

# RCH Alumni

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# Aluminations

FROM THE RCH ALUMNI

August 2022

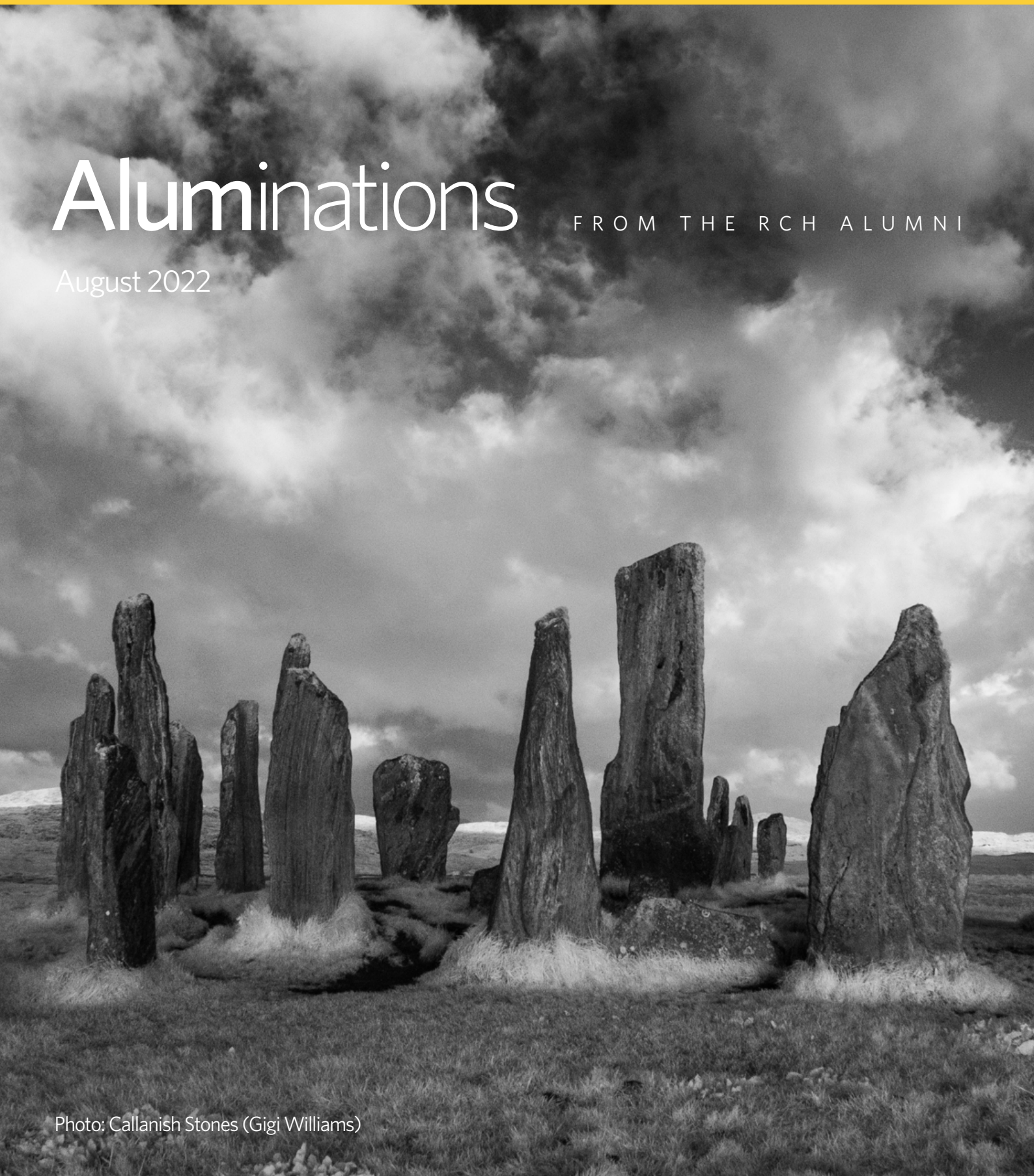


Photo: Callanish Stones (Gigi Williams)



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Cover picture – Callanish stones by Gigi Williams, who writes: “The Callanish Standing Stones on the Isle of Lewis, Outer Hebrides are over 5500 years old. That’s older than the pyramids and twice as old as Stone Henge. And you can walk in between them! The tallest stone is more than 3 metres. This photo was taken at dawn using infrared and we had the place all to ourselves. Truly magical.”

## Credits

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## The 2022 RCH Alumni Executive

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# A letter from the President

Jim Wilkinson AM

The recent lunchtime Alumni meeting, which took place on June 23rd, with Sid Bloch's anticipated talk with the title "Psychiatry – is the glass half full or half empty", brought a new chapter for the Alumni.

Prof Sidney Bloch spoke to an audience of 21 Alumni members and guests and was welcomed by the President, who noted that Professor Bloch had grown up in South Africa under the Apartheid System, which he loathed but felt helpless about changing.

He had "survived morally" while at medical school by volunteering in mission hospitals where tolerance and inclusion prevailed.

After graduating from the University of Cape Town in 1964 and doing his internship in Israel, he came to Melbourne to train in psychiatry.

He had considered paediatrics and even applied for a junior registrar job at the RCH. The letter of "we regret to inform you" was followed the next day by one from the Royal Melbourne congratulating him on getting a position in psychiatry. His fate was sealed.

While at the RMH he also obtained a PhD in medical psychology from the University of Melbourne. A Harkness Fellowship then took him to Stanford University to further his training.

Thereafter, he worked as a consultant psychiatrist in Oxford for 13 years before returning to Melbourne in 1990 to take up an academic appointment in the University of Melbourne based at St. Vincent's.

He was appointed Emeritus Professor upon his retirement but has continued to teach and write.

While mental illness was recognised in ancient Greece and Rome and was the object of scientific speculation, it was only in the late 18th century that psychiatry became a medical discipline.

Notwithstanding, the concept of mental illness remained poorly understood. As late as the Victorian era, terms like insanity and lunacy were used loosely and indiscriminately.

Emil Kraepelin's pioneering observations at that time led to the distinction between "Dementia Praecox" (later renamed schizophrenia) and "Manic-Depressive Insanity" (now called bipolar disorder).



Many other conditions have been differentiated since then, but we are still not certain about how valid most of them are as clinical entities. Autism is a good example. Although first described 80 years ago, it is still not clearly understood.

Lack of scientific evidence about the cause of many psychiatric disorders, including autism, bedevils the field; the same limitations affect determining what forms of treatment are likely to be of benefit.

On the other hand, the advent of genomics and sophisticated neuroimaging techniques has led to exciting research on the underlying pathogenesis of many disorders.

An example in the field of autism is the Working Group of the Psychiatric Genomics Consortium which is looking for risk loci in very large samples.

At the end of his talk, Sidney invited the audience to vote on the question he had posed in the title "Psychiatry – Is the glass half full or half empty?"

It was probably a reflection of his optimism that advances were being made in the neuroscientific understanding of mental illnesses and psychological treatments had progressed substantially that the vote fell in favour of the "half full" response.

Thus, two years without face-to-face meetings came to an end and we were able once again to sit with colleagues and friends and enjoy one another's company, as was the regular routine until early 2020.

The intervening period has been a testing and difficult time for many – not only the Alumni but also the community in general. For us as health care workers the need to wear face masks has been much less of an ordeal than for most outside the circle for whom masks are not a routine part of life at work.

Life is clearly becoming more “normal” in most respects, though Covid still strikes many in the community as also does flu which has come back “with a vengeance” after two years of greatly reduced influenza infections, with associated morbidity, hospitalisations, and some deaths.

The Alumni have managed to keep momentum going with the help of “Zoom”, a new technology for many of us, which has allowed us to run virtual meetings. The first of these took place in 2020 after our last face to face meeting on March 3rd that year when Dr Knowles Kerry AAM Australian Antarctic Division (retired) talked about “The Impact of human activity on the health and well-being of Antarctica’s wildlife”.

Four Zoom meetings (Aluminars) followed in 2020 and another four in 2021.

The first Aluminar in 2022 was a talk “On Matters of the Heart”, given by your President in March who talked about the development of Cardiology over more than 200 years, from the discovery of Digitalis in the late eighteenth century, through the introduction of the stethoscope by Laennec early in the nineteenth century and other technologies such as Xrays, the Polygraph, ECG, etc towards the end of that century and early in the twentieth.

More recent advances have included the arrival of open-heart surgery and interventional cardiology, each bringing dramatic changes and improvement in the outlook for children born with serious heart conditions.

The last “Aluminations” in January brought more articles reflecting on major turning points in several specialty areas.

Roger Allen wrote about Rheumatology, David Boldt on radiology, Kevin Collins on the introduction of new imaging (CT and MR) for neurology, Neil Roy outlined important developments in Neonatology and your President wrote about important advances in Cardiology, in the 1970s.

The deaths of two Alumni members, Dr Helene Wood (anaesthetist) and Professor Ruth Bishop (Microbiologist / virologist) were noted with sadness on our web page.

More recently the celebration of a century (100th birthday) by Durham Smith (pictured right) was an occasion for a happy family gathering.



