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THE REAL BRAIN DRAIN – WHY PUTTING CHILDREN FIRST IS SO IMPORTANT FOR AUSTRALIA

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I would like to acknowledge the traditional owners of the land – the Ngunnawal people.

I would like to acknowledge that the current health status and problems in Aboriginal and Torres Strait Islander communities stem directly and indirectly from the history of colonisation.

I am both privileged and honoured to be here as Australian of the Year.

What I want to say today reflects my own development and evolution from a doctor for child health to child health researcher to using research to improve child and youth outcomes.

So I started out learning about how the body works and how to treat it when things go wrong. I then began to realise the limitations of modern medicine were that it did not prevent disease. I then decided that the best way for me to practise medicine was to try and find out the causes of diseases and prevent them. To me that seemed the most logical, the most humane, the most cost effective way to practice and certainly the best way to have a major impact on improving our society.

So I left the clinic behind and became a population health researcher – an epidemiologist.

Epidemiologists look at the patterns of diseases and problems in the whole population – the questions which we pose are, how often does this occur?, who gets it?, why? and can we prevent it?

Travelling further on my evolutionary path, I realised that to really understand causes you had to bring together not just epidemiologists, but researchers in genetics, biology, and clinical sciences – hence the establishment of our exciting and novel Telethon Institute for Child Health Research in Perth. Here we can study, for all the complex modern diseases and problems affecting our children and young people, how genetic risks interact with environmental risks during development and throughout life to produce disease. Great stuff.

But more recently we now realise that the real gains in reducing disease and improving health will come from the social and economic circumstances operating in families, communities and the wider society, that is that the most effective preventive strategies lie OUTSIDE the traditional areas of the health professions. The exciting

thing is that outcomes other than health such as educational and behavioural competencies may also be enhanced. This is a long way from the medical model of my original training!

Epidemiologists get excited about data – my challenge today is to excite you about data and research in relation to children and young people in Australia today, a pretty impossible task!

And what do I mean in the title of this talk – what is the “real brain drain”?

I would like to answer that by giving you 2 statistical stories to illustrate the power of prevention compared with the costs and limits of treatment; I then want to pose some questions about children and young people in today’s Australia; I will attempt to answer the questions but probably will raise as many again in my answers and finish by calling Australia to action. By then I hope I will have made the case that by placing a greater value on children’s futures will be of benefit to the whole of our society.

The first statistical story describes recurrent otitis media (middle ear infection) in disadvantaged Aboriginal children, and the second, suicides in children from moderately advantaged families.

So picture my Aboriginal child with runny ears, living from birth in poor housing on the fringe of a rural town in any Australian state. She has probably been given several courses of antibiotics, may now be resistant to penicillin, so needs more expensive and maybe less effective antibiotic treatment. She has been intermittently deaf throughout all her pre-school and primary school years and is significantly delayed in both language and educational performance compared with her age peers. Her young parents, loving and caring, take her on the advice of the local community health nurse, to have grommets inserted to enable the pus and fluid in the middle ear to drain properly and to give her a chance to hear. This entails long distance travel, the costs of surgery which is not particularly successful and significant trauma for her. With increasing delay in her schooling she becomes a “naughty” teenager, feels that she is stupid and starts sniffing to escape the pain. The story could continue on a number of paths, the most likely (statistically) are fairly grim and do not auger well for her, or in the future, her own children. She is unlikely to become a competent contributor to Australian society and her brain has certainly not been given an opportunity to develop to its full potential. How wonderful if we could have avoided the cost, pain and anguish of this story which is common to so many of our Aboriginal children?.

And now to my other statistical story – one all too common – of suicides in young people. Many young people in relatively advantaged families with a good standard of living, start on pathways to high risk behaviours, substance abuse, poor school performance, low self esteem, depression and suicide. This young man may have been bullied, may have been overweight, not confident about friends – pretty common in today’s schools. There may have been considerable attempts to diagnose and treat a range of mental health or behavioural problems in the primary school years, but of course less than 10% of young people with problems actually get to use the already stretched mental or other health or educational services. Alcohol

and cannabis was involved and the young man ends his own life. This brain is certainly not going to contribute to Australia's future and the situation has left a family devastated. Forever they will ask could they or others have turned our young person around? Could the cost, pain and anguish of this story have been prevented? How DO you count the cost of a suicide?

