



A leader in the global fight against cancer



CHILDREN'S
MEDICAL
RESEARCH
INSTITUTE

Jeans for Genes®

ProCan[®] aims to transform cancer management for the 14 million children and adults diagnosed with cancer worldwide each year.

Imagine being a parent who is told 'Your child has cancer.' For hundreds of Australian parents every year, this is the reality.

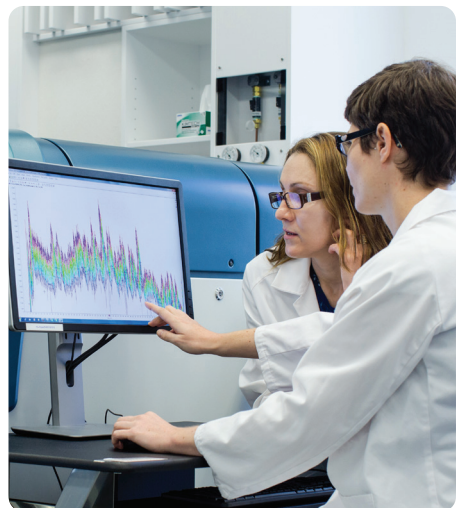
Receiving the best cancer treatment plan first time means having the best chance of a cure. It means no time is wasted on unsuccessful treatment attempts, while the cancer continues to grow.

We have learnt from research that a major reason for cancer being so difficult to treat and cure is that every cancer has a different set of molecular changes. Cancers that

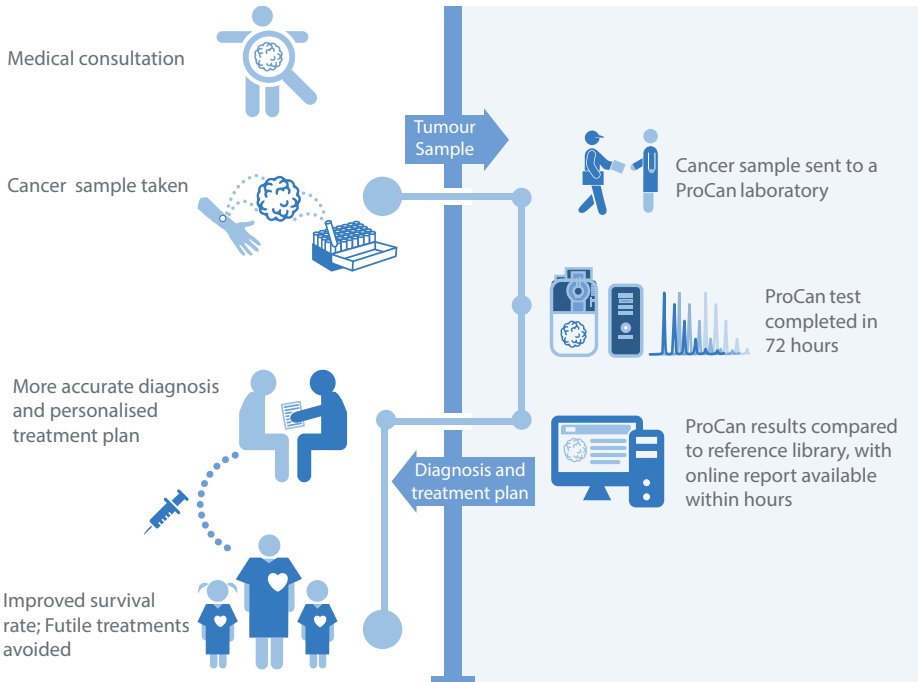
look the same as each other, when examined with a microscope by a highly skilled pathologist, are often different at the molecular level. This means that a treatment which works well for one cancer patient may not work at all for a patient with a cancer that appears to be identical.

If a member of your family was newly diagnosed with cancer, you would want to search the whole world for information on other patients with similar cancers and ask: which treatments worked and which treatments didn't?

This is what *ProCan* will do.



Future Patient Journey



We study the 'proteins' inside cancers. These protein molecules act as a signature and, along with DNA and other analyses, provides detailed information on that particular cancer.

Over the next 5 years, scientists at Children's Medical Research Institute will analyse tens of thousands of cancer samples from around the world. They will then build a database containing this and other molecular data, along with information on the response of each cancer to treatment.

Then, when a new patient is diagnosed, we will be able to search the *ProCan* database we have created, for cancers with the most similar

protein molecular composition and retrieve information on the treatments that worked best and those that didn't work and should be avoided. This will provide a personalised treatment plan – within 72 hours!

Receiving the best cancer treatment plan first time means the best chance of a cure. It means no time is wasted on unsuccessful treatment attempts, while the cancer continues to grow. *ProCan* is expected to improve survival rates and reduce suffering in patients with most types of cancer.

What *ProCan* means for children like Fred

Some childhood cancers are very difficult to diagnose, and choosing the best treatment plan may be challenging for even the most highly skilled cancer clinicians, as Fred Bellette's story shows.