He is remarkably well with good memory of people and events going back over the decades and he took the opportunity to visit the Children’s Hospital and to meet Alison Errey, Executive Director, Communications and the Chief of surgery Mike O’Brien and pay a visit to the Historical Room and other sites of interest.

I am not aware of any previous members of the Alumni who have reached their hundredth birthday, though Jim Keipert certainly came close.

This edition of Aluminations contains Harley Powell’s report on the Vernon Collins Oration given by Prof Lynne Gillam in October last year. This is a thought-provoking discussion about Lynn’s excellent presentation.

Frank Shann’s historical review of how Intensive care emerged and advanced is an excellent reminder of how far we have come in a comparatively short period of time.

A philosophical article about “Wabi-sabi – A virtue of Imperfection”, by Dominic Wilkinson, who is Professor of Medical Ethics in the Faculty of Philosophy in Oxford University, is thought provoking and sits neatly alongside Harley Powell’s review of Lynne Gillam’s Vernon Collins Oration.

Graeme Barnes’ tribute to Don Cameron completes a moving edition of Aluminations.



# Diaspora of RCH

Spencer Beasley

One of the reasons that the RCH has had such international prominence for so many decades is that it has attracted trainees from around the world to spend several years training at the hospital.

A few stay on, to the benefit of the children of Victoria, but most return to their country of origin. In this way, the influence of the RCH is truly worldwide.

One example is in paediatric surgery. Australia's closest neighbour is Aotearoa New Zealand, and RCH has had a greater influence than any other institution in developing and supporting paediatric surgery in Aotearoa New Zealand. All four AoNZ paediatric surgical hospitals have RCH-trained surgeons in their units.

And in Christchurch, on the larger island of the country, four of the six surgeons were trained in Melbourne. These include two recent appointments, Hemal Kodikara

and Alison Scott, as well as Kiki Maoate and Spencer Beasley. Spencer spent a total of thirteen years at RCH, eleven of them as a consultant.

For its part, Christchurch has also trained several of the current paediatric surgeons in Melbourne: Sebastian King and Michael Nightingale, further strengthening and enhancing the fine reputation of RCH.



**Spencer Beasley ONZM MS(Melb) FRACS is a Professor of Paediatric Surgery and the Clinical Director of the Department of Paediatric Surgery, Christchurch Hospital, Aotearoa New Zealand.**

## Eulogy to Professor Ruth Francis Bishop

AC BSc MSc PhD DSc DMedSc (Hon)

FRACP (Hon): 12/05/1933 – 12/05/2022

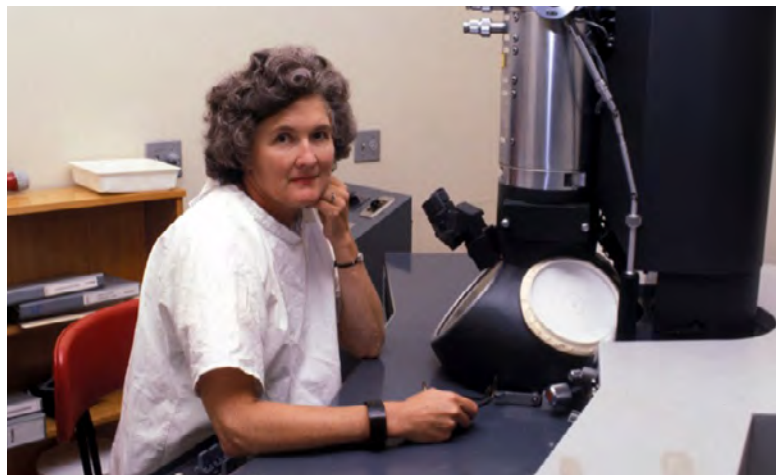
Graeme Barnes

Ruth Bishop's name will forever be linked with the discovery of rotavirus in 1973 - one of the commonest causes of death from gastroenteritis in infants worldwide.

This virus was estimated to kill more than 500,000 children each year in the 1970's. What set her apart, is that she and her colleagues not only discovered this lethal virus, but Ruth also contributed enormously to development of vaccines to prevent its serious effects. Rotavirus vaccination is recommended by the WHO for all children. Since 2008 every Australian child has received an oral rotavirus vaccine, and by the time of her death in 2022 it was included in the routine childhood immunisation schedule in more than 60 countries.

### Her career

Ruth graduated BSc in 1954, MSc 1958, PhD 1961, DSc 1978, and was awarded an Honorary Doctorate of Medical Science in 2010, all from the University of Melbourne.



Her first job was in the Department of Surgery at the Royal Melbourne Hospital, working with Prof Maurice Ewing on gut bacteria. She was then a bacteriologist - not a virologist.

She went to Liverpool, UK with her obstetrician husband Geoff Bishop, and 3 young children from 1962 to 1965, but still found time to be a Research Fellow in the Dept of Surgery at the Hospital where Geoff was working.

In 1968 Ruth was recruited by Prof Charlotte Anderson as Research Assistant in the Gastroenterology Research Unit, and so began her life-time association with the Royal Children's Hospital. Prof Anderson was the 1st Paediatric Gastroenterologist in Australia, and one of the first world-wide. The Department of Gastroenterology, like others in the early days of sub-specialisation in child health, was a

research department, partly funded by the RCH Research Foundation. Ruth assisted Charlo, as she was known, with her pioneering studies on chronic diarrhoea in children, including cystic fibrosis and coeliac disease, at a time when the difference between those conditions was unclear. Ruth became familiar with small bowel biopsy, which later proved to be the pivotal test leading to the discovery of Rotavirus.

## Selected Appointments and Awards

Dr Bishop was a Research Assistant then Fellow in the RCH Dept of Gastroenterology 1968 – 2000, then Senior Principal Research Fellow in the MCRI. She was an NHMRC Principal Research Fellow, and Honorary Professorial Fellow in Dept of Paediatrics, University of Melbourne.

Other appointments included CEO of RCH Research Foundation, Secretary of the National Association of NHMRC Research Fellows, member of the NHMRC Regional Grants Committee, President of the Paediatric Research Society of Australia and Director of the Australian National Rotavirus Surveillance Centre.

Ruth was much better known overseas than in Australia. Dr Roger Glass from the Centre for Disease Control, Atlanta, labelled her 'The Icon of Rotavirus'. She had many roles with WHO, including Chair of the Steering Committee on Viral Diarrhoeal Diseases, Chair of a Scientific Working Group on Immunology, Microbiology and Vaccine Development, Director of the WHO Regional Collaborating Rotavirus Laboratory, and Special Adviser to the WHO Vaccine Development Program. More recently she was a member of the Rotavirus Working Group for the Bill and Melinda Gates Children's Vaccine Program. Bill Gates has published a statement that Ruth Bishop's work was a catalyst for he and his wife Melinda to set up their Foundation.

In 2019 she was appointed Companion of the Order of Australia (AC), which replaced her AO (1996). She smiled when her staff called her Lady Bishop. Other awards included the University of Melbourne 1978 Selwyn Smith Prize for Clinical Research, the 1994 RCH Gold Medal, the Clunies-Ross National Science and Technology Award (1998) and an Honorary Fellowship of the Royal Australasian College of Physicians (2007). She was the first woman to be awarded the prestigious Florey Award (2013).

International awards include the Children's Vaccine Initiative Pasteur Award presented in Geneva by Sir Gus Nossal, wearing his WHO hat. This honour was shared with Dr Kapikian and Dr Flores from NIH Washington, and Dr Glass from CDC Atlanta. In Bangkok she was presented with the Prince Mahidol Award for 'outstanding achievements in medicine and public health worldwide'.

Ruth Bishop had very large numbers of publications (>>200) in prestigious journals, Lancet and NEJM being

amongst them. She was also in great demand as a speaker in the international arena, in USA, Europe, Indonesia, Africa - and the Bunyip Country Women's Association.

So how did the discovery of Rotavirus come about?

Charlotte Anderson who had recruited Ruth, left for the Chair of Paediatrics in Birmingham, UK in 1968. Dr Rudge Townley who had returned from Boston, took over as Director of Gastroenterology. He had a particular concern about acute diarrhoea. There was a special ward for gastroenteritis at RCH, and numbers were such that overflow to Fairfield ID Hospital was needed at times. Dr Townley wanted to apply the new technology, as used in chronic diarrhoea, in acute diarrhoea. Ruth Bishop was Research Fellow in the new Clinical Dept of Gastroenterology. She agreed to apply her bacteriology skills to try to find the elusive cause. Dr Graeme Barnes joined the Gastro Dept in 1971, supported by an RCH Foundation scholarship. His supervisors were Dr Townley and Dr Ruth Bishop, and they explored during 1971 and 1972, possible causes of gastroenteritis. A lot of work by Ruth using her meticulous bacteriology skills, virtually excluded bacteria. However the site of pathology was shown to be the small bowel, not stomach or large bowel. The degree of damage in the duodenum was comparable to that seen in coeliac disease. The site of the lesion was clearly identified.

Ruth was not satisfied with the outcome of 2 years' work. She was impressed with the severity of damage in the small bowel, and felt deeply that it was where the search should be focused. RCH did not have an electron microscope at that time, but she pursued her idea that there might be a virus causing the damage. She discussed her idea with Dr Ian Holmes at the Dept of Microbiology, University of Melbourne, then persuaded Rudge Townley to ask Dr Geoff Davidson, the next Gastroenterology Research Fellow, to do some more tests before he started his own planned research programme. Geoff sent 9 specimens to Ian Holmes.

