

NORTH & SOUTH

June 2010 Issue 291

THE CASE FOR VACCINATION

"We have friends who have seen everything Charlotte's gone through and still refuse to vaccinate their kids. It's their choice, but it staggers me."

Charlotte Cleverley-Bisman's father, Perry Bisman.





TORRI DEANO

Good Science

Virginia Larson

Our obsession with health makes it a particularly powerful magnet for batty ideas and bad science. Increasingly, we're bombarded by pseudo-scientific mumbo jumbo and the internet must be sagging under the weight of self-styled nutritionists, homeopaths, naturopaths and other "experts" who mine our health fears and insecurities – often while flogging the benefits of their own-brand pomegranate juice, turmeric extract, detox foot patches and the likes.

In fact, to protect the next generation, Ben Goldacre's book *Bad Science* should be on the national curriculum – teenagers would appreciate his rage-fuelled writing style and many would emerge future-proofed against "new variants of bullshit".

The media mostly doesn't help. As a bad-science watchdog, it's often toothless or asleep on the porch. There are too few good science journalists who understand statistics and evidence. And there's all that space to fill in the daily press. Readers love a juicy "studies have shown..." story: "infidelity is genetic", "electricity allergies are real", "tomato juice tastes better on an airline flight than on the ground". Unfortunately, it's not just silly health-science stories that clutter our information sources but scaremongering and misinformation as well.

So *North & South* makes no apology this month for championing childhood vaccinations as a public good. We did not seek out the extreme anti-immunisation campaigners for "balance" because their arguments aren't balanced. They've already done enough damage by spreading hysteria over the MMR triple jab and are now set on painting the HPV vaccine Gardasil as part of some greater plot to poison or sterilise us.

My husband describes his childhood as "dangerous". Madcap boys' adventures in the Michigan woods aside, his mother refused to have

him vaccinated. Even as polio left a trail of paralysis across North America in the late 1950s, Ron was sent to school with a letter demanding he not be vaccinated against the disease.

Mind you, had he fallen out of a tree, severed an artery and been bleeding to death, his mother – a Jehovah's Witness – would also have battled against giving him a blood transfusion. God would protect him. Later, Ron decided otherwise and at 18 took himself to the doctor and had all his shots.

Today, there's a new wave of middle-class, concerned parents who believe they've "done the research" and decided that careful hygiene, wholesome organic food and natural remedies are sufficient protection for their children against the infectious diseases that blighted their parents' and grandparents' generations.

These diseases have not been eradicated, however. They still maim and kill in undeveloped countries and they lurk in the shadows of our more salubrious lives.

While detox foot baths, homeopathy and smearing salmon roe DNA on our faces may be doing us no harm (and vitamin supplements some good occasionally), evidence-based, modern medicine is a benefit we should not take for granted.

The childhood immunisation programme is simply "good science".

As our Overseas Investment Office scrutinises a Chinese-backed bid to buy several North Island dairy farms, we can only hope they review a decision they made in 2008 clearing the Russian company Nutritek to increase its stake in Waimate-based New Zealand Dairies Ltd from 5.65 per cent to 100 per cent.

Despite extensive, detailed submissions from former NZDL directors and dairy experts opposing Nutritek's application (Mike White chronicled their concerns in his June 2008 story *From Russia with Cash*), the OIO delivered a chirpy press release extolling its own due diligence and handed Nutritek full ownership of the milk-processing plant.

So how good was the OIO's "careful investigation" of the bid? Not too sharp, it seems. Nutritek is now facing bankruptcy; it owes \$US210 million and Russian brokers have suggested shareholders are frustrated by its "opaque" business model.

The Chinese investors behind Dairy (NZ) Holdings, who have their eyes on more than 100 farms, do not have New Zealanders' interests in mind. Ultimately, they want to control the food-production chain from Kiwi pasture to Chinese plate, tossing a few jobs at us on the way through.

But don't count on the OIO taking any of this into account; overseas investments rules are being "simplified" and, in the words of Finance Minister Bill English, "98 per cent of applications are approved, anyway."

“North & South makes no apology this month for championing childhood vaccinations. We did not seek out the extreme anti-immunisation campaigners for ‘balance’ because their arguments aren’t balanced.”



COVER CREDITS
 Photographer: Jane Ussher
 Art Director: Jenny Nicholls

+ Cover story

THE CASE FOR VACCINATION

Why aren't "good" parents vaccinating their children, asks Joanna Wane, and are they putting the rest of us at risk?

JOANNA WANE IS *NORTH & SOUTH*'S DEPUTY EDITOR. PHOTOGRAPHY BY JANE USSHER.

Right: Charlotte Cleverley-Bisman sucks on an iceblock while watching TV. Known throughout the country as "Baby Charlotte", she contracted meningitis during a nationwide epidemic when she was just six months old and had to have all her limbs amputated. Now aged six and at primary school on Waiheke Island, she missed out on a mass immunisation campaign by just a few weeks.







