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The quality of healthcare cannot improve without integrating service, research, and training

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Haematological oncologist Dr Raymond Liang, gives his take on the adoption and challenges of CAR-T therapy in Hong Kong, the necessity of collaboration with mainland China for patient referrals and clinical trials, and the evolution of both Hong Kong's hospital and regulatory infrastructure, which point to a brighter future for healthcare and medical research in the city.

Could you begin by introducing yourself?

I was born in Hong Kong and attended medical school there before undertaking further training in the UK and post-graduate studies in the US. Most of my professional career has been spent in Hong Kong, where I am currently Head of the Department of Medicine, Director of the Comprehensive Oncology Centre and Assistant Medical Superintendent of the Hong Kong Sanatorium and Hospital. I am also Emeritus Professor of The University of Hong Kong (HKU) and Honorary Professor of both HKU and The Chinese University of Hong Kong (CUHK).

Previously, I served as a member of the Hong Kong Hospital Authority Board, as Dean of Li Ka Shing Faculty of Medicine, HKU, and as President of the Hong Kong Academy of Medicine. I first came to this hospital in 2010, where I focus on blood cancers and conduct some autologous transplants.

Blood cancer treatment has been at the vanguard of new therapeutic options, not least CAR-T therapy. How well integrated are these therapies in Hong Kong?

CAR T is still in the early stage of development here, but we have made a good start. We first saw successes in blood cancers, leukaemia and lymphomas, B Cell tumours and then later in myelomas. It is a new technology, supplementing our conventional treatment for blood cancers like chemotherapy, monoclonal antibodies, targeted drugs, hormonal transplantation, stem cell transplants and immunotherapy.

CAR-T clearly works, but we need the next generation to work even better in terms of efficacy, toxicity, and availability. One limitation is that CAR-T's efficacy varies significantly; for example, it works well in leukaemia, but not as well for lymphomas, where we are still seeing relapses after the treatment. Our hope is that we can develop a more potent CAR-T that we know more about how, when, and how frequently to use.

Another limitation is the prohibitive cost of CAR-T therapy. This could be overcome by streamlining the production of the CAR-T cells and finding better targets. CAR-T needs to work in a more integrated manner with existing treatments, which would help identify better targets. Additionally, making the CAR-T cells stay in the patient's body for longer could help reduce costs. Finally, we are currently using cells from the patients' own body to make CAR-T, but an 'off-the-shelf' solution – for which plenty of trials are currently ongoing – could also be an important means of decreasing overall expenditure.

Are you a patient referral for CAR T therapy, and how does this process work in Hong Kong; is this still considered a last line therapy?

We follow the current regulations, but there are ongoing clinical trials to determine if early treatment works better, specifically in second- and first-line treatments. Additionally, we work closely with centres in mainland China.

It is interesting to see that the scale of China's cell and gene development is starting to produce some results. Are patients from mainland China sometimes referred to your centre as well?

Yes, we have a mutually beneficial partnership. Patients come to our hospital for treatment, and we also refer patients to specialized centres in mainland China for their expertise. Mainland centres have the capacity, so it is beneficial to collaborate with them.

Our hospital is recognized by mainland regulators, specifically the NMPA (China regulator), along with four other hospitals in Hong Kong. We are the only private hospital to have our oncology clinical trial data accepted by them, allowing drug companies to use our data for registration in China.

Also, it is important to remark that we need a larger number of patients to get better data and see trends more clearly. The small number of patients that pass through our doors means that collaboration is inevitable. This means that the current system in Hong Kong – whereby most hospital clinical trial centres generate and hold onto their own data – must move to something more collaborative.

Do you participate as an investigator for clinical trials personally, and do you feel that the correct incentives are in place for more trials to take place in Hong Kong?

I do run trials, but different doctors have varying levels of involvement—some more, some less, depending on their roles and interests. Most doctors here are interested in clinical trials. We all recognize that research, clinical trials, service, training, and teaching are interrelated and support each other. However, different doctors may focus more on one aspect over others. For example, some spend more time on research and clinical trials, while others focus more on teaching or clinical service. But what really matters is building a strong team and capacity.