BINGO!! Ian found a new virus in six of the nine.

Graeme Barnes came back through Melbourne in 1973 from UK on his way to a job in Dunedin, NZ.

"We think we've found it", she told him.

Geoff Davidson never started on his project! He embarked on a prospective 15 month survey of all children admitted to RCH with gastroenteritis. He found that Rotavirus caused gastroenteritis in > 50 % of the 378 children admitted. Cases where the cause was known went up to 73 % in 1974, from only 12% in 1972. This finding was then rapidly confirmed in Birmingham, Washington and Toronto, once everyone knew what to look for.

Soon afterwards, Ruth met Dr Yati Soenarto in Indonesia, who has collaborated with the RCH Campus ever since. Her study in Yogyakarta reported in 1981, showed that rotavirus was also the most common cause of

gastroenteritis in Indonesian children. It soon became clear that Rotavirus infection was the most common cause of severe dehydrating diarrhoea in children worldwide.

It was a virus: perhaps a vaccine could be developed, and in fact several very successful oral candidates have been. All give the 1st dose after 6 weeks of age – too late in some parts of the world.

After the discovery, Ruth worked with the next Research Fellow, Dr Don Cameron, and found that many healthy full-term newborns in Melbourne obstetric hospitals were excreting a unique strain of rotavirus, yet had no symptoms. Graeme Barnes returned to Melbourne in 1975, and the team conducted a three year follow-up of infected neonates, versus those who were known not to be infected during the first weeks of life. It showed they were protected against the severe effects of community outbreaks of rotavirus. So it might be an ideal vaccine. This unique strain called RV3.BB, was developed by Ruth's team. It came from neonates with no symptoms, and has been successfully trialled giving the 1st dose at birth, in Melbourne, New Zealand, Indonesia and Malawi, by Prof Julie Bines who now leads the team. Birth is the best time for access to infants in some parts of the world. It is likely to be introduced into the Indonesian infant immunisation schedule in 2024, and probably elsewhere in Asia. This may help further reduce global gastroenteritis mortality, which has already fallen from more than 500,000 per year to 200,000 per year, using current rotavirus vaccines.

Throughout several decades Ruth trained a large number of scientists – national and international. They enjoyed a terrific relationship with their boss, and they regarded her as a real friend. Many influential international colleagues lined up at a conference in Melbourne in 2016, desperate to get their photo taken with 'The Icon of Rotavirus'.

Ruth was a team player, always giving credit to her staff. They adored her.

Socially, Ruth and Geoff from time to time hosted the whole Department at their home in Kinane Street. On one memorable occasion Geoff popped a champagne cork, which went directly up and smashed a fluorescent light. Tiny slivers of glass and powder descended on a great smorgasbord. Ruth was only fazed for a moment. Emergency steaks were procured from the freezer and the barbecue fired up. She always had another strategy available.

Ruth's children and grandchildren will realise over time that she was one of the world's really great scientists, who contributed immensely to the welfare of children around the world.

PS: The RCH no longer needs a special ward for children with gastroenteritis.

*Adapted from a Eulogy presented by Graeme Barnes at Ruth Bishop's Memorial Service on 24th May 2022.*

## Eulogy to Ruth Bishop

Tom Bishop

Ancient philosophers thinking about the conditions of human life made a distinction between the "gifts of Nature" and the "gifts of Fortune".

The gifts of Nature are the endowments we are born with, or develop from those we have at birth.

The gifts of Fortune are the circumstances we come into or encounter during our lives – accidents, disasters, opportunities, pieces of luck, and so on.

Our mother, Ruth Bishop, born Ruth Langford, was blessed both in gifts of Nature and of Fortune.

She made of both an extraordinary life, by effort, careful management, diligence, readiness, and some luck.

She also faced, as most people do, challenges of Nature and Fortune, some of them generic, some of them particularly hers. She overcame them with the same combination of virtues and strengths.





## Her gifts of Fortune

She was born to loving parents in a beautiful, prosperous, and peaceful country, and though it was disrupted in her early years by Depression and by War, as a child she had relatively little sense of these things.

By the time she was 12 the war was over and the optimism of the years following, years of hope, of renewal, and of betterment, shaped her outlook and her intentions throughout her life. A measure of her Fortune as an Australian child is given by some of the events that marked the month of her birth, May 1933:

- Aryan activist students burnt 25,000 “Ungerman” books before the State Opera house in Berlin.
- The Republic of China ceded Manchuria to the Empire of Japan, in an attempt to turn aside an army advancing on Beijing.
- Mohandas K Gandhi began a lengthy fast against untouchability.
- Franklin Roosevelt signed the Federal Emergency Relief Act
- And the first modern sighting was reported of the Loch Ness Monster.

Frankston, where she grew up was a gentle, supportive, and attractive small community, as she found it. She loved the beach. She loved cycling up and then, thrillingly, back down

Oliver’s Hill which rises steeply from the pier into Mount Eliza. A surviving diary from 1946 records her activities at 12: getting up early, swimming, tennis, Maths, movies, being elected form captain, seeing the mysterious “X” at school.

Her parents were educated, and committed to education, though not necessarily to hers, since she was a girl, who would probably marry and have children. She did both. Her father, fifty years older than her and a Gallipoli veteran, was headmaster of the High School. Her mother had an MA in French, but left off teaching to marry the headmaster and have children, and never returned. Ruth recalled him as oddly shy, given his position; her as often anxious and depressed, a trait that worsened over time.

## Her gifts of Nature

She was quick, intelligent, resilient, active, purposeful, generous, and friendly. If she could be sharp, she could also be kind. Mostly she held her tongue, as girls were taught to. She demanded as much of herself as of anyone else. Perhaps more. She was a hard worker, not easily discouraged. There survive from her early years – she kept them -- certificates of achievement for Swimming, Lifesaving, English, French, Science, Mathematics, Cookery, and Flower Arranging. At age 8 she raised

a pound for War Relief. At age 10 she passed the Temperance Physiology Examination of the International Order of Rechabites. She belonged to the Gould League of Bird Lovers. She was a prefect and the captain of a sports team. The world was her oyster, if she could only pry it open.

Except, of course, that it wasn’t. She was a woman. Though she excelled in, and was passionate for, Science, most girls in her class left school to marry.

Her family had few means to devote to a girl at University, having also two boys to provide for. They had enough money to fund her only for a “teaching degree” in Science – one that left out crucial higher studies not considered important for a teacher to know.

And so she began her truncated University career, riding up and down on the train from Frankston, stopping on the way home to watch MCG cricket, sometimes staying with her aunts in Bentleigh.

But then – a stroke of Fortune. At age 20, she and three other family members together won the Paterson’s Family Quiz on 3KZ. Her question was “What do the letters ANZAC stand for?” With part of her prize money, she was able to buy out her teaching indentures and self-fund an Honours degree in Science. But without the correct guesses of her three other family members, her career as a scientist would likely never have begun.

Even so it was not a smooth path. She was turned down for a fellowship early because, as she was told, “she would only get married and have children”.

Just as in 1971, when she applied for entry into medical school she was turned down because she was married. A further attempt in 1973 was abandoned after discouraging noises from the Dean, despite letters of support from senior medical colleagues in microbiology.

She was indeed married. At the University, she had met a young medical student, Geoffrey Bishop, whose father, as it happened, had been displaced by hers at Frankston. In fact, they had even met as small children twenty years before.

For the two of them, fortune and nature were closely aligned. In surviving diary entries, she speaks of conversations in which they discovered shared goals, hopes and ambitions for lives of optimism and the endeavour of betterment.

Soon, they chose to share those lives as well. They shared them for sixty-two years, three children and the exhausting combined rigours of parenting and professional devotion.

My mother is famous for her medical discoveries, as Dr Barnes has ably recounted. Less well-known is the sustained effort of persistence and of balanced



calculation that went into them. Those who felt it would be too much were wrong -- but not by much.

She stopped her research work for a time when she went to England with her two small children – in effect a single mother on a six-week sea voyage.

The solo journey, and the living conditions on arrival in Liverpool were not easy. 1963 was the coldest UK winter in more than 200 years, and the family had little money on a junior doctor's salary. Geoff ate at the hospital to save expenses. Ruth developed anaemia from starving herself to feed the children. One night Ruth found ice on her daughter's blankets. As she wrote wryly later "We've not enough money/ We don't like the meat,/ We can only afford to buy cake./ The heater's not working/ We're cold at the feet/ The frost makes the window opaque."

Three years later they returned to Australia, Geoff determined that his skills should benefit Australia – even though he was invited to stay.

Ruth was heavily pregnant with Michael, so they travelled home by an Italian ship – the only national line that would accept her. At the Port of Melbourne on arrival, brother-in-law Rupert Scott shouted through the customs grate at the arrivals "She's a good-a country!"

In the late 1960s, Ruth returned more fully to her research, pushed in particular by Geoffrey, who was concerned her talents would be wasted and her energies blighted by inactivity. But she worried about the effect on her children at a time when working mothers were an anomaly, even a scandal. To answer this anxiety, she worked part-time only at the Royal Children's Hospital, during school hours, on grants she won herself rather than as a regular employee.