Charlotte Cleverley-Bisman loves sweets. Wearing a bright-red daisy hair tie and stretchy black shorts, she's been rolling around on her dad's rumpled bed like a restless seal. Then she spots a bowl of her favourite "rainbow lollies" and comes bouncing over on her stumps.

Wedging the Pebbles into a small fold of pink, scarred flesh where her arm used to be, she shovels them into her mouth. Then she picks up the whole bowl and pours the last ones straight down her throat. Grinning, she takes a swig from her water bottle and burps. "Don't be a Gilligan," says her dad, Perry Bisman, kissing her as she rubs the bristles on his cheek.

Six years ago, Charlotte's body started to

die as poison spread from the black, wilting tips of her fingers and toes to the swollen, blistering skin on her arms and legs.

One of the youngest survivors of meningococcal septicaemia, she was six months old when all her limbs were amputated in an eight-and-a-half-hour operation at Auckland's Starship hospital, with the media virtually camped outside her door. Her first words were "Sky Tower", because that's what she could see through the window from her bed.

This November, "Baby Charlotte" turns seven and she knows exactly what she wants for her birthday: a Wonder Woman party. Her mum, Pam Cleverley, has already bought her the outfit. Now the Waiheke Island school-girl has bionic legs to match.

Most people bring back a T-shirt or baseball cap from a trip to the States. At the end of April, Charlotte came home with a pair of laser-moulded prosthetic legs. Worth

\$US65,000 (\$89,000), they were custom-made for her as a gift from the company's owner, Matt Daniel, an American amputee who met the family last year at a camp for people with limb loss. She wore them to school on her first day back, but for Charlotte the real highlight of this year's camp in California was learning to wrestle – something she turned out to be pretty good at.

"The kids love being there because it's one of the few times they're the normal ones and anyone with all their limbs is a freak," says Bisman, who reckons it'll take her a while to get used to new legs, even flash ones like these that finally fit properly. "Apparently you can do cartwheels in them."

CHARLOTTE HAD missed out on the meningococcal B (MeNZB) vaccine by just a few weeks. As she lay in hospital fighting off one infection after another, a \$200 million

“We have friends here who have seen everything Charlotte’s gone through and still refuse to vaccinate their kids. It’s their choice, but it staggers me.”

Perry Bisman, Charlotte’s father

immunisation programme was being fast-tracked into action by the Ministry of Health. In a controversial nationwide campaign, the vaccine against a particularly virulent strain of meningitis was offered free to everyone under the age of 20 – short-circuiting an epidemic that had infected thousands of people since 1991 and left 220 dead.

Within two years, more than a million children and teenagers throughout New Zealand had been given their first dose. One of them was Charlotte. “After all the operations she’d been through, watching her have a needle stuck in her arm again was gut-wrenching,” says Bisman. “But she had her three shots as soon as she was well enough, because she could have been infected again.”

Concerned by what he saw as scare-mongering over the vaccine’s alleged side-effects, he went public to support the ministry’s campaign. Although the programme ended in 2008, when the dwindling number of reported cases no longer warranted mass immunisation, he’s still on message.

“You hear all sorts of stories, but that’s all they are. Stories. The evidence just isn’t there,” he says. “We’re living in an age of disinformation and the anti-immunisation protest movement has some really active, intelligent people who are very good at spinning an argument to make pseudo-science look real.

“We have friends here who have seen everything Charlotte’s gone through and still refuse to vaccinate their kids. It’s their choice, but it staggers me.

“At the end of the day, do you want the possibility of what happened to Charlotte to happen to your own child? If it’s a disease that’s preventable, why would you allow that possibility, instead of taking a very small, calculated risk by having the vaccine?”

It’s a question health officials found themselves asking last year, when a Unicef report on child welfare ranked New Zealand’s immunisation rates among the worst in the



Charlotte’s new \$US65,000 laser-moulded prosthetic legs were custom-made for her as a gift. Using state-of-the-art technology unavailable here, they’ll give her the freedom to jump and run for the first time.

OECD, particularly for whooping cough (pertussis) and measles.

In 2007, only 75 per cent of our two-year-olds were fully immunised. A Government campaign, largely centred on motivating district health boards and improving access to preventive healthcare in poorer communities, has pushed the strike rate to 85 per cent. That’s still below the numbers needed for “herd immunity” to prevent infections circulating – yet another example of how far we lag behind our neighbours across the Ditch. Babies born in New Zealand are five times more at risk of catching whooping cough than in Australia, where a range of initiatives including cash payments for parents and GPs have helped push up compliance to around 94 per cent.

In March, a nine-month-old baby was admitted to hospital in the Hokianga with measles after an outbreak in an extended

family community where most of the children hadn’t been vaccinated. So far, 31 more cases have been reported in Northland.

A much more infectious disease than swine flu, the measles virus was brought into the community by a visitor from India. It’s then believed to have spread to Wellington after a group travelled south to support Hokianga farmer Sam Land and two other men charged with damaging the Waihopai spy base.

Another case in Brisbane has also been linked to the outbreak in the Hokianga.