"Fred was only 3 days old. I noticed a lump on his thigh when I was changing his nappy – but no one knew what the problem was," said mum, Kate.

Kate said, *"Ten days later, we were flown from Alice Springs to Adelaide for a biopsy and MRI. People tip-toed around the 'C' word, calling it a 'mass' or a 'lesion'. In the end, they pronounced it a rare but non-malignant mass and sent us home. I felt something was wrong when it began to change."*

The long journey to diagnosis included tests in Adelaide, then in Sydney (Westmead). At age 6 months, Fred's cancer was finally diagnosed and treatment with surgery and then chemotherapy began, continuing, with terrible side-effects until he was 2 years old.

"It's the most unempowered situation for a parent – a mixture of despair and disbelief, it's just so horrific."



Once the project is complete, *ProCan* will speed up cancer diagnosis and treatment planning for children like Fred. This means fewer tests, fewer disruptive trips to capital cities for diagnosis and treatment, and more importantly, faster action to make sure the cancer is treated early, before more intensive treatment is required.

"This is the place that gives parents like me hope for Fred's future, and a hope that no other child's story has to echo ours."

Becoming a supporter gives hope to families like Fred's.





What *ProCan* means for our scientists

Sadia Mahboob is confident that *ProCan* is going to have a tremendous impact on the future of cancer diagnosis and treatment. Employed as a Research Officer in the *ProCan* laboratory, Sadia is responsible for processing the tumour samples we receive from our collaborating partners, through the latest mass spectrometry technology, helping to extract vital protein data from the cancer samples.

“ProCan pushes the boundaries of cancer research,” says Sadia. “We will be analysing the world’s largest number of cancer samples, and the information will be available to clinicians all over the world. It’s extraordinary!”

Sadia’s goal, through *ProCan*, is to improve the lives of patients. *“I want to push myself to my limits so I know I’ve contributed meaningfully to cancer research. I’m very fortunate to work somewhere where there is a chance that I can, in fact, make a difference.”*

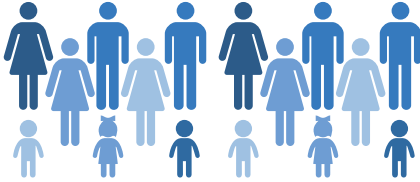
Sadia knows how remarkable the project is and how much it will achieve. But given the results won’t be available overnight, she wants cancer patients to cling to hope.

“I want to make a difference. I want to do good work. And this is something that can make a difference to the future of humanity.”

“I want the public to be optimistic. The ProCan team is working hard to generate a database which will effectively create a new set of pathology tools, so people can get more accurate diagnosis and treatment plans for their cancer. It is so important the public understands that a major project is underway at Children’s Medical Research Institute (CMRI), which is going to make a remarkable difference in how cancer is treated.”

ProCan plans to transform cancer management and save lives.

8 MILLION



cancer deaths
worldwide

TREATMENT
DECISIONS
CAN BE DIFFICULT



because every patient's
cancer is different

REFERENCE LIBRARY OF UP TO



TENS OF
THOUSANDS
of cancer samples

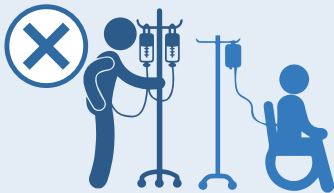
will be created in the next 3-5 years, matched
with the treatment outcome for each case.

PERSONALISED TREATMENT PLAN

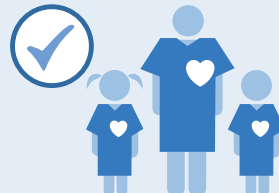
IN 72 HOURS



ProCan will give doctors an accurate diagnosis
and the ability to identify the most effective
treatments available for their patient's
individual tumour



Unnecessary side effects
AVOIDED



Cancer survival
IMPROVED

A wide variety of skill sets are required to make *ProCan* successful – all play a critically important part. These include:

- Clinical oncologists and cancer research pathologists who liaise with collaborators to source suitable samples and frame high-value research questions
- Histopathology and proteomic laboratory scientists who prepare and run the samples
- Software engineers who develop systems for translating raw data
- Cancer data scientists who analyse and interpret results
- An Operations team to help coordinate multiple, complex projects
- An ethics and governance officer to ensure *ProCan* complies with all regulatory requirements

Together they are working to map the proteomic landscape of cancer and improve cancer diagnosis, treatment and outcomes.

“Currently, when an oncologist is making a treatment decision, they estimate the probability that a particular combination of drugs will work for the type of tumour. It can be an imperfect prediction. What we hope to do is find ways to use today’s drugs in a much more effective way.”

Professor Roger Reddel,
Director of CMRI

We believe every patient should have the opportunity to receive the most effective, personalised treatment plan available for their particular cancer. *ProCan* aims to do this - by revolutionising cancer diagnosis and treatment decision-making. *ProCan* will save lives.





ACRF International Centre for
the Proteome of Human Cancer

cmri.org.au | procan.org.au



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Jeans for Genes®

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