For years she drove in once school began and returned in time to be at home after school. Research was confined to school hours. She wrote her scientific papers in the evenings after we went to bed, late into the night while Geoff was still out seeing patients. She attended evening cooking classes and parent evenings. She drank copious amounts of coffee. She looked after her mother in her failing health and saw to her aunts' welfare. On Saturdays she played tennis. She barely had a moment not actively assigned. She was frequently very tired, and not infrequently stricken with depression, an affliction she inherited from her mother.

Nevertheless, she persisted, as she always did. She pushed through. The first Monday of every month she spent in the hospital library, reading through that month's journals. She did fulltime medical research on half-time hours more or less for her entire career. She was always home by 3.30. Her children were safe, healthy, loved, supported. She was dedicated, modest, committed and efficient. Later, children grown, she became an international traveller, chaired committees for the WHO,

addressed conferences around the world, beginning with the first one she attended in 1964 in East Berlin, where she recorded that halfway through her talk she become terribly bored with everything she was saying. Nevertheless, she persisted, as she always did. Dozens of photograph albums record her decades of journeys, her colleagues, her awards, her addresses. She was always ready to share her work and its implications with audiences, scholarly and otherwise.

Alongside groups in Seoul, Geneva, and San Francisco (the latter including a devastating earthquake unexpectedly in its programme), she addressed community groups at home, such as the Bunyip Country Women's Association. When she asked another country CWA if she might show some slides she would bring, she was told "Yes, but it takes about half an hour to get the blankets up for them." She went anyway, but without the slides.

In 2017, Ruth was diagnosed with Alzheimers, which had already affected Geoff. Together, Ruth and Geoff made the brave decision to move into assisted age care at Regis Brighton as spouses and best friends for almost 60 years. At first, they shared a room, until this became impractical. She continued to care for him. Family time was especially precious, with visits from children, grandchildren and friends. After Geoff passed away in 2019, she kept his photograph, grinning cheekily from their kitchen table, in her room. Often she would ask after him. When she died last week, it was, with characteristic exactitude, on her eighty-ninth birthday. And punctually this month, the Loch Ness monster has reappeared to greet her.

Throughout her life, Ruth Bishop's driving impulse was her early vision of a better world, for her family, for her generation, and for those to come. It was a vision at once global and local, born in the shadow of a terrible worldwide struggle, shaped by a view of the blue

horizons from the top of Oliver's Hill. It was a good place to start a life, but she wanted the good and the life for a wider world. Science was the path to that world and that good, and she dedicated herself to it persistently throughout her days. What Nature and Fortune had given her, she shaped for her own self-chosen ends -- and for others. If she engaged in Mental Fight, it was always with the problem before her; if a sword was in her hand, it was always the sword of Example. Her "I" was always a "we". She leaves behind her the record of a woman of great heart, great love, great intellect, and great achievements. It is literally true that millions owe their lives to her work. She loved the world sometimes beyond words, but never beyond endeavours. In turn, she will be loved and valued beyond death by the world that she made a better place.

**Tom Bishop is the son of Ruth Bishop, a Professor of English and Undergraduate Advisor, English at University of Auckland | Waipapa Taumata Rau.**

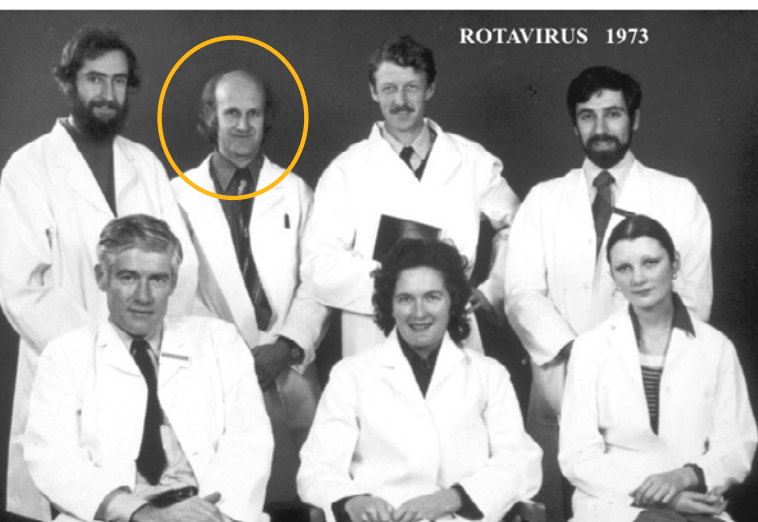
# The Sole Behind Rotavirus

Michael Harari

In 1982 I was a junior resident at RCH. After seemingly endless years of undergraduate study I felt the need to do something “creative”. While cycling home from RCH after a sleepless night on call, I rode past a shop called “Cobblers” in Greville St, Prahran. Inside, there was a smallish man, with a bit of tummy, overalls and long white beard with wiry ends. My first impression was that of a kindly pixie at the bottom of the garden fixing shoes. This gentle man with gleaming eyes was called Max Murray. He was shy, of few words and while almost averting his gaze from me, was working his will onto a piece of leather.

When he finally looked up, I blurted out that I would like to learn to make shoes if he would take me on, I could only serve as his apprentice once a week for a few hours. Without asking who I was or why I might want to make shoes, or why for only a few hours each week, he gave me a broom to sweep up leather dust. For the next few months, once a week, after my night on call, I rode past his shop and swept his floors in varying degrees of fatigue. One day, he allowed me to cut some leather, followed a couple of months later by my first sandals. Each week I would start with the floors, and progress, usually nodding off at some stage. We didn't speak much, however the silences felt comfortable.

On one occasion, for the first time since we met, he surprised me and asked a bit about me and why I was always so sleepy. Not wanting to intrude on his minimalist style, I told him I was a doctor and left it at that. A month or so later he asked what sort of doctoring I might do, to which I answered that I was training to be a paediatrician. Weeks later he asked if I was training at RCH? It was after yet a few more weeks of swept floors, patterns of cut leather and poorly made sandals, that he mumbled to me: “I worked at the Royal Children's once”.



Brian Ruck    Max Murray  
Rudge Townley

Ian Holmes  
Ruth Bishop

Geoff Davidson  
Anneke Veenstra



Well blow me down! When my jaw was back in place, I stuttered a few interrogatives such as “what, where, why, who, when”?

Max had been Ruth Bishop's laboratory manager at RCH. He was an applied chemist before the age of ubiquitous PhDs, when just having a BSc was ample qualification for exacting scientific tasks that required ingenuity and a sense of inquiry. In the 1970s he was instrumental (along with Ruth, Geoff Davidson and others) in the discovery of Rotavirus as the preeminent cause of diarrhea in children. I never felt that it was mine to ask the obvious question of what made him leave cutting edge science for cutting shoe leather. However it was plain, though barely spoken (as with most things with Max), that after the euphoria of the discovery and exalted publications, he felt that he had achieved what he had wanted, and was ready to move on. Gastro lab's loss was shoemakers' gain.

I lost contact with Max and Sue his partner, several decades ago. Every few years I see someone wearing his sandals and pounce on them - no doubt giving those wearing them a fright. But whoever made them has either copied or bought his moulds, and the strands of information about their manufacture are too loose and ragged to tie up and lead me back to him.



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# Changing ethics over time

Harley Powell

Professor Lynn Gillam's excellent Vernon Collin's Oration on Wednesday, 6 October described how important compassion, honesty and integrity are in our clinical decision-making. She set me thinking about how such decision-making changed with medical advances over the nearly 5 decades that I worked at RCH (1969-2017), and therefore how the ethics of clinical advice changed over time. The basic need for compassion, honesty and integrity remained the same but the ethical advice we give has changed dramatically.

When I was a medical student at RCH in the early 1960's we were taught that acute lymphoblastic leukaemia in children was invariably fatal with a prognosis of, on average, about 3 weeks to death. Dr John Colebatch (JHC), the first haematologist at RCH, tried a few marrow-suppressing drugs like methotrexate, 6-mercaptopurine, and vincristine and managed to extend survival out to 6 weeks but at the cost of a miserable existence, mostly from severe drug side effects. Many general paediatricians at the time felt there was no benefit from such treatment and refused to refer leukaemic patients to JHC because they considered it unethical. A quick death was considered more kind and compassionate. As we all now know, JHC pressed on with his "unethical" treatment, improving it incrementally over the years until now the large majority of children are cured of their disease and it would be unethical not to advise treatment. Those early cases, who suffered so badly, were the 'guinea pigs' in an 'unethical' experiment which turned out to be successful, and now saves many lives.

There are many examples in the history of medicine of unethical experiments which are well known because they have turned out to save lives. Perhaps the best known is Edward Jenner's trial of cowpox vaccination in 1798 when, after infecting an 8 year old boy, James Phipps, the son of his gardener, with cowpox, he later injected the boy with smallpox scabs to see that immunity to smallpox was established. Because it risked the healthy boy's life, such an experiment would be considered highly unethical today although it must be acknowledged that Jenner has "saved more lives than any other human".

