2	29.4	3.5	7.1	5.9
30 - 34	16.8	4.6	35.6	2.4	20.7	3.4	7.8	5.0
35 - 39	9.2	4.3	37.1	3.3	16.2	2.6	5.8	4.4
40 - 44	6.5	3.7	28.7	1.8	18.4	2.0	4.4	3.8
45 - 49	5.0	3.2	24.3	4.7	20.7	1.6	3.5	3.7
50 - 54	5.2	2.9	19.3	3.9	19.7	1.7	3.4	3.8
55 - 59	4.1	2.7	19.0	5.4	16.8	1.5	3.4	4.0
60 - 64	2.8	2.2	19.3	7.6	10.9	0.9	1.7	3.6
65 - 69	1.0	1.7	14.4	8.6	4.4	0.6	1.3	2.8
70 & over	1.2	2.7	16.3	12.2	1.6	0.3	0.8	3.2
Overall <sup>+</sup>	8.3	3.7	20.4	5.7	16.2	2.0	3.3	4.2

Notes: <sup>^</sup> Accident involvement rate of motor vehicle drivers refers to the number of drivers of the respective motor vehicle class involved in accident per 1000 licenced drivers of that vehicle class in the same age group. Number of licensed drivers by class of vehicle was as at 30.6.2016.

+ Including those motor vehicle drivers whose ages were unknown.

Table 3: Accident involvement rate of motor vehicles drivers by age and selected class of motor vehicle 2016 (Transport Department, 2017)

### How to evaluate fitness to drive in older adults?

In Hong Kong, the Transport Department is responsible for issuing driving license. License holders are requested to attend an examination to prove their medical fitness to drive under two conditions:

- i. The license holder is suffering from any disease or physical disability, or that may affect his/her driving of a vehicle.
- ii. The license holder is aged 70 or above.

The commissioner of Transport Department will issue, refuse or cancel a driving license based on the report on medical fitness to driver. To reduce the risk of driving related



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accidents and protect the best interest of the drivers, medical practitioners would make reference to various medical guidelines in determining medical fitness to drive (Community Rehabilitation Service Support Centre, 2017a, 2017b; National Highway Traffic Safety Administration, & American Association of Motor Vehicle Administrators, 2009). Given that the local guideline only states the medical standards for individual disease without mentioning any principles on driver assessment, some basic principles for driver assessment with reference to other guideline are advocated, i.e. functional approach, risk management, individual assessment and collection of best information (Road Safety BC, 2016). Medical practitioners are recommended to conduct any test and refer different professionals for detailed assessment such as optometrist for visual assessment, neurologist for neurological test or occupational therapist for driver assessment (Casey, Salinas, & Eckstrom, 2015) to collect best information for concluding the driving fitness and suitability to drive (Guo & Fang, 2013; Meuser, Berg-Weger, Carr, Shi, & Stewart, 2016; Vrkljan, Myers, Crizzle, Blanchard, & Marshall, 2013).

### ***Driver assessment in Hong Kong***

The driver assessment service for people with disabilities has been established in Hong Kong since 1995. It is a comprehensive functional assessment done by occupational therapist to determine one's driving ability or potential to drive safely and competently. It also provides suggestions on vehicle modification if necessary.

Driver assessment includes

- i. Off-road assessment:
  - a. Specific screening assessments on visual, physical, perceptual abilities, functional mobility related to driving ability.
  - b. Assess the ability to apply road laws.
  - c. Driving simulator is used to assess reaction time and driving skill in different simulated road conditions (Eramudugolla, Price, Chopra, Li, & Anstey, 2016; Hoffman & McDowd, 2010; Underwood, Crundall, & Chapman, 2011; Vardaki, Dickerson, Beratis, Yannis, & Papageorgiou, 2016; Veldstra, Bosker, de Waard, Ramaekers, & Brookhuis, 2015).
- ii. On road assessment:

One's driving performance is assessed in real road situation, especially for those who requires vehicle modification.

After completion of these assessments, Occupational therapist will then make comment on one's driving performance and highlight any permanent or temporary risk factors



which adversely impact on one's driving abilities. Training or vehicle modifications are also suggested if indicated. The assessment result can provide objective information on one's driving ability which facilitates the medical practitioner to identify at-risk drivers and suggests safety measures for minimizing driving related accidents. It would also enhance the insight of the drivers on their existing driving ability and guide them to formulate self-regulation strategies for minimizing the risks of driving related accidents, such as avoiding driving at peak hour, or decreasing frequency and distance of driving (Baldock, Mathias, McLean, & Berndt, 2006; Bergen et al., 2017; Charlton et al., 2006; Devlin & McGillivray, 2016).

Following the pattern of aging population, demand on assessing older adults' medical fitness to drive will be increased expectedly. In addition to the above-mentioned assessments, functional declines, medical problems and pharmacological side effects as well as the typical driving problems should be taken into account in driver assessment for older adults.