PHILOSOPHICAL OBJECTIONS to vaccination are often driven by the desire to inhabit a more “natural” world. But alternative lifestyles – including those who prefer their drugs to be purely recreational – aren’t the only ones saying no to the needle. To jab or not to jab is the latest hot topic at middle-class coffee groups, where going with the science is no longer something readily taken on trust.

Mothers who would once have immunised without question as the right thing to do now see it as a personal choice based on informed consent. The modern child is a precious, limited-edition resource. And deeply committed modern parents don’t want anyone, particularly the Government, telling them what to do.

The idea that building up natural resistance is more effective than artificially stimulating our immune systems isn’t a new one. “Homeopathic immunisations” are available from some natural-health centres, and vaccination is actively opposed by many chiropractors and osteopaths (whose own claims are often met with a blind faith not extended to conventional medicine).

In a climate where the trend is to de-medicalise childbirth, midwives and ante-natal classes often present immunisation as a debate where both sides are given equal weight. One mother spoken to for this story said that while her own GP had no doubts about vaccination, her chiropractor was strongly against it. “Why should his opinion have any less validity?”

Some talked of friends who’d removed their babies from Plunket after feeling pressured into a decision, while several said they were dismissed as neurotic and “difficult” if they raised concerns.

North & South witnessed one extremely tense confrontation between a first-time mother and the practice nurses at her local health centre when she wanted her son vaccinated for whooping cough but not Hepatitis B or Hib (haemophilus influenzae type b).



Anxious mothers say they're treated as difficult and neurotic. Says one first-time mother: "You know what the diseases will do. You don't know what vaccinations will do to your child."

"I'm breastfeeding my baby and he isn't in daycare so he's not high risk," says the mother, who gave birth under the care of an obstetrician and describes herself as pro-Western medicine. "But when I asked about staggering his shots, I was treated as an inconvenience and as if I was stupid."

On maternity leave from her legal firm, she's done so much research on immunisation that she can quote mortality trends for each of the diseases. "I'm not anti-vaccination at all; it's just being informed about what you're putting into your child. And the choice of staggering or delaying isn't made clear."

Auckland GP Michele McVie admits she was "flummoxed" to come across educated, professional parents skipping shots after she emigrated from South Africa. During her training in Johannesburg, she saw kids from both poor and privileged homes hospitalised with complications from measles while tiny babies with whooping cough were hooked up to respirators, exhausted from the effort of trying to breathe. Anxiety about possible reactions to a vaccine came low down on the list.

"When I think of the hand-holding we do here, the time spent encouraging people to come in, and the care around it..." she says. "Somehow medicine is seen as having an ulterior motive, fed by drug companies which

don't have the patients' wellbeing at heart. But I've seen these diseases first-hand and for me, it's a no-brainer."

While only a few hardline activists in what's been called "the vaccine war" rage about biological warfare and a global con, an estimated 30 per cent of New Zealand parents are swinging voters. And it's hard to convince them of threats they no longer see.

Hailed as medicine's greatest triumph, vaccination is credited with increasing our life span by 30 years over the past century – driving many diseases underground.

In the 1920s, diphtheria was the most common killer of teenagers in the United States; it's unheard of now. Photos of hospital wards lined with patients in iron lungs during the 1950s polio epidemic look like something out of a science fiction movie. So when the University of Google throws up harrowing sites like the "international memorial for vaccine victims", our perception shifts over where the real danger lies.

After Dr Andrew Wakefield's (now thoroughly debunked) theory linking autism with the MMR vaccine was published in 1998, a slump in immunisation rates saw mumps reach epidemic levels in Britain and the first death from measles for 14 years.

There are few absolutes in medicine. Vaccines aren't 100 per cent effective and they

can cause side-effects; in rare cases some of them are severe. It's the same risk-to-benefit calculation every time we jump into a car, despite the road toll, or board a plane – taking on trust the complex aerodynamics that stop it plummeting from the sky. One in a million babies given the MMR vaccine will develop encephalitis (brain inflammation); one in 1000 get encephalitis from the measles.

THE CENTRE for Adverse Reactions Monitoring (CARM) was set up at the University of Otago in 1965, after the thalidomide epidemic, to look for patterns of possible side-effects that might raise alarm. Since then, there have been nine reports of anaphylactic shock associated with a vaccine; one of those patients, who'd received both the tetanus vaccine and penicillin, died.

The death of another elderly patient after a flu vaccine may have been caused by an anaphylactic reaction or an unrelated pre-existing medical condition. The only other reported death, of a teenager six months after her third Gardasil vaccine, is before the coroner (see *A Shot in the Dark*, page 44).

Proving cause rather than coincidence is tricky. A link between flu vaccines and extremely rare cases of temporary paralysis with Guillain-Barré syndrome can't be confirmed because the numbers are so small. (However an episode of flu itself is known to raise the risk of developing the syndrome.)

New Zealand has the highest reporting rate of adverse reactions in the world, according to CARM director Michael Tatley – which he ascribes to high levels of vigilance here. More than half are about vaccines, although he stresses a reported reaction isn't proof of a causal link.