The questions I want to ask are:

1. Are outcomes for children and youth improving in Australia? As so many outcomes are related to social disadvantage, surely as economic prosperity and living conditions improved, so have the health, educational, behavioural and general status of our children?
2. Is there any evidence more recently of a levelling of social gradients, that is fewer differences between the 'haves' and the 'haves not'? Are all in society winners from the dramatic economic and social changes in our society?
3. What has been the impact of services? (mostly focussed on treatments not preventions).
4. Why have so many of the problems in children and youth not improved? Are there some common explanations?
5. What do we know about the causes and possible prevention of them?
6. What should Australia do?

1. Are outcomes for Children and youth improving in Australia? As so many outcomes are related to social disadvantage, surely as economic prosperity and living conditions improved, so have the health, educational, behavioural and general status of our children?

I have pulled together the best data on the total population trends that I can from the best sources available. We are observing increases in poor outcomes for children and youth across a wide range of health, development and wellbeing domains. These include things as diverse as low birth weight, child abuse and neglect, behaviour problems, educational problems, mental health problems, substance abuse, unemployment and juvenile crime.

The common pattern is that these are increasing in younger and younger children, and in girls as well as boys even for those areas in which girls were rarely observed 20 - 30 years ago, such as aggressive behaviour, substance abuse and violent juvenile crime. And whilst these problems are much higher in our Aboriginal children, this pattern is across the whole population.

Suicides have increased fourfold in 15-19 year old males since the 1970's and the worrying thing is that the rates are now higher still in 24-35 year olds; nearly 20% of teenagers have a mental health problem; obesity has increased in teenagers from around 10% in 1985 to nearly 25% in the latest years. And in our cerebral palsy data

in WA we observed the rise in irreversible brain damage due to non-accidental injury/shaken baby syndrome from 4% to 18%.

2. Is there any evidence more recently of a levelling of social gradients, that is fewer differences between the 'haves' and the 'haves not'? Are all in society winners from the dramatic economic and social changes in our society?

What do I mean by social disparity – social gradients? It describes the differences in a particular characteristic across the social strata from the most to the least advantaged. If there is a gradient, that is a difference between people's experiences according to their social status, then it can be described as a disparity. If there are no differences then there is no disparity. Example – there is a strong disparity (social gradient) for low birth weight; there is virtually no disparity for childhood cancers.

Our expectation of the increases in wealth and better living conditions in Australia was that they would they deliver better situations for all Australians, that is that social gradients would not be so steep but would flatten out. The PARADOX OF PROGRESS is that not only are we seeing the increases in serious problems in our children that I have mentioned, but the social gradients, the differences between the 'haves' and the 'haves not', have INCREASED not decreased!

So for example, if you compare babies born to the most disadvantaged groups compared with the most advantaged (these data are hot off the press from our WA population data base) the disparity between their levels of low birth weight (that is less than 2500g) in 1984-6 was 171% (that is 1.7 times more likely to have a low birth weight baby). Rather than decreasing this has now risen to 190%(that is 1.9 times more likely). And as birth weight is such an important predictor of later child and adult health, disability and other problems, this is of concern. You see lots of media coverage of smaller and smaller babies being heroically treated in neonatal intensive care units, but where is our interest in prevention?

More data on increasing disparities – for example for infant deaths 250% (2.5 times more likely in disadvantaged) in 1984-6 rising to 320% (3.2 times) in 1996-98; for suicides and drug abuse the social gradient is not so strong and we have seen increases across all social groups, but particularly higher in Aboriginal and rural youth. And Aboriginal youth are still 300 times more likely than non-Indigenous youngsters to be locked up in our prisons.

Of course the differences are extreme when we compare all Aboriginal and Torres Strait Islander versus non-Aboriginal and Torres Strait Islander children and youth – they have 3 times the rate of low birth weight; 7 times the rate of SIDS and 7 times the death rate from infectious disease and accidents in childhood.

