



Royal Children's Hospital Alumni

November 2014 Newsletter

President's Message

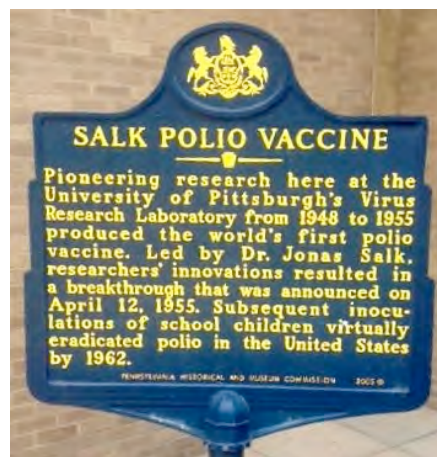
Patience and persistence

The end of the year seems like a good time to reflect upon the activities of the past year. In addition as alumni are at or approaching the end of a full-time career it is appropriate to reflect on what has passed before. Most would conclude that enormous progress has been made in medical care. Whether similar progress has been made concerning the perceptions and attitudes of those who deliver this care is a moot question. Those of us who worked within the public hospital system frequently had criticisms about a perceived lack of support for our particular departments and speculated on how things might have been improved. My recent reading of two biographies indicates that the issues we perceived are common to many.

This year I had occasion to visit to Pittsburgh USA. A famous medical name associated with Pittsburgh is that of Jonas Salk. Salk pioneered the development of the Salk killed polio vaccine which prevented thousands of cases of poliomyelitis. He overcame a number of hurdles in his career. Salk grew up in New York. At that time in the 1930s private medical schools had quotas restricting entry. The dean of Yale medical school had precise instructions 'Never admit more than five Jews, take only two Italian Catholics and take no blacks at all'. The New York University College of Medicine had a somewhat more liberal view and he was able to gain place in the medical course.

Salk commenced his research career at the University of Pittsburgh in 1947. He was given two small rooms in the basement of Pittsburgh municipal hospital. His staff consisted of a single "secretary/ technician". There were no graduate students. At that time the University of Pittsburgh was described in the following terms; "the buildings were in disrepair, it had no major hospital on site and there were few serious researchers or clinicians to be found".

Salk was asked to set up a virology research program. He favoured a killed polyvalent polio vaccine. This was strongly opposed by Albert Sabin an eminent virologist who favoured a live attenuated vaccine. He said of Salk's discoveries "you could go into the kitchen and do what he did". Sabin obstructed the entry of Salk to the prestigious National Academy of Sciences. The two men were essentially antagonists for the rest of their scientific lives.



Salk's work was supported by the March of Dimes which raised thousands of dollars from individuals from all walks of life. The Salk vaccine field trials of 1954 became what was described as the 'largest medical experiment in American history'. They involved almost two million elementary school children across the USA. Meanwhile Sabin having done what he could to undermine this trial moved on to other activities.

The second biography was of John Bogle who in midlife at the age of 45 founded the Vanguard mutual fund company in the USA in 1974. In 1973 he was demoted and sidelined by his colleagues at The Wellington Management Company, who disagreed with his heretical views on investing which put the clients' interest ahead of those of the fund managers. He was the pioneer of that form of investing known as index investing which put more money into the pockets of investors and less into the profits of fund managers. By 1996 Bogle's Vanguard funds had over \$200 billion in assets under management and five million clients.

Bogle suffered his first heart attack at the age of 30 and was then given a maximum of three or four years to live. He subsequently had a further 4 heart attacks,2 accompanied by cardiac arrest and eventually had a

successful heart transplant at the age of 68 allowing him to return to his favourite sport of squash. Aged 68 just prior to his retirement he titled his final message as Chief Executive of Vanguard Patience Persistence and Courage. In September 2014 he recently addressed the 40th anniversary celebrations of Vanguard at the age of 83.

What lesson might alumni take from these anecdotes? In a career patience and persistence are essential for success. Did we exhibit sufficient of these qualities?

Andrew Kemp, November 2014

From the editors

In this November issue of the Alumni Newsletter, we are pleased to feature articles that bring us up to date with the lives of three of our more far-flung members as well as the text of a recent Grand Rounds that was given to great acclaim by one of our newest members. Dear Alumni, you are all invited to submit material for the newsletter. Distribution is no longer a problem as all but a very small number of members can now receive it electronically. The Alumni Newsletter is an ideal way of keeping in touch with former colleagues and old friends, including those who, for one reason or another, are unable to attend meetings.

We extend compliments of the season – Christmas, Hannukah, summer holidays – to all of our members, family and friends.

