Interview: Dr. Yee Leong Teoh â?? CEO, Singapore Clinical Research Institute (SCRI)

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CEO and Associate Professor of the Singapore Clinical Research Institute (SCRI) Yee Leong Teoh explains the organizationâ??s pivotal role in supporting and developing Singaporeâ??s clinical research landscape, how these efforts have impacted studies from a regional perspective, and his outlook on what direction the country must now take to sustain its future value proposition.

As an introduction for our readers, can you please provide an overview of the SCRIâ??s functional role and responsibilities?

The CTERU (Clinical Trial Epidemiology Unit) of Ministry of Health, which was the predecessor of SCRI, was founded in 1996 in order to support Singaporeâ??s clinical research environment. It evolved into SCRI in 2008. In this regard, SCRI partners with doctors helping them to carry out trials in order to test their hypothesis and structure the protocol that will showcase the discovery results. It is important to consider that producing a medical protocol is quite comprehensive as it contains information about the number of patients enrolled in the clinical research, statistical data about the results obtained, and the final treatment outcomes.

In addition, SCRI also helps doctors in other areas such as supporting grant application with to funding organizations like National Medical Research Council in order to obtain the funds needed for such developments.

SCRI remains active in the backend of all the clinical research conductedâ??overseeing project management and helping doctors to build up partnerships with other doctors or hospitals located in other countries. This, in turn, helps to enlarge the volume of trials according to the project needs in terms of data collection.

Clinical research has several functions but the most important one is to look after the patient. As an academic institute we support investigator-led studies that private pharmaceutical companies may not be interested because of the low potential profits. However, the substantial impact that these discoveries can have on patients is nevertheless indisputable.

What factors prompted the establishment of the organization and how did its scope evolved alongside the country own development?

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In 1996, although the government recognized Singaporeâ??s strong research capabilities, they realized that the country was lacking an organization capable of helping the doctors in the translational area. CTERU started out as a small unit and the organization has been continuously growing into what is SCRI now. Therefore, SCRI become a type of autonomous research organization where the government provides the majority of the funds and it designs the guidelines but SCRI has its own CEO and its own board of directors who are in charge of the executive management of the institute.

What have been the primary milestones that have come out of Singaporeâ??s clinical research landscape?

I would like to highlight two different clinical trial studies carried out alongside Singaporeâ??s history that have had great results. These examples are related to hepatitis B and atropine treatment of myopia (ATOM).

With regards to the first example, in 1980s hepatitis B vaccines were really costly to patients when they first became commercially available. Therefore, Ministry of Health conducted clinical trial in Singapore to evaluate if half dosages could be as effective as the standard dosages of the vaccine to prevent the disease. As a result, the vaccination costs were drastically reduced, in turn, constituting a 60 percent decline in the incidence of acute hepatitis B infections. This research was conducted before the CTERU/SCRI time.

Referring to the second example, Singapore has one of the highest rates of childhood myopia in the world, with about 80 percent of teenagers becoming myopic by 18 years of age. There was trial named ATOM, which found that low doses of topical atropine eye drops could significantly help slow the progression of myopia by 50 percent over a two-year period. I am proud to say that SCRI carried out this clinical study in conjunction with the Singapore National Eye Center.

How has Singaporeâ??s research output impacted clinical development efforts in the region?

In my opinion the discoveries and the clinical research done in Singapore have a vast translational impact within the entire region and even globally. In this sense, we are carrying out several research activities that apply to the entirety of Asia. Sometimes we initiate phase I of the clinical development in order to ensure the positive results of the molecule, and then execute further trials in other countries depending on the genetic differences and the national regulation of each state.

Partnering with doctors and hospitals outside of the country certainly play a pivotal role in our clinical development initiatives, as often times there latent opportunities that the discovery could have in other therapeutic areas. In many of our projects Singapore is the one who is spearheading these partnerships.

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From your perspective, what crucial role has clinical research play in propping up Singaporeâ??s biomedical sciences landscape?

In 2000 the government announced the Biomedical Sciences (BMS) Initiativeâ??an overarching vision to build a strong foundation and position Singapore as Asiaâ??s hub for biomedical sciences. In this regard, we have recognized the potential of our local universities and developed research institutes in A*Star.

In phase I of the BMS Initiative, from 2000 to 2005, a solid foundation was established for basic biomedical research in Singapore. In phase II, from 2006 to 2010, the focus was on translational and clinical research, applying our discoveries generated in our laboratories to humans. In this phase is where SCRI gained more relevance and it was aimed at enhancing Singaporeâ??s clinical trial capabilities. In the most recent phase III, from 2011 to 2015, the government was focused on encouraging the collaborative research through competitive research funds and realizing the outcomes of the research. Our role has been also adapted to the latest government angle but without losing its essence.

As a result, if you look at the history there has been a lot of discoveries and innovation but over the last five years the spotlight has been more focused on a translational strategy. In this regard, SCRI is looking to practical applications of the discoveries, leveraging partnerships to effectively bring innovation from bench to bedside.

This initiative has also now served to position Singapore as one of the leading investment destinations for clinical trials in the region. To date, how many trials have been conducted in the country?

Over the past 15 years, the number of clinical trials has been rising in Singapore. In 2014, 280 clinical trial certificates (CTCâ??s) were issued by the Health Sciences Authority (HSA); this figure is nearly double from the 157 CTCs issued in 2000.

What must Singapore start focusing on now in order to truly stay ahead of its increasingly competitive peers in the region and uphold its status as a regional hub?

It is a reality that a lot of countries within the region are catching up but none of them are comparable in terms of the quality and high-caliber talent that Singapore has to offer. Singapore is one of the primary medical training centers for the majority of doctors in Asia and it has been always considered the hub for high-quality scientific work.

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In order for us to truly maintain this positioning, we have to be highly conscious of our limitations, continuously invest in our doctors, forge networks with high population countries in Asia, while continue being on the forefront scientific and clinical research within the region.

To conclude this answer, Singapore has to continue building the human resources, research capabilities and high potential partnerships. Notwithstanding, Singapore should never lose its current macroeconomic strong points such as the political and economical stability, in addition to the absence of corruption.

Spanning both your public and private sector experiences, what factors have ultimately motived you to settle down with an academic research institute?

Since I started my professional career I wanted to find the way to make a differenceâ??not just to each patient individually, but rather to the entire system in order to have an impact in the long-term. During my early professional stages, I was highly focused on where I would be able to create such impact. Therefore, I started my career in epidemiological research and then I moved to clinical research. I continued developing my professional profile in private pharmaceutical companies for eight years and, before moving to SCRI. Hence, I have developed several skills in different areas that have completed my profile to continue progressing my career in SCRI where I feel I am creating the impact desired.

What objectives would you like to achieve in the upcoming three years?

I want to maintain our approach of developing our partnerships in order to continue bringing the discoveries from bench to bedside, hand-in-hand with private pharmaceutical companies, which will help us to continue developing the scientific discoveries and bringing them to the commercialization stage.

In addition, I would like to develop studies with large impact in terms of patientsâ?? impact. There are a lot of great basic research purposes but, as our resources are limited, we have to prioritize the projects according to the potential impact of the scientific discoveries.

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