### *Driving safety in older adults*

Commercial vehicle drivers spend long hours on wheels and need to bear the responsibility of the safety of passengers and other road users. It would be particularly challenging when these drivers face age-related physical and mental changes. In many countries, specific policies have been imposed to ensure driving safety in older adults. In Singapore, vocational licenses of the private hire car drivers who reach the age of 50 have to attend bi-annually medical examination. When they reach the age of 65, they have to attend annual assessment (Land Transport Authority, 2017). Started from 2012, all taxi drivers in Singapore, who intend to continue their commercial driving beyond the age of 70, must sit for a detailed driver assessment, then annually after age of 73. The assessment comprises a medical examination, occupational therapist evaluation as well as an on-road driving test conducted by occupational therapist with the presence of driver instructor (Land Transport Authority, 2012). The age of taxi driver is also limited to 75.

While some franchised bus companies would conduct regular health checks for their drivers with age over 50 in Hong Kong, there still lack policy or specific law to identify at-risk older commercial vehicle drivers. In comparing with other developed countries, our policy development to address the driving safety issue in older adults is obviously behind. Mandatory comprehensive health checks and driver assessment for older commercial vehicle drivers would definitely be one of the possible suggestions to ensure driving safety in older adults.



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## CLINICAL ASSESSMENT OF EXECUTIVE FUNCTION IN OLDER PEOPLE PART 2: SCREENING TESTS

**Dr. Karen Reimers, MD, FRCPC; IPA Bulletin Assistant Editor, Around the World**

Executive function is an important domain of cognition, governing a person's ability to organize their lives, plan, and implement their plans. Part 1 of this series explained the concept of executive function, causes of executive function deficits, and what happens when executive function is impaired. This article identifies common clinical screening tests for executive function. The "best" executive function screening instrument depends on multiple factors including the clinical circumstances and the evaluation setting.

### ***Key highlights:***

- The "best" executive function screening instrument depends on multiple factors including the clinical circumstances and the evaluation setting.
- Despite its prevalent use, especially for people with dementia, the Mini-Mental Status Exam (MMSE) does not assess executive function impairment, requiring other tools to detect this important and complex range of cognitive, emotional and behavioral difficulties.
- Screening tests that include assessment of executive function in older people include the Montreal Cognitive Assessment (MOCA), St. Louis University Mental Status Examination (SLUMS), Clock Drawing Test (CDT), Frontal Assessment Battery (FAB), and Executive Interview (EXIT)

### ***Tests for Executive Function in Older People***

The gold standard for assessment of executive function is **traditional neuropsychological testing**, which offers the most detailed picture of an individual's cognition. Unfortunately, such testing is time consuming and requires specially trained personnel, advanced test material, and a formal setting. It is typically performed over an extended appointment lasting several hours, using comprehensive batteries and specialized tests for specific aspects of executive function such as response inhibition (Stroop Color/Word Interference Test), set shifting (Wisconsin Card Sorting Test), divided attention (Trail Making Part B), and productivity and flexibility (fluency tests).

Shorter screening tools can provide easier, reliable, and quicker measures of executive function that can be useful in initial or follow up clinical assessments, where time and resources are limited. A physician or other team member (e.g. therapist, nurse or social



worker) can use an executive function screening tool for initial executive function evaluation. If a problem in cognition is identified during the screening, additional physician evaluation and formal neuropsychological assessment can be arranged.

The popular **MMSE (Mini Mental State Examination)**, still the most-used assessment scale in dementia, does not assess executive function. The MMSE was primarily designed to test global cognitive function. It can be used to evaluate for delirium or dementia, screen for global cognitive impairment, estimate the severity of cognitive impairment, and to follow changes in an individual over time. Patients can have a normal MMSE score despite executive function impairment with severe functional limitations. The MMSE is no longer in the public domain and may be too costly for some settings.

Fortunately, there are other clinical tools in the public domain offering improved screening for executive function deficits, compared with the MMSE. The following executive function tests are widely available and can be quickly administered by a variety of disciplines.

The **MOCA (Montreal Cognitive Assessment)** was originally developed as a brief cognitive screening tool for detection of mild cognitive impairment (MCI), but has since become widely used in clinical and research settings, often supplanting the MMSE. It consists of number of separate tasks covering six different cognitive domains including executive function skills. While not a substitute for in-depth neuropsychological testing, the MOCA correlates well with more comprehensive formal neuropsychological testing.

The **SLUMS (St. Louis University Mental Status Examination)** was created as a screening tool for detecting mild cognitive impairment in a veteran population but is now used in several other patient populations. The SLUMS been shown to be superior to the Mini-Mental State Exam (MMSE) in the detection of early dementia, and comparable to the popular Montreal Cognitive Assessment (MOCA).