Andrew Kemp (ask70@me.com) and Garry Warne (garry@warnefamily.net), editors

Alumni News

New members of the Alumni in 2014

Dr Enver Bajraszewski
Dr Hugo Gold
Dr Thomas Lee
Professor Margot Prior AO
Dr Jill Robertson
Professor Frank Shann AM
Dr Karin Tiedemann OAM
Ms Christine Unsworth AM
Dr Keith Waters

In memoriam

Dr Geoffrey Gillam, Neonatologist and paediatrician
Dr Clare McKinnon, Neonatologist and paediatrician
Dr Alex Venables, Cardiologist
Mrs Joan Wettenhall, widow of Dr Norman Wettenhall

Archives and Heritage committee.

The Alumni have two representatives on the Archives and Heritage committee, Andrew Kemp and Kevin Collins. Heritage consultants have been commissioned to develop a strategy for the hospital with particular reference to heritage matters. The final reports have been recently received by the hospital executive and a paper copy can be viewed in the hospital library. Below is a list of options under consideration. Comments from the Alumni (to Kevin Collins or Andrew Kemp) on this report or other heritage matters are welcome.

RCH heritage strategic options.

- Collections management
- Visual history bank
- History portal
- Display walls
- Story booth
- Exhibition pods
- Community exhibition making
- History in place
- Timeline
- 150th anniversary exhibition and festival

Andrew Kemp

30 years on

Trish Davidson & Cliff Hosking



In 1985 I came to the Royal Children's Hospital in Melbourne as a surgical registrar. Several registrar exchanges had occurred through the professional links between Professor Dan Young at the Sick Kids Hospital in Glasgow and Professor Peter Jones and his colleagues. It was an exciting opportunity to work in a prestigious institution. During the next few years I successfully gained a Fellowship of the Royal Australasian College of Surgeons and an M.D from the University of Melbourne from my pancreatic work at the Walter and Eliza Hall with Professor Len Harrison and with Professor John Hutson in the surgical research lab at RCH. Many other papers flowed from collaboration with Gastroenterology [Graeme Barnes, Arnold Smith & Winita Joshi], Oncology [Karin Tiedeman and colleagues], General Surgery [John Hutson, Alex Auldist, Keith Stokes, Spencer Beasley & the then resident, Professor Sue Sawyer] and Immunology [Cliff Hosking & Don Robertson].

As you know my life changed through meeting Cliff when I went to borrow a book on mono-clonal antibodies. Suddenly I had new and wonderful opportunities with my extended family. I did not give up skiing or sailing though and managed 5 trips across Bass Strait thanks to my friendship with Alan and Susie Woodward. After the birth of Sarah in 1990 [now an Intern at Monash!] I decided to look for new academic challenges. The University of Newcastle was recruiting an academic surgeon and so we moved to the eminently liveable Hunter Valley. A new teaching hospital opened in 1991 which is now the John Hunter Children's Hospital.

Cliff retired from his position as Director of Pathology at RCH and Research Director at CSIRO and I became a full time paediatric surgeon. This did not last as he then returned as a paediatrician, resumed life as an immunologist and developed an interest in allergy. He, and Dr David Hill, commenced the Melbourne Allergy Cohort study and for the next twenty years continued their academic association writing multiple papers and changing the understanding about food allergy. He became the Director of our Children's Hospital and started a research foundation [Hunter Children's Research Foundation] that has raised well over a million dollars.

In the mean time I worked hard as an academic surgeon, we had a second daughter, Caitlin [recently graduated in psychology from Canberra University] and I was very happy as a busy clinician.

Then in 1995 I was elected to the Council of the Royal Australasian College of Surgeons, one of 16 members and only the third women. This was a fantastic time, Professor Bruce Barraclough was president. The College was transitioning from a traditional institution to a contemporary educational and training organisation. During the next 9 years I travelled the world, met amazing surgeons who held all sorts of positions; Ministers for Health, Leaders in Education and those who cared deeply for people in less developed nations. I became Deputy and then Censor-in-Chief. Responding to allegations of anti-competitive behaviour by the ACC was a challenge which brought with it insight and reflection of the worth of surgical training and the roles of surgical supervisors and trainers every day. A keen understanding of surgery and surgeons in New Zealand and Australia and their role in the health of our society added immense value to my day to day practice.

