



Annual Review Highlights 2020



Children's
Cancer
Institute

A Message from the Institute

2020 was a year none of us will forget in a hurry. On top of a series of natural disasters in Australia, we had the COVID-19 pandemic with all its lockdowns, breakouts and public health restrictions to deal with.

Here at the Institute, we were thrown into financial turmoil as our major fundraising events were cancelled, one after the other. From an operations perspective, we had to find a new way of doing things, with team members suddenly working in a whole array of disparate locations. Yet, somehow, this situation brought out the best in our organisation, and despite all the obstacles, we made truly extraordinary progress.

The Zero Childhood Cancer personalised medicine program (ZERO), which we run in partnership with the Kids Cancer Centre at Sydney Children's Hospital, Randwick, continued to achieve remarkable results.

Front cover: Jade was diagnosed with ganglioneuroblastoma at just two years old.

On an international stage, I was personally invited by the President of the American Association of Cancer Research to present on ZERO's success at their Annual Meeting, the world's largest meeting of cancer researchers. In addition, outcomes from the ZERO clinical trial were published in the leading international journal, *Nature Medicine*.

We are thrilled that the clinical trial is now being progressively expanded, thanks to generous joint funding by the Federal Government and Minderoo Foundation. By the end of 2023, our aim is that every Australian child diagnosed with cancer will have access to personalised medicine through ZERO.

Our researchers continued to make important progress in developing new treatment approaches for childhood cancers, including poor-prognosis

leukaemia, sarcoma, neuroblastoma and brain cancer, with a number of clinical trials based on our research currently in planning. We also launched the Institute's newest drug discovery initiative, THERapeutic INnovations for Kids (THINK), which we believe will significantly accelerate the development of effective drug therapies for use in children with cancer.

Planning for Australia's first-ever Children's Comprehensive Cancer Centre has continued unabated throughout the year. This extraordinary world-class centre will not only be cutting edge in every respect, but will allow clinicians and scientists to collaborate on an unprecedented level. This is an ambitious project but is well on track and we very much look forward to the completion of our future home in 2025.



This year really has shown what we can achieve when we work together. A fantastic team effort by everyone involved with the Institute allowed us to not only survive, but to thrive.

Thank you for your incredible support. It enabled us to keep going when we wondered if we could and drove us to achieve more than we thought possible. Now, more than ever, we feel we can achieve our ultimate goal – to one day save the lives of all children with cancer.

Professor Michelle Haber AM
Executive Director, Children's Cancer Institute

Financial Report

Statement of profit or loss or other comprehensive income For the year ended 31 December 2020

	2020 (\$'000)	2019 (\$'000)	2020 (%)
Revenue			
Research	29,115	31,858	56%
Fundraising	16,432	19,702	32%
Other	6,489	242	12%
Total	52,036	51,802	100%
Expenses			
Research and scientific activities	42,199	43,671	81%
Fundraising	5,998	7,967	12%
Support and administration	3,919	3,997	7%
Total	52,116	55,635	100%
Total (loss)/income for the year	(80)	(3,833)	

Note: The Institute adopted Accounting Standards AASB 15 'Revenue from Contracts' and AASB 1058 'Income for Not-for-Profit Entities' in relation to research grant revenue in 2020, and comparative year 2019 has been restated.

Statement of financial position As at 31 December 2020

	2020 (\$'000)	2019 (\$'000)
Assets		
Cash, receivables, other financial assets	36,580	26,779
Property, plant and equipment, intangible assets	8,378	8,044
Lease asset	12,471	15,366
Total	57,429	50,189
Liabilities		
Current trade & other payables	3,512	4,325
Provisions	3,498	3,359
Financial liabilities	15,802	7,024
Lease liability	3,958	4,754
Total liabilities	26,770	19,462
Net assets	30,659	30,727
Equity		
Reserves	10,652	10,667
Retained surplus	20,007	20,060
Total equity	30,659	30,727

Note: The Institute adopted Accounting Standards AASB 15 'Revenue from Contracts' and AASB 1058 'Income for Not-for-Profit Entities' in relation to research grant revenue in 2020, and comparative year 2019 has been restated.

Our Year in Review

January

Research paves way to new treatment for difficult-to-treat leukaemia Studies by scientists in our Blood Cancers and Molecular Targets and Cancer Therapeutics themes – in collaboration with US-based researchers and published in the international journal *Leukemia* – found that a drug known as **OT-82** shows great promise against difficult-to-treat leukaemia. As a result of this research, new clinical trials of this treatment are being planned in children with high-risk leukaemia.

