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News & Views

Cancer research funding in Asia

Margaret Harris Cheng

In inner Mongolia, 4500 people die of cancer, mostly of the liver, per year. But most people in the country bordering China and Russia are dying of cardiovascular disease or infectious diseases and do not reach the age at which cancer becomes common.

But in its rapidly developing neighbour, China, cancer is now a leading cause of premature death, killing 1.9 million people, most of them under 70, with tumours of the stomach or, increasingly commonly in both males and female, the lung.

In the Pacific the spectrum is as wide. Check the causes of mortality in Fiji and you will find that in 2005, 480 people, 370 under the age of 70 died of cancer – mostly cervical cancer in women and liver cancer in men while most Fijians succumb to cardiovascular diseases. In Australia, Fiji's large southern neighbour the picture is entirely different with cancer killing approximately 38,000 people, making it the leading cause of death in that country.

And in Australia skin cancers rarely seen in the rest of Asia dominate, thanks to its relatively recently arrived non-Asian population spending too much time under the hot southern sun.

Naturally, cancer research dollars follow cancer rates. Australia with its high cancer rates incidence spends more money on cancer research than its Asian-pacific counterparts and has a longer history of well-funded cancer research.

Its funding structure is a mixture of private and public funding with organizations like Cancer Australia raising and contributing A\$36 million of the estimated A\$100 million given by non-pharmaceutical bodies (essentially governments and cancer councils). The amount contributed by pharmaceutical companies for clinical trials and basic research is not publicly available.

Celebrity diagnoses add considerably to the funding pool. When Kylie Minogue, a global pop icon was diagnosed with breast cancer, donations flooded in. Such a phenomenon

was also seen in Hong Kong with the demise from cervical cancer of Annita Mui, not so well-known in the non-Chinese speaking world but much bigger than Minogue in 'cantopop' circles.

In Australia, the non-government organizations tend to fund basic research. "Clinical trials are often seen by funding agencies as best funded by pharmaceutical companies, although they will only fund research towards a commercial benefit, whereas investigator driven research may be more innovative", said Professor Ian Olver, Chief executive of the Cancer Council, Australia.

"There are some emerging areas which are still underfunded. Of the Cancer Council's efforts, the majority is treatment-focused, but there is a significant spend on behavioural science/cancer prevention research and supportive care."

While the Australian Cancer Council is a major funder of national research efforts, there are so many small and large groups, including non-government organizations (NGOs), private foundations and industry-based bodies that the Australian federal government has set up a new national government cancer agency, Cancer Australia, and committed \$20 million over the financial years 2005–2006 to 2008–2009 to build the national capacity for clinical trials. The first funding round in 2005–2006 supported 10 national cooperative oncology clinical studies groups.

Along with funding existing clinical studies groups, Cancer Australia has set up an audit of cancer research in Australia to find out not just who is funding cancer research in Australia but also to identify gaps and improve targeting. The idea is that some of the fashionable areas, such as breast cancer, where funding tends to overlap, will be more appropriately funded and some of the more esoteric, less publicised areas get the funds they need.

Effectively identifying the 'funding orphans' the areas that miss out because they are unglamorous, too difficult for the public to understand or simply not very good at explaining their relevance, is one of the things the cancer funders hope the national audit will achieve.

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“The strengths [in Australian cancer research] are research groups like the tumour specific trial groups which can be internationally competitive at answering key questions because of nationwide co-operation.”, said Professor Olver.

“There are some tumours, such as melanoma, where Australia is particularly competitive because of the high incidence of the disease here. A priority for Australia is to ensure we fund research that is internationally competitive and/or relevant in an Australian context, to ensure we are not unnecessarily duplicating international studies. The national audit will help to show how well we’re doing that.” This idea, coordinating funding and targeting need, is something Australia’s neighbour to the North, the city-state Singapore, has been doing for some time. Set up in 2002 by the snappily named A*STAR (Agency for Science and Technology Research) the Singapore Cancer Syndicate is a funding agency tasked with coordinating Singapore’s cancer research and supporting it via its National Cancer research and development program.

They have a 5-year budget of S\$75 million that is to be used to fund the development of cancer research infrastructure and help set up research groups. To date, they say they have committed S\$15.9 million in research grants through two grant call exercises.

Much of the research currently supported by the Singapore Cancer Syndicate is in basic science-preclinical models, biomarker discoveries – one of Singapore’s recognised strengths, rather than the clinical trials being supported by Australia’s national funding agency, although there is also work on setting up cancer registries, something new to many Asian communities.

While much of Singapore’s research is basic-science oriented the first round of grants were given to 10 programmes aiming to set up the infrastructure needed for clinical trials. Professor Edison Liu, executive director of the Singapore Cancer Syndicate says they wish to develop “‘first-in-man’ clinical trial centres.”

In Hong Kong, Singapore’s perennial rival in all things from shipping to shopping, oncology researchers believe the former British colony is the natural home for Asian clinical trials because they are the gateway to China with its huge, underdeveloped market the big pharmaceutical companies wish to tap into.

“Hong Kong is quite well-positioned to do clinical trials. Our universities have clinical trial centres with business managers and legal advisers, all the infrastructure”, says Professor Ronnie Poon, Assistant Dean of the Department of Surgery at the University of Hong Kong’s faculty of Medicine, who researches hepatic cancer.