Many medical advances depend on our patients taking on risks of experimental treatments. This is ethical provided the potential risks are proportionate to the hoped-for benefits, and provided the patient is fully informed as well as possible. During my time working with David

McCredie in the Nephrology Unit at RCH, many new treatments for potentially lethal renal conditions were attempted, always with parent's informed consent. Among the many treatments that we tried were streptokinase and prostacyclin for haemolytic-uraemic syndrome, frusemide for acute post-streptococcal nephritis, high dose fluoride for osteoporosis, and many variations on peritoneal dialysis techniques. Many of these experiments lead to significant advances but others were abandoned because of absence of benefit.

In the 1970's, 1980's and 1990's, we did not recommend end-stage renal failure treatment (dialysis and transplantation) for children less than 5 years of age because the outcome was so uncertain and we felt there would be less suffering if the young child died quickly. Also, for the same reason, several parents of older children at that time decided not to proceed to dialysis, and to let their child die. Now-a-days, even infants are accepted for dialysis and eventual transplantation, and most survive to adulthood. I am aware of a 52 year old ex-RCH patient alive and well 40 years after we transplanted him at the age of 12 years.

In the 1970's and 1980's, we tried hard to ensure patients and parents gave fully informed consent by spending long consultations with them. But in retrospect, it was unwise to assume informed consent could always be obtained from non-medically trained parents faced with complicated treatment proposals. For example, how does one, in simple terms, explain intra-renal artery prostacyclin infusion for a few days as an experimental treatment to protect the kidneys in severe haemolytic-uraemic syndrome (which has a high likelihood of end-stage renal failure or death). In the 1990's, medically informed ethics committees were established at the hospital and became available to approve experimental treatments before parents were ever approached.

Unfortunately, no current ethics committee would have approved Jenner's smallpox experiment and the world would be poorer if not for his foresight and good luck. Jenner's experiment probably would have been ethical today if he had used himself as the subject, or if, like today's vaccines, the incidence of disease (smallpox) was assessed in large groups of subjects given cowpox or placebo. But controlled clinical trials had not been invented in 1798, so Jenner's experiment was probably ethical at the time because it was the only available way to obtain this life-saving information.

What is considered ethical by an ethics committee depends very much on the personal biases and individual ethics of members of the committee. Twenty years ago I was asked to join the Bioethics Committee of the Uniting Church. We were asked to decide on the ethics of abortion and euthanasia and to advise the Church accordingly. After many meetings over several years, 5 of the 10 members of the Committee produced a report



approving the ethics of both abortion and euthanasia while the other 5 members reported that these practices were unethical. Clearly, there is a strong individual bias in ethical decisions and what is right for some people is wrong for others. I am certain that all 10 members of the Bioethics Committee acted with compassion, honesty and integrity, and yet they came to different conclusions. So we must conclude that there is no absolute ethical basis for many medical decisions, even when made by a responsible ethics committee which systematically considers all available facts and principles pertaining to the situation. Instead, we must always listen carefully to, and be guided by, individual patient's opinions and choices. This importance of individual choice is the basis of the current introduction, by the Australian States, of voluntary assisted dying in Australia. Previously, assisting

dying suffering patients to end life was illegal because it was felt to be unethical, but advancement in our understanding of individual rights has made what was once unethical, now ethical and legal.

Professor Lynn Gillam's lecture emphasising compassion, honesty, integrity and informed consent is a great basis for ethical decisions but we need to always remember, firstly, that individual choices are critical and must be respected and, secondly, an action or treatment which is ethical today may not be so in future, and unethical treatments may become ethical.

**Dr Harley Powell is a former Director  
of Nephrology at RCH**

# History of the RCH Intensive Care Unit

From the beginning until 1998

Frank Shann

(Adapted for Aluminations by Jim Wilkinson)

The Free Hospital for Sick Children opened in Stephens Street (now Exhibition Street) in 1870, moving to 13 Spring Street in 1873 and to Pelham Street in Carlton in 1876.

It remained in Carlton for nearly ninety years, during which time there were many upgrades, extensions, and other structural changes to the hospital. Throughout this long period patients needing high dependency care, such as those having thoracic or cardiac surgery, or neurosurgery, were nursed in the wards.

No facilities existed for prolonged ventilation until the 1960s when a baby with inadequate spontaneous ventilation following a lobectomy for congenital lung cyst was left intubated and was hand ventilated overnight until adequate spontaneous ventilation was re-established.

Successful prolonged endotracheal intubation of children (pictured right) emerged in 1962 after an Adelaide medical graduate working in Beirut, Lebanon presented such heroic therapy.<sup>1</sup>

The RCH moved to Parkville and to "The Royal Park" in 1963 and in the new hospital half the recovery room was designated "Surgical Intensive Care". It was run by the Department of Anaesthesia whose director was Dr Margaret McClelland and Assistant Director was Dr

John Stocks. Sister Betty Jaffray became the nursing supervisor. Late in 1963, the first prolonged intubation at RCH was performed to allow decannulation of a baby who had had a tracheostomy for tracheomalacia following a tracheo-oesophageal fistula repair; the baby was successfully extubated after 5 days.

In 1964 there were 457 admissions to ICU and artificial ventilation of children began and progressed to infants and neonates, using adult ventilators with modified circuits. Subsequently patients were paralysed using curare so that more effective ventilation could be achieved. Initially, the patients admitted were thoracic and cardiac patients, but occasionally casualty patients were admitted with head injuries. Cardiac surgery was largely confined to patients over 5 years of age, because of technical difficulties with cardio-pulmonary bypass. Inevitably many children had become "inoperable" by this age having developed irreversible pulmonary hypertension before surgery could be performed.



The world's first formal publication describing prolonged nasotracheal intubation in children was a report by Ian McDonald and John Stocks of 50 neonates and children treated in the RCH ICU in 1965.<sup>2</sup>



1967 brought the appointment of Dr Kester Brown as the ICU Medical Officer; he was the first doctor to be appointed specifically to intensive care. In that year there were 346 admissions to ICU (103 intubated), average stay 4.1 days. The ICU was still located beside Theatres, in the area which became the "recovery area" subsequently. It had an 8-bed capacity but frequently overflowed into the "recovery side" of the same room. Electrical and gas outlets were limited, and it was not unusual to have extension cords trailing along the floor. Space between the beds was minimal, often allowing only one nurse at a time between beds. Babies were nursed crossways on baby cots with electric blankets and prewarmed clothes and blankets; they were sometimes covered with clear plastic sheets. Headboxes were used as baby boxes before overhead heaters were introduced. There was only one ECG monitor. Bennett PR2 and Bird ventilators were available, and Donnelly-Wilson humidifiers were used (these were large stainless steel electric kettles with a hole in the top for a thermometer and a knob to adjust the current flow to the heating element). There were minimal waiting facilities for parents, and visiting hours were restricted. A baby born on 2nd March 1967 with a tracheo-oesophageal fistula, a split larynx and hemivertebrae was intubated for about 7 months.

In 1968 similar numbers were treated in ICU and the staff running ICU were Dr Helene Wood and Dr JG Stocks with Dr Kester Brown being the Uncle Bobs Fellow in ICU. In the following year (1968) Dr John Stocks became the first Director of ICU. The Anaesthetic staff then included Drs Helene Wood, Kester Brown, Mary Dwyer, AA Bishop, B McKie and KJ Williams. There were 8 fulltime registered nurses, who were supported by student nurses rotating through the Unit. It was still occasionally necessary to

hand-ventilate children for hours at a time because there were not enough ventilators.

In April 1969 a child presented with acute epiglottitis (caused by *Haemophilus influenzae* infection); normally children with epiglottitis had a tracheostomy but, because the people who did tracheostomies were away at a meeting, the patient was intubated - and made a good recovery. Subsequently, children with epiglottitis were routinely treated with nasotracheal intubation rather than tracheostomy; RCH was the first hospital in the world to do this.<sup>3</sup>

The technique of deep hypothermia and circulatory arrest, which allowed corrective cardiac surgery to be performed in infants with complex cardiac defects, was adopted at Green Lane Hospital in Auckland, New Zealand in 1967 and then in Melbourne in about 1970. Mr CP Clarke was appointed as the Cardiac Surgeon, and Dr Kester Brown worked as the perfusionist, also doing research at RCH and at Monash University.

CPAP was used to treat neonates and premature infants with respiratory distress immediately after a talk given by Dr Mary Ellen Avery at the RCH Centenary meeting in April 1970. Initially it was not realised that lower oxygen concentrations needed to be used with CPAP, until Dr Alan Williams (pathologist) pointed out the increase in pulmonary oxygen toxicity. Ventilation was first used to treat hyaline membrane disease at RCH.

In 1971 Sister Dos Flett was appointed Nursing Supervisor and Sister Louise Blewett was appointed Charge Nurse. In the following year Dr Stocks reported the next 300 patients to be treated with prolonged nasotracheal intubation - with no subglottic stenosis.

In 1973 the Plastic Surgery Unit was relocated to the northwest building from 2 East, which became the new ICU in 1978. Dr Peter Loughnan was the first Physician (non-anaesthetist / anaesthetic trainee) to be appointed to ICU (as an Anaesthetic Registrar).