In the early 2000's it became obvious that our Newcastle services should develop, the real question was how? After a literature review and wide public consultation we agreed to integrate all services for Children, Young People and Families across the health continuum and Kaleidoscope was born [[Kaleidoscope - Children, Young People & Families Providing excellence in healthcare](#)]. Nowadays this has 4 elements, the Newcastle Children's Hospital; Community, Partnerships and Integration; a Children, Young People & Families Clinical Network and ABC [the Adolescent, Babies and Children's Research Network]. I was the inaugural clinical lead and now the Executive Director for these services and sit on the leadership team for Hunter New England

Health, a 2 billion dollar organisation. I have developed a keen interest in communities of practice/clinical networks as an effective process to drive change. Throughout these organisational opportunities I keep the focus on the health of the children and have developed partnerships with families. I am a member of the board of the Australian Institute of Patient and Family Centred Care. Linking all health services is an important concept and Children's Healthcare Australasia [was Children's Hospitals Australasia] is a non-government organisation which aims *'to enhance the health and wellbeing of children and young people through supporting children's hospitals and health services to achieve excellence in clinical care'*. I am currently the President and enjoy working across both Australia and New Zealand to develop the capacity of our health services to deliver great healthcare. I still manage do on-call, attend clinics and operate; makes sure I am well grounded in the things that matter.

Our family is a source of joy, we love living in the Hunter Valley but do spend a time in Melbourne with the kids and the grand-children, catching up with old and new friends. Cliff's art has grown and he is a well-respected local artist with regular exhibitions [[cliffhoskingart](#)]. His image at the top is a Selfie with a difference! It is what Cliff calls a Watercolour Photo-mosaic. If you enlarge the image you will see that the non- Cliff-skin bits of the image are tiny photographs of our family. (The skin bits are watercolour painted on canvas. We live in a beautiful home with lots of environmental features, perhaps you would like to visit some day; give us a call.



The life of a small town paediatrician in northern Israel

Michael Harari (written in May 2014)

Dear Garry,

It is an honour to be asked to join the RCH Alumni.

I left RCH 3 years ago and moved to the upper Galilee in the far north of Israel. I live in a small town called Rosh Pina. As the crow flies we are about 20 km from the Syrian border and 13 km from Lebanon. I work as a general paediatrician in Ziv Hospital, a small public hospital in the town of Tzfata (Safed). It services an ethnically diverse population of about 300,000 mainly rural dwellers. The population mix is about 1/3 Arab, 1/3 Druse, 1/3 Jews. This ratio is reflected in the patient mix and all levels of our staffing. There are only 3 paediatricians in the ward service so we deal with the full range of acute inpatient paediatrics as generalists. I still dabble in PICU, although I will discard that soon. My professional passion remains adolescent incontinence and I have set up a clinic in our hospital to provide a service for these problems. I have a heavy commitment to medical student and trainee registrar teaching.

In February 2013 we began receiving the first of what became a steady stream of Syrian wounded coming across the border. We have taken over 50 children (and 250 adults), all with blast injuries that are multisystem and severe, many with limb amputations. They are virtually all undernourished, and with psychological trauma to match the physical. Despite their small numbers, they take up much time and a huge amount of our resources. My role is small - I administer a daily anaesthetic list in the ward for painful procedures. The children are often unaccompanied by any family member (who may have been killed or wounded in the same blast) which poses numerous ethical issues. Healing the profound psychological trauma has been challenging. Apart from good pain control and nutrition, it has become clear that even severely injured parents should stay alongside the child if they are available. In addition to good surgical and orthopaedic care, restarting their schooling and the liberal use of clowns for distraction have been central to the long process of recovery.

The appalling nature of the injuries continues to shock me. The exhilaration at treating and befriending children and their parents who have been raised to consider us as devils to be driven into the Mediterranean, is difficult to describe.

My day starts each morning at 5 am when I milk and tend 8 goats. I then care for an aged man with high level of incapacity, and finally look after my chickens and 2 dogs. By 8.15 am when I start my work as a paediatrician I am pretty tired.

I am now the father of a 3 month old boy called Meir. To care for him I have taken a year off work and I am not sure if I will ever go back to acute inpatient paediatrics although perhaps I will return soon to part time work to keep the continence service running – we shall see.

I will be back in Melb late in the year to see my own ageing father (94) and others in my closely knit Melbourne family.

Best wishes

Michael Harari

Grand Rounds given by Professor Frank Shann AM, October 8th 2014

A number of alumni expressed their disappointment at having been unable to attend the festschrift for Professor Frank Shann (who is now a member of the Alumni) on October 8th and we are grateful to Frank for allowing us to publish his speaking notes here - Ed.

The State Of The World in 2014: Amazing Progress

In ancient Greece and Rome, life expectancy at birth was only about 30 years – and it didn't change much until the late 1800s. In Australia in 1870, life expectancy was still only 34 years – now, it's 82 years.

I was born in Australia in 1944, when we had the longest life expectancy in the world – 68 years. 34 years in 1870, 68 years in 1944. Double. In 1944, life expectancy in India was only 34 years – the same as Australia in 1870. This year, average life expectancy in India ... is 68 years.

