

# Innovating for Future Health

By Mellissa Ang, Editorial Executive

## SMA Lecturer 2014

This year's SMA Lecture, *Innovating for Future Health*, was delivered by Prof Tan Chorh Chuan, President of the National University of Singapore, Deputy Chairman of the Agency for Science, Technology and Research (A\*STAR), and a renal physician by training. 120 doctors and healthcare professionals attended the event, held on 1 November 2014 at Hilton Singapore. His citation was delivered by Prof John Wong, Chief Executive of National University Health System (see page 8).

"Innovating for future health" is a simple concept that would, however, require substantial amount of time and expertise to actualise. As multiple innovations have sprung up across various industries and in different countries over the last few decades, the healthcare industry has to keep up with the times and continuously improve itself to provide better care for patients.

Prof Tan started his lecture by quoting a *Singapore Medical Journal* (SMJ) article, published in April 1999. Titled "Portrait of an Era: A Social History of Medicine in Singapore from 40 Years of SMJ", it stated that "in the last four decades, the SMJ has charted medical progress and reflected the socio-economic transformation in Singapore".<sup>1</sup> Examining the focus of SMJ articles between 1960 and 1998, Prof Tan realised there had been a shift from tropical diseases to a wider range of healthcare issues. This pattern highlighted the strong need for the local healthcare sector to innovate, to better prepare for an evolving healthcare landscape and population demographics.

This had been echoed by SMA President A/Prof Chin Jing Jih in his opening address earlier: "My colleagues in Geriatrics realised that the patients we're going to face in the next ten, 20 years will be very different. Our patients will be more educated, more rights conscious, more demanding, and would want to be more participative. Hence, the healthcare landscape is going to be very different. We're also looking at a model that is more health-centric, rather than disease-centric."

Prof Tan Chorh Chuan speaking at the SMA Lecture





Panellists (from left): Dr Chong Yeh Woei, Mr TK Udairam, Prof Tan Chorh Chuan, A/Prof Tan Sze Wee, Dr Kelvin Loh and Dr Jeremy Lim

### Confronting a quartet of challenges

Singapore will be facing four major health challenges in the coming years: an epidemic of chronic non-communicable diseases, a rapidly ageing population, rising healthcare costs, and stagnant or falling healthcare productivity.

Prof Tan highlighted the prevalence of chronic non-communicable diseases with statistics that showed five broad causes accounting for 70% of the burden of disease from premature mortality and disability in Singapore for 2010. The top two causes, cardiovascular disease and cancer, took up 39% of the burden of disease in that year. On top of that, all five causes were chronic diseases.

With regard to Singapore's rapidly ageing population, Prof Tan opined that he had been taken aback by patients' age demographics in a local hospital's general ward because it resembled a geriatric ward. Prof Tan revealed statistical comparisons and forecasts about the percentage of population who were above 65 years of age in countries such as the US, the UK and Singapore from 1980 to 2050. He reiterated that the impact of an ageing local population should not be underestimated, as the number of elderly individuals in Singapore would have tripled from the current 350,000 to nearly 1 million elderly residents by 2030. Besides that, a person is four times more likely to be hospitalised and will remain warded for longer periods of time.

Prof Tan pointed out that an ageing society would eventually translate to increasing healthcare costs. Nonetheless, he assured the audience that the Government's direct spending on healthcare has increased from \$4 billion in 2011 to the current \$8 billion.

Singapore might also have to tackle stagnant or falling healthcare productivity. Prof Tan referred to a *New England Journal of Medicine* article, "Rethinking Health Care Labor", which observed that healthcare, as it is designed and delivered today, is very labour intensive.<sup>2</sup> The US healthcare sector had, as a result, experienced no gains in labour productivity over the past 20 years. This situation could occur locally as well.

### Existing gaps in healthcare

After discussing these health challenges, Prof Tan asked the audience to consider how the healthcare sector could work together to solve these issues. He pointed out that it was crucial to recognise that most health systems are not optimally structured for the changing healthcare landscape, because they are largely centred on hospitals. Prof Tan commented, "If the burden of all these chronic diseases falls largely on acute hospital-based Medicine, we have a fundamental mismatch." Although Prof Tan applauded the efforts concentrated in public health and primary care to cope with the impending silver tsunami, he emphasised the need for new care models and approaches to prepare for a massive increase in chronic diseases as a result of elderly patients with multiple medical problems. Citing the Ministry of Health's Healthcare 2020 master plan, he went on to elaborate on a three-step approach – enhancing access to healthcare services, improving quality of care, and improvability healthcare affordability.