Following the death of Dr John Stocks in 1974 Dr Kester Brown was appointed Director of Anaesthesia, and Intensive Care became an autonomous department with Dr Geoff Barker as fulltime Director. Dr Geoff Barker started planning the new intensive care unit. The first IMI radiant heaters for neonates were purchased. The Post-basic Nursing Course in paediatric intensive care was established and conducted by Sister Heather Telfer.

In 1975 Dr Geoff Mullins was appointed Medical Officer to ICU (helping Dr Barker). A blood gas analyser became available in Biochemistry (on the 9th floor) in 1975 - before this, pCO<sub>2</sub> and acid-base were assessed on an Astrup analyser in a side room between theatre and ICU, and oxygenation was adjusted by lowering the FiO<sub>2</sub> until a tinge of cyanosis appeared and then increased by 5%.

The first arterial line in a neonate at RCH was put in by Dr Karl Alexander.

1976 saw 861 admissions and Dr Geoff Barker left to become Director of PICU in Toronto. Dr Geoff Mullins was appointed Director of ICU and Dr Alan Duncan was appointed first as fellow then Specialist in ICU. This was the first time the Unit had three fulltime senior medical staff - Mullins, Duncan and Dr Noel Hosking (Fellow 1976-77); the ICU Registrar was Dr Frank Shann, and this was the first time that the Hospital's Chief Resident had worked in ICU. Bournes ventilators for infants and E-for-M monitors were purchased. Intracranial pressure was monitored for the first time at RCH using a catheter in a lateral ventricle of the child's brain. The Newborn Emergency Transport Service (NETS) was established at the Royal Women's Hospital by Dr Neil Roy.

On 10 October 1978, patients were transferred to the new 16-bed Unit in the previous 2 East ward. The new unit had a 16-bed capacity, with biochemistry and electronics laboratories, an X-ray bay, offices close to the Unit, parent waiting rooms, large storage and cleaning areas, and an on-duty doctor's sleeping room. The first Servo ventilator was purchased, and Bennet PR2 ventilators were gradually phased out of use. The first Secretary to the Director of ICU, Stella Vasiliou, was appointed. Mr D'Arcy Sutherland was appointed interim Director of Cardiac Surgery (while President of the RACS) and recruited Mr Roger Mee, then an adult cardiac surgeon at the Brigham Hospital in Boston, who started at RCH early in the following year.

The new Unit was officially opened by Dame Patricia MacKinnon on 31 May 1979. The Paediatric Emergency Transport Service (PETS) was established by Dr Alan Duncan. Collaborative research began between RCH (Duncan and Tibballs) and CSL (Dr Struan Sutherland) on pressure immobilization first aid for envenomation, and testing of funnel web spider antivenom.

A fulltime medical technologist, Mr Mark Hochmann, was appointed in 1980 and Dr James Tibballs was appointed as ICU Fellow then Specialist.

In 1981 Dr Mullins arranged the first home ventilation run by RCH (gas cylinders were delivered to the house to drive a Bennet PR2 ventilator) - for a patient who lived near RCH and had traumatic quadriplegia. Later that year Dr Geoff Mullins left to work in Toronto and Dr Alan Duncan was appointed Director of ICU. Peritoneal drainage and dialysis were first used in infants after open heart surgery; this became common practice. Sister Lucy Cuddihy was appointed Clinical Nurse Educator.

1982 brought 1020 admissions, the first year to exceed 1000. Sister Louise Blewett was appointed Nursing Supervisor and Sister Margaret McPhee Charge Nurse. Dr Frank Shann was appointed as ICU Fellow then

Specialist (the first Physician in this role). ICU assumed responsibility for resuscitation throughout the Hospital.

Sister Geraldine McDonnell was appointed Charge Nurse and Sister Lucy Cuddihy as Course Coordinator in 1983 with Ms Christine Clark appointed as ICU Ward Secretary. Stella Vasiliou, secretary to the Director, left to marry Giovanni Stellin, the Cardiac Surgery Fellow. Mr Roger Mee performed the first arterial switch (for transposition of the great arteries) at RCH.

The following year brought Sister Margaret Farley appointed as Charge Nurse and Sister Jackie Williams Clinical Nurse Educator. Ms Kim Ang was appointed as Secretary to the Director of ICU. Dr Robert Henning was appointed as a locum Specialist in ICU. Mr Tony Osborne was appointed as ICU Technician assisting Mark Hochmann, so that a technician was on call at all times.

In 1985 Dr Jim Tibballs became Deputy Director of ICU and Dr Robert Henning was appointed as a Specialist in ICU (the first time there had been four ICU Specialists). Sister Lucy Cuddihy was appointed Nursing Service Coordinator. Haemofiltration was introduced into the Unit. An on-call social work service was provided for ICU. Dr Warwick Butt was appointed as a locum Specialist in ICU (covering Tibballs and Shann).

In 1986 Dr Alan Duncan left to work in Perth. Dr Frank Shann was appointed as Director of ICU and Dr Warwick Butt as Specialist in ICU.

1987 was the first year in which home mechanical ventilation was established.

1988 brought 1462 admissions with 1101 intubated and an average stay of 3.1 days. ECMO and LVAD were first performed, and the first cardiac transplant was done. Mr Bradley Carter was appointed as the third ICU Technologist (the name was changed from Technician). Two registrars were always on duty in the Unit for the first time, with a 2-week night shift.

In 1989-90 Dr Judith Kermode was the first full-time Research Fellow in ICU (on an NH&MRC Research Fellowship): she studied vasodilator drugs in infants after cardiac surgery and was awarded the first MD for research done in RCH ICU. Sister Sandra Willis was appointed PICNC Co-ordinator.

Nasal mask mechanical ventilation was introduced in 1990. In May the Unit moved temporarily to the new Neonatal Unit (in the previous CSSD area on the south side of 2E) and moved back again into the refurbished 24-bed unit in November. The ICU laboratory was staffed 24 hours a day by pathology for the first time. Dr Michael South was appointed as a locum and then part-time Specialist in ICU (giving a total of 4.25 consultants).

In 1991 the Neonatal Unit began ventilating patients. Controlled trial of craniotomy for traumatic brain injury





Professor Frank Shann

began. An "ICU bedcard" was introduced with all patients to have a "parent unit" bedcard as well.

In 1992 the Anaesthetic Department stopped providing Registrar and Consultant (Dr Bob Eyres) cover to ICU. High frequency oscillatory ventilation was introduced to RCH in the same year, by ICU.

1993 saw Ms Aileen Britton appointed as Unit Manager (Charge Nurse). Administration of the funding of the home ventilation service was transferred to an independent group within RCH. Mr Roger Mee left RCH to work in Cleveland, Ohio, and Mr Tom Karl became the senior Cardiac Surgeon.

In 1994 the Paediatric ICU Nursing Course was transferred from RCH to the University of Melbourne. Ms Kim Ang left ICU to marry Dr Rob Ebert; replaced by Lil Clark. Ms Sharon Kinney was appointed PICNC Coordinator. In 1995 Frank Shann was appointed as the

first Professor of Critical Care Medicine in Australia. Work started in 1996 on building a helipad and link to ICU, and on moving the entire RCH Auto-Lab onto the second floor adjacent to ICU.

In 1997 the Helipad and Auto-Lab construction were completed and Lil Clark retired; Wendy McHugh started as ICU Secretary. Frank Shann and Tony Slater published the Paediatric Index of Mortality (PIM) which is an equation that calculates the probability of death at the time of admission to ICU, and it is now used routinely for all PICU admissions in Australia, NZ and the UK to monitor the quality of care.<sup>4, 5</sup>

By 1998 ICU nurses were no longer required to supervise home ventilation staff. In the same year ICU became able to admit patients under its own bedcard (without always having a "parent unit" bedcard).

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*Incense. St Bartholomew's Anglican Church Burnley*  
Photograph by Garry Warne





# Wabi-sabi – a virtue of imperfection

Dominic JC Wilkinson

*Autumn twilight falls,  
The road ahead stretches out  
Empty and forlorn.*

Basho<sup>1</sup> wrote this haiku in late 1694, shortly before his death. Translation DW

The surface is asymmetrical, the pigment flecked and uneven. Looking close, what seems at a distance to be smooth is actually covered in tiny gentle indentations and irregularities. On one edge, there are a series of fine lines – evidence of past damage, and repair. It is obviously old. But its age is part of its specialness. It is simple, one of a kind, beautiful.



What, you might ask, does this have to do with medicine? Pottery and aesthetics seem a long way from pathology and medical ethics.

First, some elements of medicine (particularly surgery) have explicitly aesthetic components. Wabi-sabi could apply to human beauty as well as to beautiful objects. The description above, although nominally of a bowl, could equally be that of the ageing face or hand of a grandparent. Second, a key element of aesthetics relates to what we choose to value (and the experience of valuing it). Although not typically thought about in artistic terms, central questions in medicine and medical ethics relate to the value of health and the value of life. Wabi-sabi might be particularly pertinent to those.

Wabi-sabi is linked to and derived from Shintoism (especially in its nature worship) and later from Zen Buddhist philosophy, in its acceptance of natural transience and imperfection.<sup>3</sup> The underlying ideas, however, are not specific to that religious tradition. In the mid nineteenth century, English art critic John Ruskin articulated an argument that overlaps with wabi-sabi.