So, in my lifetime, life expectancy in India has doubled from 34 to 68 years, and, a baby born in India today has the same life expectancy I had when I was born in Australia, when we were the most healthy country in the world. So I was born in the equivalent of India-today. What wonderful progress in India!

We tend to focus on the world's problems, and overlook the huge progress that's been made ... I'll concentrate on the progress rather than the problems. So I'm not going to discuss climate change, which does pose a bit of a problem.

In 1800, world life expectancy was about 30 years – with no country longer than 40 years. Now, the average life expectancy for the whole world is 70 years, with no country less than 45 years. No country longer than 40 years in 1800, and none less than 45 years now. Even the worst country today has a much longer life expectancy than the best country in 1800.

(Here, Frank shows a graph of life expectancy vs average per capita income – Ed.)

Note that income's a log scale – Vietnam \$3,000, US \$50,000. Above the cluster's a long life for that income. Below the cluster's a short life for that income. The good, the bad, and the ugly. US, Chile, Costa Rica, Cuba have the same life expectancies but very different incomes

Some family history.

My grandfather was born in a tent on the goldfields in Ararat in **eighteen-fifty-nine**. **My grandfather – born in 1859!** He had three older brothers. Imagine bringing up four small boys / in a tent / on the goldfields / no health and safety / no fire warden – but they did OK: two headmasters, one engineer and a farmer.

When my grandfather was born in Ararat in 1859, Australia had a life expectancy of only 34 years – much less than the country with the shortest life expectancy in 2013. When my father was born in Melbourne in 1909, Australia had a life expectancy of 55 years – the same as Somalia and South Sudan today.

When I was born in 1944, Australia had a life expectancy of 68 years – the same as India today. When my youngest child was born in 1992, Australia had a life expectancy of 78 years – the same as Mexico today. So life expectancy in Australia increased from 34 years in 1870, to 82 years in 2014 – **but what about the quality of life?**

Well, quality of life's improved enormously. As an example, imagine lighting a room for an hour with a 12 watt compact-fluorescent globe. How long would an Australian on the median wage have to work to pay for this? Have a guess. To yourself. How much work to light a room for an hour?

The answer's about half a second – you have to work for only half a second to light the room

- But it was ten seconds with a 60 watt incandescent bulb when I was born in 1944
- 15 minutes for my grandfather with kerosene lamps in 1880
- 6 hours for Jane Austen to use tallow candles in 1800 – *6 hours as recently as 1800*
- And 2 days with sesame oil lamps in Babylon in 1500 BC.

Compared to half a second now.

So our ancestors usually went to bed soon after sunset.

Another example – travel. On the median wage it takes an Australian only about 2 weeks to earn the return air fare to London – and the 17,000 km trip to London takes about as long as it took Julius Caesar to travel ... 50 km.

In fact, the average Australian is far better off than the richest person in ancient Rome:

- A much longer life,
- A huge variety of cheap food and clothing and books,
- Trains, motor cars, air travel,
- live colour TV from all over the world
- the internet, mobile phones
- And far less violence.

Why violence has declined: war and genocide

Steven Pinker is professor of psychology at Harvard. His book “The Better Angels of Our Nature” presents the evidence that we live in the least violent period in human history – thanks to science / education / trade / and democracy.

Despite the two world wars, the 20th century probably had less violent deaths per thousand people than any other time in human history. The number of war deaths in the world per 100,000 population were much less in the 20th century than in non-state societies. We know a lot about small to medium size wars in recent times, but only about very large wars in the distant past.

The “peaceful” 19th century
Napoleonic wars (4 million deaths)
Taiping Rebellion (20 million deaths)
American Civil War (650,000 deaths)
Shaka Zulu (1-2 million deaths)
War of the Triple Alliance (60% of Paraguay)
African slave-raiding wars (?)
Imperial wars in Africa, Asia, south Pacific (?)

Even the 19th century, known as “the peaceful century”, had periods with a huge number of deaths from violence – especially when we take into account the much smaller human population at that time.

The reduction of violence within societies

War and genocide have caused untold suffering, but violence within societies is crucially important. Death from homicide in Europe has reduced almost 10-fold since the 13th century. What’s judicial torture? Well take “drawn and quartered” as an example. It means hanged by the neck without breaking it / taken down while still alive / disembowelled while alive / castrated while alive / decapitated / and cut into 4. Good Queen Bess, Elizabeth I, was Queen in Shakespeare’s time. She had 100-and-23 priests hung, drawn and quartered. We forget that torture was a part of normal society – it was a public spectacle that people enjoyed. This is Samuel Pepys, “*Out to Charing Cross, to see Major-general Harrison hanged, drawn, and quartered; which was done there, he looking as cheerful as any man could do in that condition. He was presently cut down, and his head and heart shown to the people, at which there was great shouts of joy. . . . From thence I took Captain Cuttance and Mr. Shepley to the Sun Tavern, and did give them some oysters.*” So it’s not just that there’s less

judicial torture today – it's that it's no longer a normal part of every-day life. Even in the USA, there has been a large reduction in judicial violence.