“Although a lot of drug companies have their head office in Singapore, they tend not to do their trials there. It has a smaller population and a mix of different ethnic groups, and the medical care is more privatised so its not that easy to do research there.” In Hong Kong there are major clinical trials being done on hepatic cancer and a lot of collaborative work on nasopharyngeal cancer, prevalent in southern Chinese populations but not common elsewhere in the world.

While mainland China, with its still relatively young but rapidly ageing population, is the market the big pharmas are eyeing, it is Hong Kong where they actually do the trials. Intellectual property theft is rampant in China, and the

pharmaceutical companies worry that the drugs being trialled may be copied and appear on the market in a myriad of forms, long before the trial is even over.

There are also concerns that the patient follow-up needed for a good trial cannot be guaranteed in mainland China because the health system, once entirely government-controlled has undergone a major upheaval, moving towards a US-style market based system. Many Chinese, particularly older people living in rural areas, can no longer afford to use health services. And many of those who can afford healthcare, the newly wealthy, younger city-dwellers, do not wish to participate in research.

Clinical trials provide a lot of funding needed to keep research units going long-term, said Professor Poon, but specific university-based programs are also publicly funded by a subsidiary of the University Grants Commission, called the Research Grant Council. This body is quite generous – a typical grant is HK\$1 million over three years, but “chances of securing a grant are around 30%”, said Professor Poon.

While mainland China is not able to attract pharmaceutical company funded clinical trials, central government policy has seen research and development funds for all biological sciences steadily rise to a point where it is drawing favourable comparisons with funding in EU countries.

Professor Poon said his group and others in Hong Kong are able to access research funds from China’s National Science Foundation as long as they have a mainland-based partner. “Hong Kong is still considered overseas. We have to collaborate with a Chinese partner.” The money available to researchers is lower in China – grants are around HK\$400,000 to \$500,000, but costs are much lower too, particularly research staff salaries.

Private funding is virtually non-existent in mainland China where wealth is a very recent phenomenon. In Hong Kong the private sector is a relatively generous source of oncology research funding both from NGO’s set up to support research and individual donations made by very wealthy individuals who have survived, or intend to survive, cancer. Philanthropy is well established in Hong Kong – so well established that even the medical faculties bear the names of leading entrepreneurs.

One of the major funders, the Hong Kong Cancer Fund, has, over the past 5 years, funded HK\$10.8 million worth of projects on subjects as diverse as use of the Epstein–Barr vaccine, psychosocial research on long-term liver cancer survivors, and research into the quality of life of Chinese Breast Cancer Patients and a study into hereditary gastrointestinal cancer.

Japan too has generous benefactors and a much longer history than most Asian nations of private support for cancer research. Driven to develop their own pharmaceutical industry during the First World War, they also have a long history of local research. Their oldest private funder, the Japanese Foundation for Cancer Research (JFCR) was founded in 1908 and by 1934 this group launched a Cancer Institute and hospital.

By the 60s the Japanese government decided to get involved and set up the Foundation for Promotion of Cancer Research in 1968 to provide grants for cancer research. In the mid-80s this group was re-organized and became an officially non-government organization “collaborating with the Japanese government”.

They also developed ‘The Comprehensive 10-Year Strategy for Cancer Control’, essentially a 10-year plan to direct their

funding into selected programs and they credit this first 10-year plan (from 1983 to 1993) with “the discovery of oncogenes and tumour suppressor genes”.

The next 10-year plan devised by this group, while still funding the basic sciences under programs such as ‘Molecular Mechanisms of Carcinogenesis’ and ‘Invasion, Metastasis and Characteristics of Cancer Cell’ started looking at wider issues such as population characteristics, means of prevention and quality of life issues.

South Korea, a cultural and now economic rival to Japan in much the same way Hong Kong and Singapore operate has also been pouring funds into research and development in the health sciences, including cancer, and has firmly placed cancer research in the public sector. In 1989 they decided they needed a national cancer institute and the government spent US\$124 million developing an all-in-one research, treatment and prevention facility, finally opened in 2000.

This agency, the Korean National Cancer Center, manages cancer research funding through the National R & D program for Cancer Control and leads policy and strategy. However, it also collaborates with the US National Cancer Institute a pattern increasingly common throughout Asia.

Such collaborations are not always US–Asian. In fact, they are more likely to follow colonial, historical, geo-political lines with say the French collaborating with Vietnamese researchers in their former colony, or the Americans collaborating with their close ally Korea.

More recently the collaborations have followed ethnic migration patterns as well. In May this year, the Queensland Institute of Medical Research Technology announced commencement of clinical trials of a vaccine against naso-pharyngeal cancer. The participants will all be Hong Kong patients with naso-pharyngeal cancer, managed in Hong Kong. But analysis of markers and responses will all be done in Brisbane, Australia at a cost of approximately HK\$300,000 per person.

And the funding? That is coming from everywhere – from the Queensland government to private donors in Hong Kong and Australia, and corporate contributors, including the airline transporting tissue for testing. Oncology research funding in Asia is no longer about government grants and simple projects. It has become an industry all of its own.

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