*“Imperfection is in some sort essential to all that we know of life. ... In all things that live there are certain irregularities and deficiencies which are not only signs of life, but sources of beauty.”<sup>4</sup>*

The essence of wabi-sabi appears to reflect a feeling, or an attitude rather than simply a label or quality. We could think of it as akin to a virtue. In medicine, wabi-sabi could be relevant in at least three different areas.



## Wabi-sabi tea bowl

ottmarliebert.com from Santa Fe, Turtle Island, CC BY-SA 2.0 via Wikimedia Commons

The above is a description of a Japanese stoneware tea bowl, like the one pictured, embodying an aesthetic dating back to at least the 16th century called wabi-sabi.

Wabi-sabi is famously difficult to translate, but derives from the words wabi – indicating austerity, simplicity, the quiet life, and sabi – indicating maturity, solitude, naturalness. Wabi-sabi refers to the aesthetic appreciation of natural imperfection, and impermanence.<sup>2</sup> It is embodied in a tradition of handmade pottery, sometimes including repair of past breaks with gold inlay (kintsugi). But it is also reflected in stone gardens, in bonsai, in haiku, and some forms of the Japanese tea ceremony.



## 1. Physical imperfection

Physical beauty has long been idolised in human culture. However, some philosophers have pointed out that it has become a modern ethical ideal. The ability to reshape ourselves has led to demanding social norms to modify and conform.

Buetow and Wallis have recently drawn directly on wabi-sabi as a way of responding to these damaging ideals of perfection and symmetry.<sup>5</sup> Reframing our social understanding of what counts as beautiful, might help move away from the pervasive pathologizing of normal variation and age-related change. Wabi-sabi might influence education and debate about cosmetic surgery and related treatments in a way that would plausibly encourage human flourishing.

Specific wabi-sabi traditions, (eg kintsugi) might have direct applications – for example supporting patients who choose to embrace rather than erase their scars.<sup>6</sup>

## 2. Disability and disease

Societal attitudes to physical imperfection overlap with attitudes to disability and disease. So in a similar way, wabi-sabi might support a non-perfectionist attitude to illness and impairment, embracing the notion that these are natural and inevitable, and can at least sometimes bring special value and beauty. This would depart from the Aristotelian notion of health as perfection, and equation of disease with vice.<sup>7</sup> It might have more in common with the attitude of the stoics.

An attitude informed by wabi-sabi might help health professionals to revise in a positive way the language that they use in talking to parents or patients when the break the news of a diagnosis of a significant disease or disability. However, a wabi-sabi attitude might not simply line-up with the contemporary suggestion that disabilities are “mere differences”.<sup>8</sup> Imperfections do not always detract from the value of a life, but neither are they necessarily neutral. The broken bowl is not left in pieces – it is repaired with loving attention and care.

## 3. Death

Finally, wabi-sabi might infuse and improve our attitude towards mortality. It would imply that the transience of human existence is not necessarily something to regret. Such an attitude might help health professionals to cope with the nature of their work.

Might it also be of benefit for patients? Some have suggested that Buddhist teachings and mindfulness would alleviate death anxiety and promote death

acceptance in terminally ill patients. Wabi-sabi might have a place in palliative care for patients (from Buddhist or other backgrounds) who would wish for such spiritual support. It is less clear, perhaps, how helpful the ideas of wabi-sabi would be to patients who are already anxious and distressed by the prospect of their death.

An attitude of acceptance (rather than seeing death as a failure of medicine), would be entirely compatible with modern approaches to palliative care. However, it is possible that wabi-sabi might have some more radical implications. One possibility is that we might think about the concept of a ‘good death’ in partly aesthetic terms.<sup>9</sup> Another is the idea that solitude or even loneliness are not necessarily negatives at the end of life. That might seem an odd suggestion. But as often evoked by the haiku masters, an attitude of wabi-sabi means that loneliness can sometimes be valued and even treasured.

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# Eulogy to Don Cameron

Graeme Barnes

Don Cameron is a man whose commitment to his career is best illustrated by the fact that the first day of his overseas Gastroenterology training at Great Ormond Street Hospital, was spent at a cricket match at Lords, and I have that from an impeccable source – his wife Robin.

I will begin with some history of one of his many achievements.

Don was a Research Fellow in the Department of Gastroenterology when I returned to the Royal Children's Hospital in August 1975. I had been a Research Fellow in 71 and 72, working with Director Dr Rudge Townley and Scientist Dr Ruth Bishop, looking for possible causes of gastroenteritis. Dr Geoff Davidson followed me, and some of you know the exciting story of the discovery of rotavirus in 1973. Rotavirus was soon shown to be the most common cause of severe, dehydrating gastroenteritis in infants worldwide.

What you might not know, is that Don was responsible for finding the unique strain of rotavirus in newborn infants at the Royal Women's Hospital, which is now the basis of an oral rotavirus vaccine given at birth. Don's colleague, Julie Bines, has just been awarded the Australia Museum Eureka Prize for development and testing of this vaccine. In media interviews Julie has acknowledged Don's fundamental role, which made this all possible. So Don found the strain, and could regard it as his vaccine, with potential to save thousands of child deaths around the world. What a legacy!

To go back a bit, Don was apparently a bit of a showman from an early age, although claiming to be shy. Robin showed me a photo of one of his quirky outfits, with Don dressed as a petrol bowser at a school dress-ups day. That showmanship certainly emerged at Department social events later in life.



He was in the first ever Medical School intake in Hobart in 1965. He took up smoking a pipe during University days – a sight well remembered by many during his early career, before he gave it up. Don and Robin married during his final year at Medical School, so she had to support him until he got a proper job.

He came to the Royal Children's Hospital in 1972 as a Junior Resident Medical Officer, after a stint in Auckland. It is not clear why he chose Gastroenterology. He met Director Dr Rudge Townley in the Gastro Ward. Rudge was a stimulating character, and he was a pilot (more later). Don saw lots of gastroenteritis, and of course was present when Rotavirus was discovered. So he settled on Gastroenterology, and as he said, "Diarrhoea became my bread and butter".

In 1977 Don had a Fellowship at Great Ormond Street Hospital, where he did pioneering work with Dr John Harries, on stomach function in infants. He also had appointments at the famed Kings College Hospital, and at St Bartholomew's Hospital with the renowned Dr Christopher Williams. There he perfected his skills in procedures to investigate bowel disorders, including gastroscopy or colonoscopy.

He returned to RCH in 1979 as a part-time General Physician. We had no budget for extra Gastroenterologists at the time. He also set up in private practice, partly to keep his family fed.

Left, Arnold, Graeme and Don  
at dinner for Arnold's 20 years of service





Prof Arthur Clarke was very positive about the idea of Don also being appointed at the old Queen Victoria Hospital. And Don provided 24/7 Paediatric Gastroenterology service there, and later at Monash Med Centre. He was passionate about doing this and built up the service which now has 4 Paediatric Gastroenterologists. He held the title of Clinical Professor at Monash University.

What else did he do?

He saw hundreds of children with problems. Kids and their parents loved him.

For one who is primarily a clinician, Don had a remarkable academic, teaching and professional leadership career.

He was:

- Investigator on several NHMRC grants
- Author on more than 70 peer review publications
- He had 60 invitations to speak at national and international conferences
- He was Examiner for the Royal Australasian College of Physicians for 12 years
- He received The Outstanding Physician Award of the Gastroenterological Society of Australia
- He made significant research contributions in coeliac disease, gut allergy and inflammatory bowel disease
- He established acid reflux tests, to help sort out infant colic, ably assisted by GE Nurse Di Simpson
- He was recently awarded Life Membership of Coeliac Australia
- And he was a Founding Member and stalwart of the Australian Society of Paediatric Gastroenterology, Hepatology and Nutrition

He was a superb driver of colonoscopes - or so he told us. But note that he was a fully paid-up member of the Sceptics Society! His many trainees swore he was just the greatest teacher. They were in awe of his clinical and practical skills.

Don crossed the gap between Paediatric and Adult Gastroenterology in Australia, like no one before him. He was the first Paediatrician to chair the committee which set the Australian rules for accreditation in Endoscopy. He was Secretary of the Gastroenterology Society of Australia for 5 years. And he was the only Paediatrician who has been President of the Gastroenterological Society of Australia. That appointment really is a measure of how much his colleagues within his profession respected him.

To return to his showmanship: Di Simpson has a wonderful collection of photos taken over 3-4 decades, of Don at various social events in the Dept of Gastro.



He couldn't resist a dress-up opportunity at a Hong Kong restaurant!

His flamboyant style will long be remembered by his colleagues.

And I also must mention his flying. His Dad was an RAAF navigator. His Gastro boss Rudge Townley was a keen flyer, and Rudge's sons are international pilots. His mate Peter Loughnan was mad keen on flying. And his son Angus is an international pilot. Don sort of had to do it.