The rights revolution

Look how recently we've seen reductions in slavery, racial lynching, and discrimination. And a big reduction in racial lynchings in the USA. And legalised discrimination against minorities.

There has been a huge shift in the moral zeitgeist – the prevailing view of what is right and wrong, as the quote from Samuel Peyp's illustrates. There's been spectacular reductions in violence, superstition, racism and sexism. What's next? Peter Singer argues that it should be speciesism, and that all individuals should have moral rights in proportion to their capacity for consciousness – the capacity to feel pain and to anticipate the future. Vegetarians are about 5% of the population in Australia, 10% in the UK and Germany, and 30% in India. A disclaimer - I'm not a vegetarian.

Why such a large reduction in violence? Education, science, trade, democracy

Pinker discusses many reasons for the decline in violence, but emphasises the importance of education / science replacing superstition / the moderating effects of democracy / and trade. Trade benefits both buyer and seller / creates interdependency / and increases mutual understanding. It's a powerful force for peace. Autocracies often fight democracies, and other autocracies – but democracies rarely fight democracies.

Our lives have improved enormously. Knowing this is important. It can influence how our world is understood. Do we see our world as a nightmare of doom and violence and terror – as portrayed by the media and the Australian Government. Or, as a community that's blessed by unprecedented standards of health, wealth and peaceful coexistence.

Some perspective. World-wide, since 1968, there's been an average of 2,900 deaths per year from terrorism, and about 12 million deaths a year of children under 5 years of age. Last year, there were 2,900 under 5 deaths every 4 hours. "If it bleeds, it leads" – our media give a very biased picture of the world...

So, do we see a world of violence and terror, or do we see ourselves as blessed by health, wealth and peace? Unjustified pessimism and fear is much more common than cautious optimism. And irrational pessimism has an important influence on our foreign policy and military spending, and on education, immigration, aid and trade.

Now let's consider why life expectancy has increased so much in the last 150 years

It's mainly because there are fewer deaths from *infections* in children. There's been much less improvement for adults. Mortality from infections fell mainly because there was less crowding and better sanitation. Surprisingly, nutrition was probably not a major factor. With 10 or more people living and sleeping in one or two rooms, susceptible children got a bigger dose of germs. And a bigger infecting dose means higher mortality. Industrialisation and the growth of cities increased crowding at 1st, but later, when wealth increased, houses became bigger and improved maternal education meant fewer children. Fewer children, in more rooms, led to reduced mortality from infections.

For example, in 1850 in England, one-thousand-500 per million children died of whooping cough. By 1950, only 30 per million died of whooping cough – and that was before whooping cough vaccine was widely used. 1500 to 30. It wasn't vaccines and antibiotics that saved lives, but less crowding and better sanitation. The only vaccines in routine use in Australia when I was born were smallpox and diphtheria vaccines, and the only antimicrobials were sulphonamides. Infant vaccination wasn't routine in Australia until 1953. Yet life expectancy had doubled from 34 years in 1870, to 68 years when I was born in 1944. Less crowding, better sanitation.

There was little change in life expectancy for a 45 year old man in the USA from 1900 to 1980, but a big increase in life expectancy at birth. This is because there were fewer deaths from infection in children, with little change in non-infectious deaths. The reduction in deaths from infection were *not* due mainly to vaccines and antimicrobial agents.

Deaths from TB fell long before chemotherapy and BCG were available, and so did deaths from pneumonia. Deaths from pertussis fell long before pertussis vaccine was used routinely. The vaccine was not given routinely in Australia when I was born in 1944.

What about the role of the Royal Children's Hospital in all this?

Well, the RCH pharmacopoeia from when I was born makes interesting reading. It had 68 pages, but almost all the entries are completely useless, or even harmful. Only seven are in the current pharmacopoeia: aspirin, atropine, chloral, iron, ipecac, morphine and phenobarb. Strychnine and arsenic were in the 1940 edition, but they've been quietly phased out.

I first worked at RCH in 1970, on rotation from the Royal Melbourne. I was a resident in Casualty (now ED). There were no consultants in "Cas". Just two registrars – the Admitting Officers, Neil Roy and Arnold Smith. Each resident had a small chest of draws with life-saving drugs to dispense – such as ephedrine and phenob for asthma, and ipecac mixture for respiratory tract infections...