Tatley is confident it's an effective system and that health authorities are quick to act on warning signs. In 1999, an early rotavirus vaccine was taken off the market in the United States because it was linked to an increased risk for intussusception, a type of bowel obstruction.

"I haven't seen anything yet, with all the literature I've read and all the data we see here and all the networks we're part of, that suggests any of the vaccines [currently on schedule] are any cause for concern," he says. "An awfully large number of people have been exposed to vaccines and if they're as bad as some of the anti lobby are suggesting, there must be a lot of really sick people out there. And we just don't see them."

In April, Australia suspended seasonal flu shots for children under five after numerous reports of febrile convulsions (a common

childhood problem associated with high fever). A two-year-old girl in Queensland died within hours of receiving the vaccine, which protects against the H1N1 swine flu virus, although an initial autopsy showed no sign it was to blame.

Here, three cases of febrile convulsions in under-fives have been reported after the same Fluvax injection. That's not an unusually high number, but the Ministry of Health is playing it safe and has advised giving the brand Vaxigrip to young children instead while investigations are made.

Parents understandably dread side-effects, especially in a precious newborn baby, but mild reactions such as a rash, fever, or a child who's grizzly and off-colour for a few days are healthy signs the vaccine is working.

Essentially, immunisation tricks your body into thinking it's under attack by exposing it to antigens (inactivated molecules that stimulate your immune system to produce antibodies but can't cause the disease). Your immune system then mounts a response in exactly the same way it would if you had encountered those antigens in the wild – but without the unpredictable and potentially dangerous effects of actually being infected.

"A lot of people don't understand how it works," says Lisbeth Alley, a nurse and immunisation facilitator with the Immunisation Advisory Centre (IMAC). "They think we're injecting them with all sorts of toxins and mucking up their immune systems. But every time you put your finger in your mouth, you're presenting antigens to your immune system in a very similar way."

The belief that multiple vaccines overwhelm a newborn's immature immune system just isn't true, she says. From the minute they're born, babies are designed to handle a huge influx of antigens and the younger they are, the better they respond. Improved technology also means that vaccines have been purified. Ten years ago, babies were injected with more than 3000 antigens at their six-week shots; today it's down to around 50, even though more vaccines have been added to the schedule.

Nor does Alley recommend putting off those early-childhood shots. New Zealand data shows babies are six times more likely to end up in hospital with whooping cough if their vaccinations are delayed by as little as four weeks. "Maternal antibodies wane after six to nine months, so you want them to have developed their own immunity by then."

On the internet, no one knows you're not a doctor. As Alley says, anyone can set themselves up as an anti-vaccination expert and



Iron lungs jammed into a Boston hospital in 1955 during a worldwide polio epidemic.

“Every time you put your finger in your mouth, you’re presenting antigens to your immune system in a very similar way [to a vaccination].”

Lisbeth Alley, a nurse and immunisation facilitator with the Immunisation Advisory Centre (IMAC).

their opinion is given the same legitimacy as specialists who know the business inside out. "It does a lot of damage and someone has to respond with the science. It's just so irrational that our Government would pay mega amounts of money to poison our kids – with no gain. That's their argument and it's hard to understand."

She doesn't like to say it, but the world has also become a more selfish place. "People feel responsible for themselves and their families; that's where it stops. Some parents honestly believe if they feed their children organic food, keep them in a lovely, clean environment, look after them and love them, they'll be protected. But these diseases are still out there, just under the radar, and if our community protection drops off, the risks go up hugely for everyone. We don't live in a bubble; the rest of the world is only a plane ride away."

TO ANTI-VAX activists, pharmaceutical companies are the equivalent of tobacco

manufacturers – trading in lives for profit. And Nikki Turner is damned as their partner in crime. "How do you sleep at night?" they ask her. "You're killing babies."

Turner, who still works as a GP for the Auckland City Mission, set up the Immunisation Advisory Centre (IMAC) at the University of Auckland 12 years ago. Handling all the personal hate mail was tougher then.

"I'm even more committed now because most of the issues we've been through before and a lot of it is simply dishonest," she says. "I still do my Catholic revision of conscience when I look in the mirror and ask if I've got the data right. But how could you not advocate for immunisation when you see the evidence and know the damage from these diseases?"

Turner pulls out a graph showing the number of Hib cases nosediving after a vaccine was introduced in 1992. What used to be the most common cause of bacterial meningitis in children under five – killing one in 20 sufferers and leaving a third of all survivors with permanent brain or nerve damage – is virtually eradicated here now.

"I look at that graph and I cry every time I see it. That's what absolutely encapsulates it for me. From having 40 to 60 kids a year with Hib disease, now you only get one or two. When you get a nasty email, that's what gets you out of bed the next day."