March

Professor Maria Kavallaris AM (below) named ‘NSW Woman of the Year’ A scientist at the Institute since our labs first opened in 1984, Maria heads our **Translational Cancer Nanomedicine theme** and has become internationally recognised for her research in cancer biology and therapeutics, as well as her pioneering work in nanomedicine.

Continuing our work in a time of crisis When the COVID-19 pandemic forced us into lockdown, we had to find a way to keep critical patient-facing services running. Research staff were rostered into our labs to work on our **Minimal Residual Disease and Zero Childhood Cancer programs**, both of which provide critical test results for hospitals treating children with cancer around Australia.



April

Funding boost for the Zero Childhood Cancer personalised medicine program **The Commonwealth Government and Minderoo Foundation** announced joint funding of \$67 million for ZERO, which we run in partnership with the Kids Cancer Centre at Sydney Children’s Hospital. This funding will not only allow ZERO to continue but also to expand. This means that by 2023, every child with cancer in Australia will have access to personalised medicine.

June

New treatment approach for poor-prognosis leukaemia Researchers in our **Cancer and Stem Cell Biology Group** discovered what could prove to be an improved way to treat the poor-prognosis blood cancer, acute myeloid leukaemia (AML). We believe the new treatment approach – published in leading cancer research journal, *Cancer Cell* – has the potential to replace intensive chemotherapy. Following more studies, we hope to see the therapy progress to clinical trial in children with AML.

Our Executive Director addresses world’s largest cancer research meeting Professor Michelle Haber AM was invited to present on the success of the Zero Childhood Cancer Program (ZERO) at the **Presidential Select Symposium of the American Association of Cancer Research Annual Meeting 2020**, the world’s largest meeting of cancer researchers. This highly prestigious invitation indicates the international significance of ZERO, which is now recognised as one of the world’s leading childhood cancer personalised medicine programs.



August

Copper the key to potential new treatment approach Research by our **Metal-Targeted Therapy and Immunology Group** showed that removing copper from the blood, using a drug called TETA, can help overcome resistance to immunotherapy in some cancers. Published in the international journal, *Cancer Research*, this research could pave the way to additional treatment options for children with cancers such as neuroblastoma and brain cancer.



November

‘Outstanding Cancer Research Fellow’ awarded to Dr Orazio Vittorio (above, right) At the **2020 Cancer Institute New South Wales Research Awards** – the state’s leading awards program to celebrate excellence and innovation in cancer research – Dr Vittorio was recognised as an early career researcher who has demonstrated exceptional research progress during the year.

October

Results from Zero Childhood Cancer national clinical trial published Results from the first 250 children enrolled on the Zero Childhood Cancer national clinical trial – published in one of the world’s top medical research journals, *Nature Medicine* – showed without doubt that personalised medicine for children with high-risk cancer can change lives. The ZERO program was also awarded the **‘NSW Health Award for Health Research and Innovation’** this year – a fantastic endorsement.

Our first Gala of Giving In October our first ever **Gala of Giving** virtual fundraising event took place. Three of our outstanding young research Team Leaders presented their work and the motivations that drive them to improve outcomes for children with cancer. Over 320 supporters tuned in for the event with \$200k raised through sponsors and online pledges.

CEOs smash the \$1million mark Our Annual **CEO Dare to Cure (left)** took place at the iconic Fleet Steps in Sydney Botanic Gardens. Over 100 CEOs brought their passion and philanthropic spirit, completing their dares in person and virtually and raising an outstanding \$1million for our childhood cancer research.

December

New brain cancer treatment approach to be trialed Research by our **Brain Tumours Group** revealed that a new treatment approach known as polyamine depletion therapy, which we last year found was effective against neuroblastoma, appears to be even more effective against the deadly childhood brain cancer, diffuse intrinsic pontine glioma (DIPG). Clinical trials in children with DIPG and neuroblastoma are now being planned.

September

A new approach to drug discovery We launched a new initiative, **Therapeutic INnovations for Kids (THINK)**, to address the critical need for more drugs to be developed dedicated to treating childhood cancer. Building on the expertise and world-class facilities of our Drug Discovery Centre, THINK aims to create an end-to-end childhood cancer drug discovery capability, which we believe will significantly accelerate the development of effective drug therapies for use in children with cancer.

Levi's Story



“He’s a part of everything we do and every decision we make. His incredible strength and courage inspire us every day.”