Mist. Ipecacuanha and Squill

Camphorated Tincture of Opium 0.3 ml
Tincture of Ipecacuanha 0.2 ml
Oxymel of Squill 1 ml
Distilled Water, to 4 ml

Camphorated Opium – it made the whole visit worthwhile! Tincture of Ipecac – designed to liven-up the party! Just in case the child didn't vomit with the opium. Oxymel of Squill. My favourite bit! An oxymel is a mixture of honey and vinegar. But squill? Squill is a bulb like an onion. It grows around the Mediterranean. There are white or red varieties, with heated debate about which variety's better – seriously! *Oxymel of squill was invented by Pythagoras in the 6th century BC.* And we handed it out in the RCH Casualty in 1970! When you had a cold, did your mum give you lemon and honey? An oxymel. Yes? Well tip-ye-hat to Pythagoras, two-thousand-500 years ago. He's not just a hypotenuse.

Back to Casualty in 1970. We gave three pieces of advice about diarrhoea:

1. Give flat lemonade
2. Stop breast feeding
3. Stop solid feeds

... and all three were wrong.

In fact the osmotic effect of flat lemonade makes diarrhoea worse, and this caused thousands of admissions to the gastro ward.

In 1970 at RCH, Babies with diaphragmatic hernia were rushed straight to theatre. So they almost all died.

I wonder what we're doing now that's just as bad? I'd love to know.

Fortunately, there's been substantial improvements in the care of children since I first worked here in 1970, and huge improvements since I was born – when the benefits from hospital treatment were pretty minimal.

What about present-day child mortality in Australia?

Arguably, child mortality's the best single indicator of well-being in a country. How well a country looks after its vulnerable members. A few extremely rich people can substantially increase per capita income ... but a few very healthy families don't reduce child mortality. For a rich country, Australia has a very high child mortality rate. Few Australians realise this.

Under 5 mortality: GNI pc >\$20,000 and population > 3 million					
u5	GNIpc	u5	GNIpc		
Norway	2.8	88890	Netherlands	4.1	49730
Singapore	2.9	42930	Belgium	4.2	46160
Sweden	2.9	53230	Israel	4.2	28930
Finland	2.9	48420	Switzerland	4.3	76380
Japan	3.0	45180	Spain	4.5	30990
Portugal	3.6	21250	Greece	4.8	25030
Denmark	3.7	60390	United King	4.8	37780
Italy	3.8	35330	Australia	4.9	46200
Korea	3.8	20870	Canada	5.3	45560
Austria	4.0	48300	New Zealand	5.7	29350
Ireland	4.0	38580	USA	7.1	48450
Germany	4.1	43980	Un Arab Em	8.4	40760
France	4.1	42420			

UNICEF 2012 *childinfo.org*

In 2012, there were 25 countries with an average income over \$20,000 and a population over 3 million. Only four had a worse child mortality rate than Australia – Canada / New Zealand / the United States / and the United Arab Emirates. We rank 21 out of 25. Fifth last. In Australia, 4.9 of every thousand babies die before 5 years of age, compared with 2.8 in Norway, and 2.9 in Singapore, Sweden and Finland.

Our high child mortality is not due to indigenous deaths – although indigenous child mortality is double the non-indigenous rate, less than 6% of births are indigenous. Our shamefully high child mortality rate is due mainly to social rather than medical factors – we have poor public education and poor public health services compared to Norway, Singapore, Sweden, Finland, and Japan. Look at the educationally disadvantaged populations in western Melbourne and western Sydney compared to the superb public education systems in Norway, Sweden and Finland. We should study those countries to learn why they're doing so much better than we are. It's an important project for someone in the audience.

Australia is not going to catch up by spending more money on children's hospitals – even paediatric intensive care won't fix it.

A heresy: what's good for RCH is not *necessarily* good for child health in Victoria – the extra money might be better spent on education and public health.

What about global child mortality?

The world's rate of progress is accelerating. In 1990, 12.6 million children died before they were 5 years old. In 2013, there were more children, but only 6.3 million died before 5 years. The number of under 5 deaths halved in 23 years.

Ah ha! You say, there's the problem. If there are too many people in the world, why save more children? First, that question's always asked about other people's children.

Second ... because you have to reduce the number of children who die ... before people will have fewer babies. Poor countries don't have old age pensions. So you must have surviving children to look after you. And if lots of babies die ... you have to have lots of babies. No country has reduced the number of babies per woman ... without first reducing child mortality. None. Good news! Worldwide, the number of babies per woman halved from 5 in 1950 to 2.5 in 2012. And in the last 5 years, there's been very little change in the number of babies born. The number of births has peaked at about 140 million per year, and will fall gradually from now on. And the number of children less than 5 years old will stay constant ... at about 2 billion. We've reached peak child population. That's a huge milestone. But, of course, even if the number of children stays at about 2 billion, lower mortality rates mean the world's population will continue to grow over the next 2-3 generations, and stabilise at about 9.7 billion, compared to 7.3 billion today. Obviously, this poses an enormous challenge – but I'm optimistic we'll meet it.