In the late 1980s, Turner was working in neo-natal paediatrics in Britain during a whooping cough outbreak after false reports linked the vaccine to brain damage, causing



HENRY NICHOLLS

One of several reminders in Wellington's Bolton St cemetery of the epidemics that once raged in New Zealand. In 1876, John and Sarah Duff, despite their evident wealth, lost five children to diphtheria within 12 days — Hannah, one, Agnes, eight, Margaret, 10, John, 11, and finally Edith, six.

“Some parents honestly believe if they feed their children organic food, keep them in a lovely, clean environment, look after them and love them, they’ll be protected. But these diseases are still out there.”

Lisbeth Alley

immunisation rates to plummet.

Her best friend's premature baby daughter had just come home from the neo-natal ward. A week later, she was rushed to hospital with whooping cough — infected by two older brothers who hadn't been vaccinated.

“I was on call that night and actually had to save Bethan's life when she was being transferred to Manchester and the [breathing] tube slipped out. Anne was travelling behind us and when we stopped the ambulance to put the tube back in, I knew she thought her baby had died.”

As a mother, Turner understands the grief behind the visceral anger — even hate — that she sees in some parents' faces when she gives public presentations on immunisation. Her oldest child has a significant congenital handicap. “You want to know the reason and I've never found one. I'm still blaming Welsh irradiated sheep because we were in the UK when I was pregnant.”

Helen Petousis-Harris, IMAC's director of research, understands too the vulnerability all women feel as mums — and the desire to do the best for their kids that unites them. She paid for her two older sons to have Gardasil shots to help prevent the spread of HPV. But when her third son was born in the thick of the MMR controversy, she sent him in with her husband to have the injection “and waited for him to become autistic. I knew perfectly well it was ridiculous but no one's immune to that stuff.”

In 2007, a meta-analysis of existing research was published allaying fears that immunisation causes sudden infant death syndrome (in fact it was associated with halving the risk). A myth of our own — since exported internationally — suggests Gardasil may cause infertility in young girls. That story made the cover of a local health magazine, based on a study where huge doses of one of the ingredients, polysorbate 80, was injected into the abdominal cavity of newborn rats.

“So you should stop eating ice cream because there's lots [of polysorbate] in that — even more in fat-free,” says Turner. “That's a real example of creating a fallacy overnight. The thing is, you can be really well educated and still not have a clue about how to find and read the accurate science.”

“It amazes me people call it the ‘immunisation debate’. There's not an immunisation debate in science. There's a debate about aspects of the vaccines — whether it's the right one, what the side-effects are and how you use it, whether the formulation is safe and whether the specific disease is worth vaccinating against. But when it comes to the principles and effectiveness of vaccines, there's absolutely no debate.”

DID HE TRY to be brave, little James Phipps, as he held out his bare arms to be given a dose of the pox?

Smallpox was killing one child in seven across 18th-century Europe when English scientist Edward Jenner put his theory to the test: that exposure to cowpox, a much milder disease, would give them immunity.

Pus scraped from blisters on the hands of a milkmaid who'd been infected by a cow

called Blossom was put into cuts on the boy's arms. Six weeks later, after he'd recovered from a slight fever, James was vaccinated again — this time with the smallpox virus — and showed no sign of infection.

“Had the [watching] chorus but known how fully charged with the fate of man that drama was, how glorious the issue of the play!” crowed the *British Medical Journal*, marking the Jenner Centenary in 1896.

Who knows what happened to the milkmaid, Sarah, and her poxy blisters. But Blossom's hide hangs in state at St George's Medical School in London and Jenner — the “father of immunology” — is credited with saving more lives than the work of any other man. By the time smallpox was officially eradicated in 1980, it had claimed an estimated 500 million people.

There's no doubt the vaccination industry is big business, with a global value estimated at more than £10 billion (\$21 billion). In developing countries, demand often exceeds supply. But it's also an investment. Developing a new vaccine costs up to €2 billion (\$3.6 billion) and can take 20 years.

At the Malaghan Institute in Wellington, scientists are working on a more effective adult vaccine for TB. The prospect of therapeutic vaccines to treat diseases such as melanoma and prostate cancer by harnessing the patient's own immune system also look promising.

In the end, vaccination is an economic calculation governments measure not just in lives but in the cost of medical treatment, long-term injury and time off work. Vaccines against chickenpox and rotavirus have been recommended for funding on the national immunisation schedule when it comes up for review next year. And in the not-so-distant future, needles might be replaced by nasal sprays or skin patches — an initiative one immunisation expert reckons would lift compliance to 95 per cent overnight.

A Government inquiry into our low immunisation rates finished hearing submissions last month. Whether to follow Australia's lead and offer cash incentives is one issue up for debate.

Public demand may eventually lead to personalised immunisation programmes, says Pat Tuohy, the Ministry of Health's chief adviser on child and youth health. However, splitting vaccines isn't easy as individual doses aren't available for every disease.

“It's not a direction I would recommend we go but if it means the difference between someone opting out completely, the health system would have to listen.”



Auckland GP Dr David Bulmer gives his 11-year-old daughter Maria a flu shot.

