PREMIUM

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Peter Shepherd & Dave Grattan: Bio-medical research is the key out of the next health crisis

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Researchers at Queensland University in Australia are engaged in producing a T-cell Covid-19 vaccine enhancer. Photo / Supplied, File

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OPINION

The Covid-19 pandemic has dramatically highlighted the value of advanced biomedical research to our society.

Biomedical research is the type of research that seeks to understand how the body works, how

diseases affect us and then develops new strategies to prevent or treat these diseases.

In the influenza epidemic 100 years ago, the details of what the virus really was and how it worked simply weren't understood. Today' biomedical research allowed us to identify the SARS-CoV-2 virus and understand what the virus is and how it works in a few short months.

This was followed rapidly by developing methods for mass PCR-testing to detect infections, genome sequencing of the virus for tracing infections, environmental DNA detection of virus in our wastewater, and of course, the development of novel vaccines and new drugs to treat Covid-19.

These have been developed at a pace that would have been inconceivable 10 years ago, and this is due to the advances in biomedical research.

The research capabilities that have informed our response have been the result of many years of investment in science. Further, while the advances in Covid research have recently grabbed the limelight, this is just the tip of the iceberg. Parallel advances in understanding the causes of diseases such diabetes, heart disease, cancer and neurological diseases are being made that are equally dramatic but less heralded.

Given this experience, you would think that any country would prioritise investment in biomedical research capability to protect itself from current and future health threats, especially in these times. Unfortunately, this is not the case here and compared to other developed countries, we spend very little on this type of research.

For example, the USA is spending $US52bn on health research this year, which represents NZ$218 per person in that country. Our government, by comparison, is spending just NZ$23 per person on our comparable institution, the Health Research Council.

So the USA is spending nearly 10 times more on health research per man, woman and child than we do. We are well behind most equivalent other first world countries as well in terms of our investment in health research, per capita. For another perspective, the total amount spent on health research in New Zealand in a year is matched in just over 1 day by the amount spent on the Covid wage subsidies during lockdown.

Recently the Government announced some extra money for infectious disease research but at $250K per week and spread over multiple diseases, that won't go very far.

So why is it our Government doesn't put its money where its mouth is in this area? One argument is: "why should we invest in this type of research, when we are seeing such good results come out from

the efforts of other countries?"

Of course, there is firstly a strong case that we need to make a fair contribution to these global efforts if we want to benefit from them, although this often falls on deaf ears.

Another important reason, though, is that we need to have researchers with the right skills to tackle research questions that are unique to this country. This is particularly true, for example, for specific issues that relate to Māori and Pacific health, as this work is simply not going to be done in other countries. Relying exclusively on research that was done overseas on European or Asian populations will likely increase health inequities.

The value of having advanced biomedical research capability available has also been strongly demonstrated by the skills it brings in guiding our responses to the pandemic that are right for our country.

In fact, we have been very lucky that among our small biomedical research workforce there were a few key individuals with relevant expertise in virology, vaccines etc. These scientists have stepped up and provided invaluable guidance to government, health agencies and to the members of the public. Many scientists have also been active in the press, in social media and in communities explaining what Covid-19 is, how vaccines work and generally providing reliable sources of information for our communities to counter the vast array of misinformation coming at us.

Similarly, our biomedical scientists in other areas will be crucial for tackling other major health issues that face our country, now and in the future.

Our government often acknowledges the imprimatur that science gives to it's development of Covid-19 response policies but paradoxically, despite the important role of biomedical science in supporting our pandemic response, that same response is threatening the basis of our biomedical research system.

The lockdowns associated with Covid-19 have caused significant collateral damage to the relatively small pool of biomedical research that we do have here.

Laboratory-based research cannot be done "working from home", and lockdown rules have greatly reduced access to laboratories to do research.

This is affecting not just our research efforts to tackle Covid-19, but also in all those other important areas such as cancer, diabetes and brain diseases.

Because of the short-term way that the government funds research, a lot of important research that was started before or during the pandemic will wither on the vine. This risks a huge waste of government money as large blocks of research will remain incomplete, simply because research contracts have run out of time.

Fixed-term contracts for many researchers are also running out and universities that manage most of this research don't qualify for wage subsidies and don't have resources to make up the difference.

The researchers involved will have nothing to show for their efforts and thus will find it hard to get future research funding or to find jobs. Thus, we risk losing a generation of our best and brightest researchers along with all the skills, expertise and knowledge they have developed just at a time when we need them most.

Hopefully, our politicians will learn from the experience of the past two years, and acknowledge how important having a strong frontline research work force is for us to be able to tackle the major health problems that face us now and may face us in the future.

The Government has just announced that it will have a review in the next year to think about how it will support this type of research in the future. This is an important step in the right direction.

Unfortunately, by the time the review is completed, the damage will have already been done. Greater investment is needed now to rescue those stalled projects and maintain jobs for the laboratory researchers.

Compared to the huge amounts of money we are spending across the Covid response, increasing our investment in biomedical research would be a drop in the bucket.

But it would be a drop that could save a tsunami of health threats we are likely to face in the future.

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