The number of under 5 deaths has halved in the last 23 years.
But we could still do better. Much better...

The state of the world's children

In 2013, 140 million children were born in the world.
6.3 million children died before they were 5 years old.
98.7% of them died in medium to low income countries.
If the whole world had the same mortality rate as the rich countries, there'd be only 0.8 m deaths.
 $6.3 - 0.8 = 5.5$ million unnecessary deaths.
That's 15,000 unnecessary u5 deaths every day, or 600 every hr.
That's equivalent to a jumbo jet crashing every 45 minutes.

In 2007, 20% of people lived in countries with an income <\$975 per person per year. In those countries, the average total expenditure on health was only \$22/person/yr, which compares to about \$5000/person/yr in Australia.

Most very poor countries are in the **Bottom Billion**. Countries that have had a stagnant economy for the last 20yrs. There are 58 Bottom Billion countries in sub-Saharan Africa, the central Asian 'stans, N Korea, Haiti, Bolivia.

There are not just two types of countries, developed and developing. There are actually many different types, but three groups is much more accurate than 2. First, the rich countries, where 1 billion people live. Second, rapidly developing countries, where 5 billion live – India, SE Asia, China and South America. Third, the Bottom Billion, where another 1 billion people live. The Bottom Billion are often called “failed states” – but this is highly misleading.

The developing countries with 5bn people are rapidly improving. Outside help's not crucial to their success. On the other hand, the Bottom Billion economies will only improve with substantial outside help – but it's actually been very difficult to develop these economies.

In fact, a lot of assistance is given indiscriminately to the whole 5bn + 1bn. Indeed, the developing 5bn are often favoured – projects are much more likely to succeed in those countries. If you really want to make a difference, try to help the Bottom Billion – but don't expect easy or quick success.

The good news is that, despite economic stagnation over the last 20 years, the Bottom Billion countries have made wonderful progress in education and health. In the Bottom Billion countries, under 5 mortality has halved from 153 per 1000 live births in 1990 to 76 per 1000 last year. Of course, 76/1000 is still far too high, but a reduction of 50% in 23 years is wonderful progress.

It's ridiculous to say that countries have "failed" just because their economies are stagnant – look where they started.

Don't just look at the problems, look at the progress. Money is only a means to an end – such as health. Crying "failure" because income is stagnant confuses means and ends.

This is my "honour list" of countries that are poor but healthy.

Under 5 mortality: GNI pc >\$20,000 and popltn > 3 million			
	u5	GNIpc	
Norway	2.8	88890	Netherlands 4.1 49730
Singapore	2.9	42930	Belgium 4.2 46160
Sweden	2.9	53230	Israel 4.2 28930
Finland	2.9	48420	Switzerland 4.3 76380
Japan	3.0	45180	Spain 4.5 30990
Portugal	3.6	21250	Greece 4.8 25030
Denmark	3.7	60390	United King 4.8 37780
Italy	3.8	35330	Australia 4.9 46200
Korea	3.8	20870	Canada 5.3 45560
Austria	4.0	48300	New Zealand 5.7 29350
Ireland	4.0	38580	USA 7.1 48450
Germany	4.1	43980	Un Arab Em 8.4 40760
France	4.1	42420	

UNICEF 2012 *childinfo.org*

Countries with income per capita <\$10,000 and child mortality <20/1000. Look at Belarus, Cuba, Serbia, Malaysia, Lebanon, Costa Rica and Sri Lanka – all with child mortality similar to the US with a 5th to a 10th of the income. Those countries all emphasise education and primary health care.

Length of mother's schooling
Explains half the reduction in child mortality
Much more important than increase in income
Education of mother more important than father
Affects 1-5 year mortality > infant mortality
- mothering skills rather than maternal nutrition
Effect present even with poor education systems
Linear effect, even 1-2 years helps (still illiterate)
- main mechanism probably use of health services
<i>Cleland. Lancet 2010;376:933-934</i>
<i>Gakidou. Lancet 2010;376:959-974</i>

It turns out that by far the most important factor in lowering child mortality is maternal education.

Maternal education explains half the reduction in child mortality between 1970 and 2009.

It's much more important than increase in income. And education of a child's mother is more important than education of the father. It affects 1-5 year mortality more than infant mortality, which suggests that it works by changing mothering skills, rather than through maternal or foetal nutrition. The effect's present even with poor education systems, and it's a linear effect – as little as 1 or 2 years of schooling helps, even if the girl's still illiterate. The main mechanism is that women who've been to school are more likely to utilise health services. There's increased identification with health institutions, and the confidence and skills needed to access services and follow advice. And years at school is a major determinant of child mortality in rich countries, as well as in the Bottom Billion. A lesson for Australia.