Prof Tan then invited the audience to envisage what more could be done or if there were opportunities to bridge the gaps in healthcare. He felt that while solutions should solve the issues at hand directly, Singapore should possess the foresight to identify and mitigate their root causes in the fastest way possible. To underscore this point, he related a story about an anaesthetist and a family physician who acted differently when they saw people in a river – the former started rescuing the people from the water, while the latter went upriver to find out the cause of this phenomenon. His anecdote drew laughter from those present.

### Working on present and future plans

Prof Tan concluded his speech by presenting a two-pronged approach to innovate for the country's future health – optimising healthcare for today, and working upstream on fundamental solutions for tomorrow.

The first prong concentrated on how to optimise healthcare by innovating for greater hospital productivity and care quality, to ameliorate existing issues in healthcare.

Prof Tan explained that in order to achieve that goal, additional emphasis should be placed on automation and IT, workflow improvements, and changes in care delivery mode.

The second prong visualised the health system of the future. Some of the areas Prof Tan pointed out included public health and clinical care imperatives; so that approaches in disease management could be used to fundamentally improve health outcomes, trained laypersons' roles could be expanded, and finance and economics could be used as drivers of change.

Prof Tan felt that through better understanding and application of behavioural sciences at the community level, campaigns or programmes could be implemented to encourage healthy lifestyles. As Singapore's population ages, the majority of care would be carried out at home. Hence, holistic care centres with GP-led teams would optimise functional recovery for this group of patients. In addition to systems-related changes, Prof Tan also articulated the importance of the extensive use of low-cost technologies, which include a fibre bed that monitors heart and respiratory rates.

### Panel discussion

The lecture was followed by a panel discussion on the same topic. The discussion was moderated by A/Prof Tan Sze Wee, who is the Deputy Executive Director of the Biomedical Research Council at A\*STAR, and a member of the SMA Council. The panellists featured were: Prof Tan; Dr Chong Yeh Woei, SMA Council Member; Dr Jeremy Lim, Partner and Head of Asia Pacific Region, Health & Life Sciences, Oliver Wyman; Dr Kelvin Loh, Chief Executive Officer (CEO), Mount Elizabeth Hospital, Parkway Health; and Mr TK Udairam, Group CEO, Eastern Health Alliance.

A member of the audience asked Prof Tan about reduced healthcare productivity. He replied that since medical research today is largely funded by private companies, a clinician-researcher sometimes had to balance making recommendations according to guidelines and the safety of innovations, with cost-benefit analyses. Prof Tan pointed out that most medical research in the past were based on trends in the West. However, he explained that Singapore had now realised that their environment was unlike those of other developed countries. Hence, the local healthcare sector had started to justify the need to develop solutions for its own problems, which might result in more cost-effective and productive outcomes.

### Thoughts from the audience

SMA News caught up with three Year 4 medical students from the Yong Loo Lin School of Medicine, Wilnard Tan, Andrew Arjun Sayampanathan and Kenneth Chow, who shared that they had gained valuable insights from Prof Tan's lecture. They recognised that it is important to integrate all parts of the healthcare sector and to involve laypeople in the care delivery.



**Top** There was a full house at the event

**Bottom** Medical student Wilnard Tan poses a query to the panel

Geraldine Lim, a nurse clinician at Singapore General Hospital's Theatre Sterile Supply Unit, expressed that she now knew the latest updates on innovations within the healthcare sector. She also noted the importance of innovating to allow more opportunities for collaborative efforts among doctors, nurses and technicians, so as to deliver the best possible care. ■

### References

1. Kua EH, Kua JPH. Portrait of an era – a social history of medicine in Singapore from 40 years of SMJ. *Singapore Med J* 1999; 40(4):193-205.
2. Kocher R, Sahni NR. Rethinking Health Care Labor. *N Engl J Med* 2011; 365:1370-2.