Critics have called for more transparency in decision-making and how immunisation programmes are marketed. The MeNZB (meningitis) campaign came under attack for not making it clear that protection from the vaccine was only for that specific strain of the disease and would not be long-lasting.

Perhaps the real question, ponders Tuohy, is just how informed consent needs to be. "We're accused of withholding information, but the *Immunisation Handbook* has more information than anyone would need to know. But how well-equipped might someone be to

critically evaluate, for example, a scientific paper? Is it a randomised control trial, a cohort study, just one case or just someone's hypothesis? A lot of people have no idea which is likely to be more reliable than any other."

• *Soon after Charlotte Cleverley-Bisman was hospitalised, a trust was set up to raise funds for her ongoing support and to increase awareness of meningitis and meningococcal disease. To read more about her story and the Charlotte Lucy Trust, visit www.babycharlotte.co.nz.*

"It amazes me that people call it the 'immunisation debate'. There's not an immunisation debate in science."

Dr Nikki Turner,
Immunisation Advisory
Centre (IMAC)

A Shot in the Dark

The number of girls signing up for the HPV vaccine Gardasil has taken a hit since the unexplained death of Upper Hutt teenager Jasmine Renata. With the coroner's inquest yet to be held, how serious are concerns over the vaccine's safety?



Internet stories on the "victims" of Gardasil read like memorials to casualties in a global war. On YouTube, grieving mothers hold framed photos of their daughters alongside postings that use words such as bioweapons and eugenics and killer vaccine, while specialist "Gardasil lawyers" offer free consultations to sue for compensation.

It's emotive, disturbing, often extreme. But the media frenzy in the United States over the vaccine, which immunises against HPV infection – the major cause of cervical cancer – came closer to home last September when 18-year-old Jasmine Renata died suddenly six months after receiving her final injection.

Her death is being investigated but no date has yet been set for an inquest. The Wellington coroner's office told *North & South* a heavy schedule meant there was no guarantee the case would come up before the end of the year.

To anti-immunisation campaigners on the scent of a cover-up, that's added fuel to speculation there's something to hide.

You'd think a medical breakthrough that might one day eradicate cervical cancer would have us dancing in the streets – and that people would be queuing up with their daughters when the Government decided to pay for it. But even some pro-vaccination parents who didn't hesitate to give their kids all the usual childhood jabs are watching cautiously from the sidelines on this one.

Jasmine began developing health problems immediately after the first of three doses of the vaccine, according to her mother, Rhonda, who appeared before Parliament's health select committee in April as part of a Government inquiry into the country's low immunisation rates.

Pat Tuohy, the Ministry of Health's chief adviser on child and youth health, describes her oral submission as harrowing. "A lovely daughter dies suddenly in her sleep; most people have never heard of it happening. But it does happen."

About 20 apparently healthy children and teenagers die without warning in New Zealand

Wellington teenager Violet Hilton, 17, overcame her fear of needles to be vaccinated against HPV – to the approval of her father, Craig, an immunologist. "I'm proud of the poor punctured thing."

every year, often from undiagnosed heart conditions. The same month as Jasmine's death, a 14-year-old girl in England died hours after she was given a dose of Cervarix, an alternative HPV vaccine used in the UK. An autopsy revealed she had a malignant tumour in her chest.

Since Gardasil went onto the market in 2006, 54 million doses have been distributed to more than 100 countries worldwide. To date, not a single death has been officially attributed to the vaccine.

A statement from the Immunisation Advisory Centre (IMAC) had this to say: "Based on what we know about the Gardasil vaccine and other vaccines, we would be very surprised if Jasmine's death was vaccine-related. The symptoms that we are aware of are not suggestive of a vaccine reaction. However, some of the symptoms ... are consistent with other medical conditions associated with sudden death in young people."

More than 100,000 girls aged 12 to 18 have joined the Government's \$177 million HPV immunisation programme, which began a nationwide roll out in September 2008. By the end of January, 242 "suspected adverse events" had been reported to the Centre for Adverse Reactions Monitoring (CARM) at the University of Otago following Gardasil injections, ranging from fainting and nausea to hair loss and the facial paralysis Bell's palsy. However, that doesn't prove a causal link. The Bell's palsy, for example, may have been caused by a recent infection.

One report involved a girl who was hospitalised for symptoms including diabetes and eye problems diagnosed before the vaccination; others such as swelling, fever and skin rashes are recognised side-effects.

Reports are monitored and matched against international databases to look for any patterns that trigger alarm. So far, CARM director Michael Tatley says nothing has emerged to raise any safety issues of concern.

That doesn't convince one parent whose posts to a heated Sciblogs debate over Gardasil blame the vaccine for ruining her teenage daughter's life. "Try proving what has actually caused her extreme fatigue, migraines, aches and pains, pins and needles, cold sweats, a very sore arm from the jab, fevers, extreme mood swings, depression, suicidal thoughts and the list just goes on." However, none of the medical experts spoken to for this story expressed any reservations about the safety – or efficacy – of the vaccine.