Kathryn, Levi's mum

Levi was kind and caring. Playful and fun. He had a cheeky grin that could lighten your mood and big brown eyes that drew you in. He loved his family, his friends and soccer in equal measure.

The first sign that something was wrong came just after Levi turned seven. His eyes started looking different. He seemed to be going a bit cross-eyed at times. Levi's parents, Kathryn and Ben, took him to get an eye test and he was referred to an eye specialist, who suggested an MRI scan.

Just before Christmas, Kathryn was shopping, preparing for one of the happiest times of the year with her family, when she got the call that would change everything.

“They told me there was a mass on Levi's brain and some swelling, and to take Levi straight to the emergency department at Sydney Children's Hospital.”

After an anxious wait, they were called into the Kids Cancer Centre at Sydney Children's Hospital, where they received the devastating news. Levi had diffuse intrinsic pontine glioma (DIPG), the most aggressive paediatric brain cancer. There is no cure. The average prognosis is just 9 -12 months. The only thing left to do was to make memories.

Levi received radiotherapy for six weeks. He began to experience excruciating headaches that would come out of nowhere and leave him screaming in pain, followed by intense vomiting.

“The pain was so intense that it just wiped him out,” says Kathryn.

After radiotherapy, Levi was placed on an immunotherapy trial for six months. When the tumour started to grow again in September, they began another clinical trial with a new drug called ACT001.

Levi's appearance began to be affected. His face started to droop. Levi would say, “Mum, my face looks weird.”

“He started to notice changes and get very self-conscious. Then he started to not want to go to school,” says Kathryn.

In the 12 months post-diagnosis, Levi endured one craniotomy (brain surgery) and biopsy, 30 rounds of radiation (complete with head in a mask and bolted to a table), an operation to insert a porta catheter, 14 cycles, or 6 months, of an immunotherapy trial, two months of another experimental trial, 11 MRI's (almost one a month), 2 CAT scans, never-ending needles and blood samples, relentless neurological exams and many, many trips to the hospital.

Levi was determined to keep doing the things he loved. He would regularly run around with his mates, continued playing soccer despite his double vision, and was doing flips on the trampoline as he celebrated his 8th birthday in November.

The family travelled regularly, and Levi was able to live out his dream to see his idol Ronaldo play in Paris. He carried the match ball out onto the pitch when Real Madrid played Paris Saint-Germain in a UEFA Champions League game.

“He was trying to prove to himself that even though his world was changing, and the cancer was getting the better of him, he was still normal. He wasn't. He was extraordinary,” says Kathryn.

In mid-November, Levi started to notice his legs were feeling numb and wobbly. The next day, things deteriorated rapidly.

“He was bedridden with headaches and intense nausea. He could not even move his head without screaming.”

The next six weeks were horrific as Levi was stripped of his basic functions one-by-one. The tumour had taken over. This beautiful brave boy's body was shutting down. Kathryn described the horror before her eyes.

“They could do nothing to halt the ballooning of Levi's face and body, the slurred speech, the paralysis of facial muscles, the headaches that ripped through his skull like a freight train, or the steroid-induced personality change.”

There was one last moment for Levi's parents to be struck by their boys' courage and determination. On December 15th, Levi won the class award for consistency at his school. Just a day or two before he lost his ability to walk, his parents took him in his wheelchair to accept the award.

“His name got called out and you could see how unsteady he was on his feet. He walked all the way up to the stage to get his medal. Just the strength that that would have taken him,” says Ben.

Levi knew he had brain cancer and towards the end he knew he was dying. He just wanted to make it to Christmas. He'd cry, “How many more days? I want it to be tomorrow.”

Levi made it to Christmas. He passed away on 31 December 2018.

Despite the heartbreak, Kathryn, Ben, Olivia and Archie experienced beautiful moments that they will take with them forever.

“He's a part of everything we do and every decision we make,” says Kathryn. “His incredible strength and courage inspire us every day.”



LEVI'S PROJECT A FUTURE FOR KIDS WITH DIPG

In honour of Levi, a world-leading research project was established at Children's Cancer Institute. Levi's Project aims to develop the first effective treatment program for children with DIPG.

Led by parents Kath & Ben, in just 18 months, Levi's Project has raised an outstanding \$3 million to fund DIPG research by the Brain Tumours Group at the Institute. Thanks to this support, each day we are getting closer to a future for kids with DIPG.



**We will cure
childhood cancer.
It's not if.
It's when.**



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