But he went one better, taking up aerobatics. He decided to do the training while filling in time, waiting for his son Angus at Moorabbin airfield, who was training for his pilot's licence before he was old enough to drive a car. Aerobatics is not for the faint hearted. It is certainly enough to cause the abdominal symptoms which Don dealt with as a Gastroenterologist. It was nearly his undoing. On one occasion after turning the aircraft upside down and returning to level flight, he realised that the entire windshield was covered in a thick film of oil, leaving only a tiny gap clear. He was in serious trouble, but by doing some nifty side-slipping he managed to land the aircraft safely. I think that his skill in driving those flexible colonoscopes saved him. Staring through the gap in the oil, using one eye only, was the answer. This was a skill he acquired in the pioneering days of endoscopy,



before TV monitors were used, when you had to actually look down the tube with one eye.

In the months before he died, Don showed great courage. He was determined to “keep doing stuff”. He surprised colleagues by continuing to organise professional zoom meetings. They realised recently he was doing so from his hospital bed.

So Don ...

- your Gastro, Medical and Surgical colleagues at RCH and MMC,
- your National and International colleagues,
- the many, many Fellows you have trained who are spread around the world,
- your Nursing, Theatre and Secretarial staff,
- and the many children and their families whom you have helped

... pay tribute to you, for your wonderful contribution as a children's Gut Doctor for over 40 years.

You were a terrific example to all of us of the combined clinician, researcher, leader and teacher.

Above all you always put your family first.

Your multiple friends and colleagues extend their condolences to Robin, Angus and Olivia, Lizzie and Nathan, and your wonderful extended family, especially your grandchildren, Harry, Lucy and Sam.

They can all be very proud of your huge contribution to the health of children worldwide.

Vale Don, our friend and colleague for >40 years. We salute you as a wonderful human being.



View from a hospital bed. Pencil drawing by Garry Warne

# 20+ years in the making – newborn screening for CAH commences for Victorian Babies

Ronda Greaves and Garry Warne

On 4 July 2022 newborn screening (NBS) for congenital adrenal hyperplasia (CAH) formally commenced for all Victorian babies<sup>1</sup>. This culminates a two-decade advocacy campaign for the addition of CAH to the screening panel.



The first probable recorded description of CAH dates back to Italy in 1865, with the report of a patient whose symptoms at death included vomiting and diarrhoea (that had been repetitive throughout life), and autopsy findings showing mixed genital appearance<sup>3</sup>. In 1950 the first report of effective treatment for CAH using cortisone to suppress excess androgen production was reported<sup>4</sup>. Today, administration of hydrocortisone or prednisolone, with or without fludrocortisone, provides effective replacement of glucocorticoids and mineralocorticoids respectively for individuals with CAH.

Early diagnosis is the key to averting the risk of life-threatening adrenal crisis. Increased virilisation is evident in female infants at birth due to the shunting of the steroid pathway, leading to increased adrenal androgen production, due to the enzymatic block. Male infants do not manifest this tell-tale sign and often first present in adrenal crisis with associated hyponatraemia and hyperkalaemia in the first two weeks of life; some will be diagnosed at post mortem<sup>5</sup>.

## The Screening Test

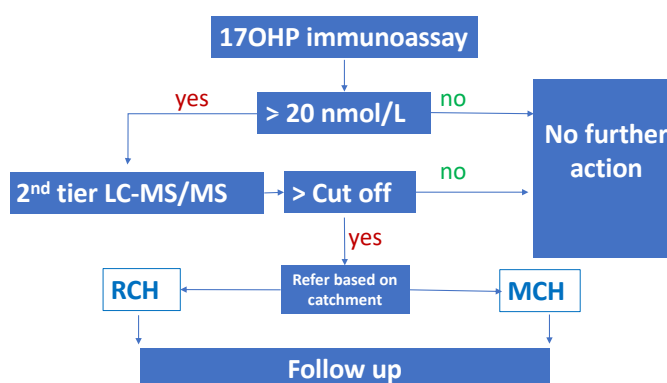
A diagnosis of CAH due to 21 hydroxylase deficiency can be made by demonstrating an increase in the enzyme substrate, 17 hydroxy progesterone (17OHP) and other steroids in a dried blood spot collected in the first week of life. NBS for CAH due to 21 hydroxylase deficiency has been performed in many countries in Europe, most states of the USA and New Zealand for a number of years<sup>6</sup>.

The early NBS programs were based on immunoassay techniques that have been thwarted with cross reactivity from interfering foetal steroids due to inadequate antibody specificity. This problem is exacerbated by neonatal immaturity and critical illness. Hence 17OHP has had a low predictive value resulting in significant costs due to the follow-up of false positive results and previous mixed support for NBS introduction in some jurisdictions. Fortunately, this has changed in the last decade with advances in technology that has improved the sensitivity of mass spectrometry instrumentation for steroid measurement.

## What is CAH?

CAH, which is also referred to as adreno-genital syndrome, is the consequence of an inborn error of metabolism that causes an enzyme defect, with 21 hydroxylase deficiency the most common form affecting around one in 16,000 babies depending on the ethnic mix of the population<sup>2</sup>.

The disease results in the paradox of hyperplasia of the adrenal gland and overproduction of adrenal androgens with the impaired capacity of cortisol production.



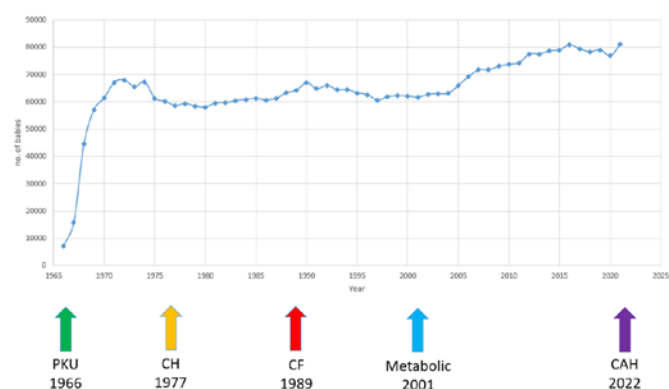


## Victorian NBS Testing Process

NBS is delivered by Victorian Clinical Genetics Services (VCGS) in partnership with the Victorian Department of Health. Currently, around 80,000 Victorian babies are screened through the Program annually.

The strategy of Victorian NBS for CAH is a two-tier testing process from the dried blood spot sample collected from the baby at 48-72 hours of life. The first tier is the traditional immunoassay test for 17OHP and when results are greater than 20 nmol/L the sample is reflexed to the second-tier liquid chromatography tandem mass spectrometry (LC-MS/MS) assay. In this second tier assay several steroids, including 17OHP and 21 deoxy cortisol, are quantitated and if the profile is abnormal the baby will be referred for clinical follow-up<sup>7</sup>.

Following successful accreditation, VCGS commenced the background pilot in April 2022. At the end of the pilot (immediately prior to formal implementation) approximately 16,000 babies have been screened and one baby has been referred for investigation of CAH. The introduction of CAH screening represents the first major change in the NBS Program for 20 years.



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## Advocacy for CAH and the future of screening

The following is a brief (and not necessarily all inclusive) timeline of events in NBS leading to the introduction of CAH screening for Victorian babies.

The National Screening Framework was developed in 2017 to support the broad introduction of new tests across the five NBS jurisdictions in Australia.

As CAH was the first disease to be endorsed, it also served as the pilot to test and provide identify opportunities to refine the Framework.

The National Screening Framework has been reviewed and refined for the process for inclusion (or removal) of tests, with both Severe Combined Immunodeficiency Syndrome (SCIDS) and Spinal Muscular Atrophy being recently endorsed and other applications are in the pipeline (8).

In 2022, NBS in Australia has become a hot topic. Recently, the Albanese government in their election promise earmarked 38.4 million dollars to support the standardisation of the NBS programs across Australia, which was reaffirmed on International Screening Day with a press release from Health Minister Butler (8). An exciting period lies ahead for Victorian and all Australian NBS Programs, so, watch this space!

## Acknowledgements

Implementation of CAH screening is in partnership with the Victorian Department of Health.

The Victorian Clinical Genetics Services (VCGS) received one million dollars of funding to develop operational capacity and capability for the inclusion of CAH screening.

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## Key events in NBS in relation to the Victorian Program.

Year	Key Event	Ref
1963	Dr Robert Guthrie Developed the dried blood spot test for neonatal screening	(9)
1966	NBS commenced in Victoria with the semi quantitative measurement of the amino acid phenylalanine for PKU	(10)
1968	Wilson and Jungner Screening guidelines developed	(11)
1977	Congenital hypothyroidism (CH) screening added to Victorian NBS program with the testing of thyroid stimulating hormone (TSH)	(12, 13)
1984	New Zealand commenced NBS for CAH	
1989	Cystic Fibrosis (CF) screening added to Victorian NBS program with the testing of immunoreactive trypsinogen (IRT)	
1990	First gene test added to Victorian NBS program as second tier test for CF	
2001-2002	23 metabolic conditions related to amino acid and acyl carnitine inborn errors of metabolism piloted and formally added to the Victorian NBS program	
Mid 2000s	Australasian Paediatric Endocrine Group (APEG) formed a committee to investigate the introduction of CAH screening in Australia.	
Mid 2010s	Sensitivity of LC-MS/MS instruments improve making it feasible to quantitate steroids from dried blood spots	
2017	NBS National Policy Framework implemented	(14)
2018-	First test from the National Screening Framework assessment process endorsed by the Commonwealth Federally i.e. CAH.	