"Would I have it myself? Yes, I would," says Auckland specialist Dr Min Lo. "Would I get my child to have it? Yes, I would. Would I have my son have it? Yes, I would. It's a wonderful development in terms of health."

The real problem with Gardasil, according to Lo, is that it has an image problem. Dubbed the "promiscuity vaccine" in the United States,



it's tainted by the fact that cervical cancer is essentially a sexually transmitted disease.

Genital HPV (human papillomaviruses, or "wart viruses") are extremely common and affect both males and females. Most people who are sexually active will be exposed to HPV at some stage during their life. The vast majority of infections, which can cause warts or disturb cells in cervical smears, clear up without any problems. But the small percentage that stick around can eventually cause abnormalities in the cervix and, if untreated, lead to cancer.

Gardasil targets four HPV types, all of which can cause abnormal smears. Two are responsible for over 70 per cent of cervical cancers – a disease that kills more than 60 women in New Zealand each year. The other two cause 90 per cent of genital warts (not dangerous but ugly, embarrassing and difficult to treat).

Each year, smear tests return around 25,000 abnormal results, requiring further investigation by colposcopy, and possible tissue sampling or biopsy. That's as emotionally traumatic and scary as finding a lump in your breast, says Lo, who compares the backlash against the vaccine to the hype over the breast-cancer drug Herceptin, subsidised by the Government at huge expense.

"The Herceptin drug trials showed it only works for six months. It's a difficult drug to take, with complications and side-effects. But there was a lot of controversy over the Government not funding it for a 12-month period and media coverage created a lot of emotion. On the other hand, the HPV vaccine trials showed such good results they were stopped early to continue development of the vaccine.

"I don't think there's been another product this difficult to market because of the complexity around it and the stigma associated with HPV."

Australia, which introduced Gardasil a year

before New Zealand, has already seen a dramatic reduction in the prevalence of genital warts. Here, the number of cervical smears with CIN1 and CIN2 lesions is starting to fall. As with the Hepatitis B vaccine, which induces a similar immune memory in the cells, protection is expected to last for life.

Because it's most effective before exposure to HPV, girls are being immunised free from the age of 12, although Lo has also had women in their 20s and 30s coming out of long-term relationships willing to pay for their shots.

Nationwide, 95 per cent of eligible schools have signed up to run the programme, with some incorporating it into their health and PE curriculum. However, a teacher at one girls' school was disturbed by the "alarmist" tone of the Gardasil presentation at a mass assembly which showed DVD footage of a young woman with cervical cancer.

Amelia Marks says students weren't given time for questions and there was no mention of the importance of cervical smears. When she queried whether using condoms could prevent HPV transmission, the presenter referred to their failure rate in preventing pregnancy as evidence of their unreliability.

"As well as not answering the question, dissing the use of condoms is not cool," says Marks. "It was such a great learning opportunity to understand their bodies and have a wider conversation about their sexual safety. Most of them don't even know where their cervix is."

(According to Dr Min Lo, studies show that condoms, if used "meticulously", are only 70 per cent effective at protecting against HPV infection, which is transmitted by skin contact, not necessarily penetrative sex.)

Last year, an unsigned letter alerting parents to the dangers of Gardasil circulated widely around schools, and a magazine article linking the vaccine's use to infertility found its way on to staff notice boards.

One activist, Timaru mother Julie Smith, has set up a dedicated anti-Gardasil website, Off the Radar. Unconvinced HPV causes cancer, she suggests the girls now being vaccinated will one day be known as the Gardasil Generation, "covertly sterilised by their own Government".

Searching for hidden meanings in the vaccine's name, she broke down the word Gardasil on Google and found references to everything from a lake in Italy where Hitler did secret tests of prototype flying saucers to a character in a science fiction movie, created using human and alien DNA. "It's pretty 'out there', I know," she writes, "but it sure does get you thinking."

Exactly what it gets you thinking will depend on who – and what – you're prepared to believe.



POINTS OF VIEW

Precious Vessels

“Your baby is the most precious thing in the whole world...
The last thing you want to do is shoot him up with toxins.”

Huia Minogue (above), 34, part-time marketing consultant and mother of Roman, four.

Huia Minogue describes herself as an information seeker who prefers to make decisions on facts rather than emotion.

Stylishly dressed for her one-day-a-week marketing job in the city, she doesn't buy into conspiracy theories that paint immunisation as some kind of global pharma-industry hoax.

“I did a science degree,” she says. “I'm aware of the impact vaccinations have had on society as a whole. But I've never met a parent completely happy with their choice.”

Before her pregnancy, Minogue had never given much thought to immunisation, but when the Plunket nurse started talking about Roman's six-week shots, she made an instinctive decision to delay them. “All of a sudden I had a baby and everything changed.”

Since then, she's struggled to navigate what she views as a sea of propaganda from both sides of the debate. When the Ministry of Health information provided didn't address her concerns, a friend who's an advocate of alternative medicine (and hasn't vaccinated her own child) sent her some pamphlets.

“They told a completely different story. And that's what I found over and over again. There's no middle ground.”