It is important to notice, that in Hong Kong we are witnessing a shortage of doctors. This means that all of us are quite tied up with service. This situation is similar in Korea, the UK, and Europe, I believe. Therefore, finding time for research and clinical trials is challenging, but motivation is crucial. We must find the time to do it.

Could you elaborate on any challenges or inefficiencies in the system that might be hindering progress in Hong Kong?

It’s understandable that when service needs cannot be met, administrators face tough challenges. Complaints about long waiting lists and other issues arise. During such situations, especially amid the COVID-19 pandemic, the priority shifts to immediate service. However, it is crucial to build capacity not only to meet basic service needs but also to engage in research, clinical trials, and training. These elements are interconnected and essential for staying current and improving quality of care. Neglecting them can lead to a decline in quality over time. Governments worldwide are recognizing this cycle and the importance of integrating service, research, and training to keep pace with medical advancements and improve healthcare quality and patient outcomes. The ultimate goal is to enhance services for the well-being of patients and the community.

The quality of healthcare cannot improve without integrating service, research, and training. As medical technology advances rapidly, it’s crucial for these components to work together. We shouldn’t focus solely on service; research is equally important. Ultimately, our goal is to enhance our services for the well-being of our patients and the health of the community. This integration is essential for achieving our common goal.

You are one of the founding members for the HK Genomic Project. What insights have you gained from your work on genomic research in Hong Kong?

I began this journey more than six years ago. A group of us, mostly doctors, believed that genetic and genomic research was crucial in medical research. We felt there should be more collaboration, government support, and coordination in this field, rather than everyone working in isolation. We discussed this with the Secretary of Health at that time who was supportive of the idea and suggested that we form a group

We formed a steering group with support from the health bureau, which provided secretarial assistance for organizing meetings and conducting research before our sessions. Over two years, we had many meetings and produced a report, which is available online. One of our key recommendations was to establish a genome institute, which we believed was crucial.

Fortunately, we received funding to launch the institute, starting with a focus on hereditary cancer. We aim to expand our research to other types of cancers within families, particularly those affecting young children, as well as rare genetic diseases in infants. Our goal is to use state-of-the-

art technology and expertise to study and analyse genomes, correlating this data with clinical information. We are now in our third or fourth year and collaborate closely with other genome projects.

How will the potential establishment of Hong Kong's own regulatory body impact your work and the scientific community in the region, especially in terms of access to innovation?

We need to understand the purpose behind this change. Historically, in Hong Kong, if a new drug had approval from two regulators, it would almost automatically be approved here. However, our new Secretary of Health seems to want to change this. I'm sure they will still consider the decisions of regulators outside Hong Kong. The aim is to make it easier for beneficial drugs to come to Hong Kong.

Consider a scenario where a drug is not registered anywhere in the world. In such cases, it's understandable that it would need to undergo clinical trials. However, there are times when a drug is already registered in the US, mainland China, or Europe but not yet in Hong Kong. In these cases, it's possible to bring the drug in for an individual patient, but it can be time-consuming and costly. Bringing in just one patient's supply requires a significant amount of work and expense. If the government could facilitate this process, new drugs could be brought into Hong Kong much more quickly. Currently, it can take years before a drug is properly registered here. This delay can impact my clinical work, so having a smoother process for getting new drugs for our patients would be beneficial.

In conclusion, given recent investments in Hong Kong's development, particularly in the biomedical field, what is your sentiment about the city's direction of travel?

I'm optimistic about our progress. Things are looking up as we expand. We're going to have more doctors, more nurses, and we're even constructing new hospitals and renovating the old ones. It's been a long time since we've made such significant changes. The renovations and new hospitals should be finished in the next few years. This means we'll have more space, more staff, and be able to serve more people.

One challenge we may face is the drug budget, as the new medications are expensive. Financing continues to be a challenge, not just in Hong Kong but everywhere. Healthcare costs are a concern

for everyone. As a haematologist, I see many new cancer drugs that could benefit our patients, but they often come with a high price tag. However, with the expiration of patents on some first-generation drugs, we are starting to see some relief. Despite these challenges, we are fortunate to still attract top talent, with bright graduates entering the medical field. We continue to recruit the best minds to our medical schools.

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