All countries show a relationship between socio-economic status and health and other outcomes. I have a list here of all the problems and conditions for which a social gradient has been observed – from this list you can begin to understand the extent to which socio-economic status is so important and why we need to ask questions as to why:

- Substance abuse in pregnancy;

- Teenage pregnancy;
- Low birth weight;
- Birth complications;
- Physical growth in children – poor growth and obesity;
- Exposure to environmental contamination;
- Poor nutrition;
- Behaviour problems at 3-4 years of age;
- Capacity to start school;
- Educational outcomes in 1 and 2 school (school does not even out the gradient);
- Mental health problems;
- Infections;
- Asthma;
- Accidents;
- Suicide;
- Substance abuse in adolescence – and back to the beginning again and the impact becomes intergenerational.

So the paradox of progress is that not only are all these problems increasing and so is the disparity across the social gradient BUT also these disparities tend to be steeper NOT less steep, in richer countries (for example far greater in USA than Canada or China or Japan) and as GDP (Gross Domestic Product) increases so do the disparities! And the evidence also suggests that the overall levels of problems across the whole of society are higher in such countries.

As Australians we pride ourselves on being an egalitarian society. It is obvious that the economic reforms and technological changes have not delivered the improvements in society that were expected. If as Australian of the Year I represent some sense of national feeling – my feeling is one of considerable concern. The more we look the more we see that there are winners and losers from these changes in our society.

And the impact is lifelong – if you start off compromised, then your whole-of-life chances are affected and if you start off healthily and well-nurtured then you are much more likely to reach your genetic potential.

This is the stuff that was omitted from the Generational Report which Costello brought out around the 2002 Federal Budget, that is not only can we see the increase in the aged and a shrinking fertility resulting in fewer in the workforce to support the old in our society, but also the REAL BRAIN DRAIN is the increase in the proportions of young people falling out of that competent workforce.

The trends that I have described suggest that this brain drain is continuing to rise. The success of knowledge economies will result from a competent workforce and high levels of social capital. Failure to invest in all stages of human development, particularly in the early years, is being recognised by organisations such as the World Bank to negatively affect future economic prosperity in two ways. First, we may lack the human resources needed to sustain future economic growth and second, the drain on the welfare and health budgets in looking after these groups.

3. What has been the impact of services (mostly focussed on treatments not preventions)?

The current policies and practices reflect our neglect of prevention as an overall strategy and instead we see a very unequal focus of effort and dollars into costly and on the whole ineffective interventions too late in the causal chain to make any difference to the OCCURRENCE of these problems.

Quote Rutter and Smith 1995 - *“The effects of the criminal justice system on crime rates are complex. There is strong evidence that imprisonment increases the likelihood of re-offending. There is no evidence that increasing the rate of detention and conviction reduces crime rates. Punishment should be justified on grounds other than crime reduction”.*

School programs for children with literacy and numeracy problems ignore the most powerful predictors of success – the pre-school home and neighbourhood environments. As mentioned above, very low birth weight babies are “saved” at earlier and earlier gestations in neonatal intensive care units and so on.

Quote: *“90% of the health dollar is spent on people who will be dead in 12 months”*

Many services for schools, health, mental health, child protection and justice are in crisis in Australia with people demanding more and more spending on band-aid solutions. At the same time there has been a reduction in those services which are most likely to prevent problems and enhance developmental successes such as early childhood, child health nurses, preschool and primary school teachers, public health programs, tobacco control and so on.

So, without even asking the questions as to why are we observing such increases in problems?, can we prevent them? and can we enhance child development?, we keep putting money into activities which are too late because the problem has become irreversible, and we keep cutting services which are earlier and more effective. And then the media and public rightly question “we have put all this money into mental health or Aboriginal and Torres Strait Islander health so why isn’t it improving?”

I hope it is becoming obvious to you why it is not; the interventions are too late – providing more renal dialysis machines to Aboriginal and Torres Strait Islander people is important and humane but it will not decrease renal failure in these people. Programs to reduce skin sores, vaccines against infections, better nutrition and so on in children are much more likely to do so.