A Playcentre mum and “quite a Greenie”, Minogue lives in a small community in the Waitakere Ranges, buying organic meat when she can and fresh produce from local farmers.

Friends warned her some schools might refuse to accept Roman if he wasn't fully vaccinated. (Immunisation isn't mandatory and children can't be excluded from school on those

grounds.) She'd also heard scare stories about the mercury-based preservative thiomersal (still considered safe but no longer used in routine childhood vaccines) and that some viruses were cultured on monkey cells (a lab technique used to develop the polio vaccine).

“I was breastfeeding, using cotton nappies, making sure there was no lead in our paint and no colouring in his food,” she says. “You're creating this wholesome, natural little environment – why would you want to inject terrible viruses into a small infant?”

What Minogue wanted – and says she couldn't find – was a detailed breakdown comparing the effectiveness of each vaccine and the risk of adverse reactions weighed against the dangers of contracting the disease or causing serious harm by infecting someone else. (People with suppressed immune systems, such as someone having chemotherapy for cancer, are particularly vulnerable.)

On her GP's advice, she vaccinated Roman against whooping cough because of its relatively high prevalence in New Zealand and the childhood memory of her emaciated little brother who was sick with it for months. She also agreed to vaccinate for tetanus – “I'm a farm girl and have horses” – but not Hepatitis B or Hib (haemophilus influenzae type b). Roman was also immunised against diphtheria and polio, because they're bundled together with whooping cough and tetanus in the same shot.

The only time Minogue has doubted her decision was when Roman was admitted to hospital with a high fever and the doctor in A&E accused her of being irresponsible for not having him fully vaccinated.

“He was so upset, and I totally understood where he was coming from because he's seen some tragedies down the line. But I also know he sees all the worst cases so his perspective is skewed.”

Roman turned four in April and was given a booster for the shots he had as a baby, leaving him with a sore arm and a red, itchy lump around the injection site. He's also due his MMR (measles, mumps and rubella) shots but Minogue has yet to make a call on that.

“You can hear from my voice how much it still affects me,” she says, close to tears as she talks about desperately wanting to do the right thing by her son. “Times have changed. People don't want to be told, ‘Just do this.’ They're asking, ‘Where's the proof?’”



“If you want advice about the law, you go to a lawyer. If you want advice about vaccinations, you ask a doctor who has a medical background and is in the best position to judge.”

Above: Shelley Duggan, with Lola.
Left: Duggan with Kobe, Piper, Lola and 15-year-old niece Jess.

POINTS OF VIEW

Straightforward Decision

“Vaccines have been developed for our protection, not because the Government wants to poison us.”

Shelley Duggan, 38, lawyer and mother

Four-year-old Lola Funnell wanders into the room looking like a dishevelled pre-Raphaelite princess with unruly ringlets, still half-asleep from her afternoon nap. Her little brother, Kobe, who’s two, is more of an Impressionist judging by the paintings his mum has spread out in the sun to dry. Baby Piper, a pink-cheeked chub, sits corralled in her play ring on the floor.

A lawyer by profession, Shelley Duggan hasn’t hesitated to vaccinate all her children. She’s even paid for extra jabs that aren’t funded. “I felt it was the best for my kids and I do think we have a community responsibility to be immunised,” says Duggan. “At the back of my mind was the feeling that these are dreadful illnesses, and I didn’t want my kids to get them or to have them in the community.”

Kobe, who was a “chesty baby”, had a Prevenar shot to protect against pneumococcal disease before the vaccine was added to the national immunisation schedule. Duggan also chose to immunise both Kobe and Lola against chickenpox when she was pregnant with Piper, because she didn’t want her newborn exposed to the virus.

Not that she didn’t have to grit her teeth when, Lola, her firstborn, was due for the six-week shots. “I still remember how nervous I was. But I breastfed her afterwards and it wasn’t as bad as I thought it would be. I was more stressed than she was,” she laughs. “Kobe just slept after his, and Piper is so placid she isn’t bothered by anything, whether it’s teething or vaccinations.”

Duggan struggles to understand the groundswell of anxiety around

immunisation and the distrust of the medical profession that implies. For her, it was a fairly straightforward decision. “If you want advice about the law, you go to a lawyer. If you want advice about vaccinations, you ask a doctor who has a medical background and is in the best position to judge,” she says.

A few weeks ago, her 15-year-old niece Jess, who lives with Duggan and her husband, Damian, decided to have the HPV vaccine Gardasil when it was offered at her school. Hours after getting her first shot, she almost fainted, then was sick and feverish for the next two days. Duggan says even the nurse who gave Jess her injection thought she’d had a bad reaction to the vaccine – until the rest of the family came down with the same bug and started vomiting too.

That experience showed her how easy it was to jump to the wrong conclusions without any real evidence.

“I just don’t believe our Government would want to deliberately hurt young babies,” she says. “All the other issues you read about as a parent – stillbirth, miscarriage, infertility – I know people that these things have happened to. But I’ve never known anyone who’s had any problems with vaccinations other than a grizzly child.”