## Test

**CLOX** (Executive Clock Drawing Task),  
CDT (Clock Drawing Test)

**Mini-Cog** (Screening for Cognitive  
Impairment in Older Adults)

**Verbal fluency** (word list generation)

**MMSE** (Mini Mental State Examination)

**SLUMS** (St. Louis University Mental Status  
Examination)

**FAB** (Frontal Assessment Battery)

**MOCA** (Montreal Cognitive Assessment)

**EXIT25** (Executive Interview), **Quick EXIT**

**Formal neuropsychological testing**  
(Wisconsin Card Sorting Test, Stroop Color-  
Word Interference Test, Trail Making Test,  
and others)

## Strengths

Quick to administer (<5 min)

Quick to administer (<5 min)

Quick to administer (<5 min)

Quick to administer (<15 min)  
**Drawbacks:** Does not assess  
executive function Not in public  
domain

Quick to administer (<15 min)  
Correlates with more comprehensive  
testing

Quick to administer (<15 min)

Quick to administer (15-20 min)  
Correlates with more comprehensive  
testing

Quick to administer (EXIT25 15-20  
min, Quick EXIT 10 min)

Gold standard, provides most detailed  
information  
**Drawbacks:** Time consuming (hours)  
Costly Difficult to access May not  
be well tolerated by patients with  
comorbid medical or psychiatric  
conditions

If the above initial screening tests suggest deficits, it may be helpful to employ more specialized tests specifically developed to assess executive function. The **FAB (Frontal Assessment Battery)** is a brief tool that can be used at the bedside or in a clinic setting to assist in assessing executive function and discriminating between cortical and subcortical dementias. It tests abstraction, fluency, impulsivity and primitive reflexes. The **EXIT (Executive Interview) and Quick EXIT** are screening instruments for executive cognitive dysfunction in patients with mild dementia, both designed to be administered at the bedside by non-neuropsychiatrically trained personnel. EXIT scores correlate with neuropsychological and neuropsychiatric test batteries. They are simple to administer and use a single form as the only material required for the test, including instructions and scoring instructions.



**Strengths and Limitations of Tests that include assessment of Executive Function in Older People** In clinical practice, what constitutes the “best” screening instrument varies, depending upon the clinical circumstances, the needs of the clinician, and the instruments reviewed.

## **Conclusion**

In clinical practice, executive function screening tests can help clinicians identify cognitive impairment early, which is important since cognitive impairment often progresses to dementia eventually. Screening instruments can be used to establish a baseline, guide decisions regarding the need for further cognitive assessment, and monitor treatment.

Early identification of executive function deficits can help clinicians optimize the patient’s future function, safety, and emotional well-being. It can allow for planning of future changes to the patient’s living environment and caregiver support, including completing advance directives and establishing medical and financial proxy decision makers.

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# HKPGA AGM cum Annual Scientific Symposium 2018 at the Hyatt Regency (TST) Hotel



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# COUNCIL NEWS

The HKPGA Annual Scientific Symposium cum Tripartite Psychogeriatric Meeting 2018 has been held at the Hyatt Regency Hotel on 24 November 2018 (Saturday). The opening speeches were delivered by the representatives of the Chinese Tripartite Psychogeriatric Meeting. Prof. Edmond CHIU from Australia shared his retroscope on “The Underpinnings of Old Age Psychiatry”. It was followed by the ceremony of the 20th anniversary of the HKPGA and the expert forum. The forum was focused on elder abuse with the insight shared by Mr. TAN Tick Yee, Ms. Stephanie WONG and Dr. Carolyn KNG. The tripartite presentations by Prof. Helen CHIU on “Fluctuating Mental Capacity”, Prof. WANG Hua-Li on “Preliminary findings of the Effect of Depression on Mild Cognitive Impairment” and Dr. YANG Yung-Jen on “Road Safety and Psychogeriatrics: recent update and development in Taiwan” ended fruitfully in the afternoon after the retirement ceremony of Prof. Helen CHIU and Dr. CHAN Wai Fat. There was pre-meeting workshop on cognitive assessment at the Salisbury Hotel of YMCA on 23 November 2018. The workshop introduced the new Hong Kong Brief Cognitive Test and functional assessment for older adults.

Upcoming HKPGA AGM cum Annual Scientific Symposium 2019 will be held at the Hyatt Regency Hotel (Tsimshatsui) on 16 November 2019 Saturday. Prof. Robin Jacoby; Prof. Emeritus of Old Age Psychiatry at the University of Oxford (U.K.) will be the keynote speaker. More details will be available soon.

## The HKPGA Research Award 2019

The Hong Kong Psychogeriatric Association is happy to announce that the contest for the captioned award is now open to HKPGA members for submission.

We welcome original scientific research works themed on old age psychiatry. Submitted work would be evaluated by an independent panel of experts and ONE winner would be selected based on the merits of the scientific project, and the contributions made by the candidates to the HKPGA and the field of Psychogeriatrics in general.

An abstract within 500 words and the full manuscript on the submitted research work, along with the completed application form and a brief CV of the applicant should be emailed to [info@hkpga.org](mailto:info@hkpga.org) on or before **19 July 2019**.



## EVENTS CALENDAR

<i>Date</i>	<i>Activity</i>	<i>Venue</i>
31 Aug- 3 Sep, 2019	IPA International Congress 2019	Santiago de Compostela, Spain
6-7 Sep, 2019	Tripartite Psychogeriatric Meeting	Tianjin, China PRC
16 Nov, 2019	HKPGA AGM cum Annual Scientific Symposium	Hyatt Regency Hotel, TST



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Dr. Estee Wong (Queen Mary Hospital)

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