4. Why have so many of the problems in children and youth not improved? Are there some common explanations?

Why ARE we observing these increases? Surely we cannot blame only economic reforms? Are there some common pathways here that influence both educational outcomes and behaviour problems in young children and suicide rates in teenagers? We now have a lot of research data to start to answer some of these questions.

“Children who have good early childhood experiences before age 6, in stimulating, nurturing environments have better outcomes throughout their life and the earlier they have these experiences, the better the result. They have better school grades, better self esteem, fewer social problems, and fewer health problems and less likely to be teen parents, use drugs or be involved in crime” Hertzman, Canada, 2003.

So it seems that there is evidence that if we neglect the early years of child development then there can be profound effects on a range of problems. Family environments then are crucial to the issues we are discussing. Most parents want to be good parents and want the best for their children but they need to be equipped and capable to do so. We also need to look beyond the family to neighbourhoods, workplaces, the social and economic policies and environments and to ask what is it about modern Australian communities which are what we might call “family-disabling”?

And here we come to the crux of all this – there are new and powerful drivers of these poor outcomes and social disparities in our society, ones which are increasing risks for individuals, families and neighbourhoods and decreasing the nurturing and hence the protective factors which enhance resilience. This is the broad explanation of these trends and yes, this includes economic reforms as Peter Saunders says:

“The key to improving social outcomes lies in abandoning the idea of market supremacy in favour of an approach that sees the market as one of the MEANS of achieving social objectives, not as an end in itself.” Saunders 2003.

There have been lots of other changes in our society, many quite rapid which have also impacted negatively on early child development and youth problems. These include disparities in opportunities and services (privatisation of things like child care means that those most in need may miss out), family breakdown, increasing hours of work, rapid technological change, the information explosion, stress, violence (violence has a particular and extreme effect on young children), reduced trust and social capital in neighbourhoods (less likely to call on neighbours for child care, advice, social support etc).

As the Australian of the Year, trying to reflect on these issues for the nation in a constructive way to enhance children’s and hence the nations futures, I think that we need a serious national debate about the role of work and family time as key developmental resources for children. We should look at other countries such as France which has legislated for a shorter working week and should look at what the economic, social and community impact of that has been.

5. What do we know about the causes and possible prevention of these problems?

Can we “vaccinate” our children against later school problems, drug addiction and suicide? If these rates have increased so much surely we can decrease them? There are 3 main points here –

1. The mechanisms appear to be explained by new research in brain development and the interactions between genes and social environments;

2. Adverse social environments interact with genetic potential to influence competencies which act over the whole life course and result in the intergenerational transmission of childhood vulnerability and further worsens social disparities; and
3. We have lots of evidence that early intervention to enhance child development is extra-ordinarily effective.

Exciting new research in neuroscience, the human genome, linking social and biological research, demonstrates the huge importance of early social environments in successful brain development. Childhood exposure to abuse and less severe levels of stress can actually change the brain through the 'switching on' of genes which influence other biological processes which govern brain responses – for example how we self regulate. This helps explain the increased rates of common disorders such as child and adolescent behaviour problems, attention and learning difficulties, obesity and eating disorders, depression and addictive behaviours.

Whilst research may deliver new drugs to influence some of these gene switching pathways, they are a long way off and are likely to be expensive. There is such strong evidence that providing a more nurturing social environment from birth is such a powerful factor to prevent such a range of problems and to enhance resilience and capacity – it seems to me more logical to implement such activities.

Programs to enhance child development and readiness for school, that is those focussing on the early years, have given further proof that what I have been talking about is likely to be true. You might expect that 'Head Start' and 'Early Head Start' (the Perry preschool project and Chicago child development programs) would have had an enormous impact on special education placements, better behaviour and academic performance in primary school, which they have. But they have also improved much later outcomes such as retention rates to year 12, intelligence tests, dental health, mental health, employment, teenage arrests, teenage pregnancy, welfare payments and substance abuse!!! Hey, why aren't we putting more efforts in to early programs – this must be at least part of the answer to our fifth question.