Three messages

First, don't just look at the world's problems – look at the progress we've made.

Second, don't underestimate humanity's ability to adapt.

Third, **you** can make a real difference to the world if you chose your priorities carefully, and you're prepared to keep fighting.

In summary

- We still have many challenges, including climate change. But there's been stunning improvement in the last 150 years:
- Average world life expectancy has increased from 30 to 70 years.
- The number of under 5 deaths has halved since 1990.
- The number of babies per woman has halved since 1950, and the world has reached its peak under 5 population of 2 billion – a huge milestone.
- Life expectancy in Australia has increased from 34 years in 1870 to 82 years.
- And our quality of life has improved enormous
 - half a second of work to light a room for an hour
 - and only two weeks' work to fly to London and back.

We are privileged people, living at a privileged time, in a privileged country.


Lucky us!



Were you at the 1972 Review?

**ROYAL
CHILDREN'S
HOSPITAL
presents**

**"T'WAS
THE WEEK
BEFORE
CHRISTMAS"**



PRODUCER		d. bannister
STAGE MANAGER		i. robertson
MUSIC	piano	g. barnes
	drums	h. broderick
	guitars	m. hardware
		b. brock
		c. chester
COSTUMES		j. duncan
		e. ferguson
LIGHTS & SOUND		p. milne
		r. dixon
FILM		a. daniel
BACKDROPS		k. marriage
		r. hawkins
CHOREOGRAPHY		m. barry
		s. herforth
MAKE-UP		i. walmsley
BACK STAGE		g. barker
		b. mckie
PROMPTER		s. herforth
SUPPER		h. teller
		m. thompson
TICKETS & PROGRAMME		j. duncan
SPECIAL THANKS TO		
HSV 7 wardrobe & props		
engineers & carpenters — royal children's hospital		
photography department — royal children's hospital		
engineers — royal melbourne hospital		

"T'WAS THE WEEK BEFORE CHRISTMAS"

1. OPENING SONG – the cast
2. CAROL – "MUCH BINDING AT THE KIDS"
s. townsend, d. enever, m. east.
3. THREE SQUARES – d. hill, i. reid,
e. baddeley
4. CAROL – "WHILE NIGHT STAFF WATCHED"
m. barry, h. broderick, w. mair, k. waters
5. BUS STOP – l. blewett, d. bannister
6. ON THE SWITCH – h. thomas, p. wilson
7. CIGARETTE – r. hawkins, d. hill.
8. BIG SPENDER – r. dixon
9. HOSPITAL ROLL CALL –
l. hughes, h. frydenberg,
p. wilson, l. blewett, m. barry,
g. bartlett, k. martin, d. enever,
m. kwek, b. little, j. smith,
j. newman, b. blaine, w. mair,
m. east, s. townsend, k. waters,
r. hawkins, d. bannister, n. roy
10. CAROL – "AWAY IN ADMINISTRATION"
n. roy, a. weldon, k. waters
11. THE BARE FACTS – b. triester,
h. frydenberg, a. smith, f. oberklaid, k. gee,
e. hughes, r. hawkins, m. east.
12. CAROL – "O COME ALL YE CHILDREN"
n. roy, a. weldon, w. mair, m. barry,
h. broderick
13. MUSAK – h. thornton, j. smith, j. newman,
c. swan, m. east, r. hawkins, p. wilson,
g. bartlett
14. FILM – "HOSPITAL HANGUPS" – a. daniel
15. "HELLO DOLLY" – a. weldon, f. oberklaid,
n. ludbey, m. kwek, a. smith, p. howard,
c. kasby, k. waters
16. JOKE TIME – r. dixon
17. PETE & DUD ON CHRISTMAS –
p. field, d. bannister
18. LOVE FTORY – l. landau
19. CAROL – "ONCE IN ROYAL" – a. weldon,
n. roy, f. oberklaid
20. COMBINED THERAPY – h. frydenberg,
r. hawkins, p. howard, f. bainbridge,
j. craythorn, v. mitchell, a. williamson
21. THE CHRISTMAS CHEER SINGERS – p. field,
d. bannister
22. NATIVITY PLAY – d. hill, g. klug, f. billson,
j. mcnamara, h. ekert, j. mitchell, r. townley,
miss h. noblett, i. hopkins, p. campbell,
p. jones, b. triester, d. mccreadie, l. landau
23. "NOW IS THE TIME" – r. hawkins,
d. bannister, n. roy.
24. GOODBYE – the cast

INTERVAL

SUPPER

(With thanks to Professor Graeme Barnes)