6. What should Australia do?

Why is this so important? Even if we don't particularly care about kids (which I do), even if we have not got children of our own, even if we only judge everything by an economic bottom line – this 'brain drain' I have described is the most concerning and worrying problem we have. Surely all of us want to be a fair Australia, an advanced Australia, a clever country that can both compete in an international knowledge economy AND look after the social problems of our modern world?

I have suggested that the quality of the social environments in which we live impacts positively, particularly in early childhood but also across the whole life span, which in turn secures better futures for our children and better social and economic outcomes for everyone. It means better workers and better communities. We need to use the resources of the whole community to manage the challenges of competing in a global knowledge economy, to create and use innovation and to manage complex problems in today's world (such as the environment, lifestyle, aging population etc).

As Michael Pusey wrote in 'The Experience of Middle Australia: the dark side of Economic Reform', *"a well ordered society needs strong markets and strong active governments and strong families all working together to put people first."*

So perhaps now you may be starting to understand my excitement and interest in these interacting social, biological, family, child development, educational and health for life patterns. And I am joined by a large and increasing group of researchers, policy makers and practitioners across the whole country, in universities, in centres and institutes, in government and non-government departments and organisations.

We have established a fledgling national network - the Australian Research Alliance for Children and Youth - with the aims of pulling together as much of the Australian expertise and data as we can to enable a new model for cross-disciplinary knowledge and 'research into action' for children and youth. Working together and copying both the United Kingdom and Canada, we are pushing for a National Children's Agenda. The Australian Research Alliance for Children and Youth and Longitudinal Study of Australia's Children, both of which have received funding from the Federal Government, are important first steps towards this. In these other countries the children's agendas have resulted in significant changes already.

In the United Kingdom they have a portfolio of programs to improve child and youth outcomes such as 'Sure Start', run out of Treasury. In Canada the National Children's Agenda has influenced the uptake of early intervention and population based research; a continuous longitudinal study to evaluate interventions and major new national research initiatives on human development and learning societies. And in USA they have initiatives such as 'From Neurones to Neighbourhoods' influencing research, policy to "think joined up". All of these programs have significant government support, that is new money and all of them value hard and rigorous evidence of what works.

So to summarise – our economic progress has not delivered better outcomes for children and families in Australia nor has it reduced the disparity across the social divide. The levels of these problems are now so high that services are already stretched in providing for them and all indications are that they are continuing to increase. While expensive 'band-aids' seem to be what the community are clamouring for, they will never deliver the long-term effective solutions to these problems, some of which may be coming entrenched in some groups in our community and crossing generations of families.

So my call, as Australian of the Year, as an epidemiologist/public health researcher committed to prevention, as a mother and potential grand-mother, as the CEO of a new national alliance aiming to reverse these trends, is for Australia to harness its great capacity, to work collectively to make sure that we put children first, that we reverse the real brain drain.

I am frightened about the road we are on, following the current trajectories towards a technological and wealthy elite, with increasing proportions of the population marginalised. Such a pathway raises concerns about the stability of society itself, with increasing social gradients, increasing problems demanding more and more

costly solutions. Alternative pathways may push us towards a more virtuous cycle aimed at prevention rather than costly cures, on to a path that encourages universal participation in collaborative knowledge building, not focussing only on economic prosperity but also how we function as a society – the notion of what the Canadians are calling a “learning society” and “raising and levelling the bar” (a reference to improving educational success across the whole community of children).

Let me quote Canadian Strategy:

1. *“safeguard the healthy development of babies;*
2. *strengthen early childhood services focussing on prevention and support for parents;*
3. *improve schools and local communities;*
4. *reduce segregation and the effects associated with poverty and*
5. *create a family enabling society.”*

And what may we find? My Aboriginal girl is far less likely to get middle ear infections because her physical and social environment has improved, and our young suicidal male was supported earlier in life before he reached a crisis point. Both finished school and are contributors. We have reversed the ‘brain drain’.

And we have found that what is good for children benefits the whole of society!

I would like to end with a quote from Gabriel Mistral:

“Many things we need can wait, the child cannot. Now is the time his bones are being formed, his blood is being made, his mind is being developed. To him we cannot say tomorrow, his name is today.”

As Australian of the Year I say to Australia – our time is now, we cannot wait.