Books

Going viral

Andrew Jack MARCH 18, 2011

In a crowded room in central London in January last year, I jostled with other reporters for a copy of the General Medical Council's longest awaited and most expensive verdict. The subject of scrutiny was Andrew Wakefield, a British doctor who in 1998 had notoriously claimed a link between autism and MMR, the combined measles, mumps and rubella vaccine, in children.

The judgment was damning. Wakefield had brought the medical profession into disrepute through a series of ethical violations and undisclosed conflicts of interest. His original paper – initially published in the Lancet and since retracted by the medical journal – contained manipulated data that in January this year was labelled "fraudulent" by the British Medical Journal.

But the GMC's ruling was irrelevant to the dozens of parents gathered on the pavement outside. To them, Wakefield was a misunderstood hero, victimised by a cynical scientific and medical establishment that had provided them scant solace for their autistic children. He, by contrast, offered empathy, hope – and an explanation.

This tension has provided yet more fuel for an increasingly fierce, international debate about vaccinations, from swine flu to HPV for cervical cancer, highlighted in four very different new books. Scientist Paul Offit, author of *Deadly Choices*, and Seth Mnookin, journalist and writer of *The Panic Virus*, both offer excellent overviews of the rise of the anti-vaccine movement in recent decades in the US and the UK. After Bill Gates pledged $10bn in 2010 for "the decade of vaccines", Svea Closser, an anthropologist, explores the practical difficulties of polio eradication in *Chasing Polio in Pakistan*. *Vaccine Epidemic*, by contrast, provides a more disturbing and slanted view in a collection of papers co-ordinated by the US-based Center for Personal Rights, advocate for "the right to vaccination choice".

Offit, chief of the division of infectious diseases at the Children's Hospital of Philadelphia, is a rare combination of scientist, doctor, communicator and advocate. In *Deadly Choices*, he powerfully lays out the history of vaccinations and their net benefit to society today. He warns of "a quiet, deadly war" between a growing number of parents who refuse immunisation for their children (the number has doubled in the US since 1991), and doctors who, in response, refuse to even see them in their surgeries for fear of spreading unnecessary infection among other patients. "Caught in the middle are children," Offit writes. "Left vulnerable, they're suffering the diseases of their grandparents."

Resistance to vaccines is nothing new. Offit relates that within half a century of the English doctor Edward Jenner's pioneering use of modern vaccination in 1796 for smallpox – inspired by milkmaids' resistance to the related cowpox ("vaccination" derives from the Latin word for cow) – that the British parliament introduced legislation to make its use compulsory.

But, as with subsequent vaccines, the method to tackle a greatly feared disease quickly became a victim of its own success. The smallpox immunisation ended a scourge that had scarred and killed millions but the threat of that disease soon faded from popular memory. Meanwhile, healthy individuals suffered temporary pain from the vaccine, as well as occasional side effects and even had irrational fears they would turn into cows.

An aggressive anti-smallpox movement was swiftly born in the UK, replete with rallies, pamphlets and even a mock hanging of Jenner's effigy. Many of its arguments – from false claims of harm and conspiracy to the venality of doctors – sound familiar today.

Offit is far from blind to the risks of vaccination. He highlights tragic flaws with certain vaccines, from the insufficiently weakened tuberculosis strains in BCG in the 1920s, to serum-transmitted hepatitis in yellow fever vaccines in the 1940s, and contamination in poorly made polio vaccines in the 1950s, all of which caused unnecessary infection and death.

He might have lingered more on the issue of weak side effect detection: the vaccine hastily administered to protect against a feared swine flu epidemic that failed to materialise in 1976, which itself caused at least 25 deaths and hundreds of cases of Guillain-Barré syndrome; or the claims that an anthrax vaccine given to soldiers in 1991 triggered Gulf war syndrome.

While praising those who constructively analysed such problems and lobbied for necessary improvements, Offit scorns others who have conflated such concerns into a generalised critique of vaccines. He is scathing about celebrity interviewers who have given free rein to doubters in the name of entertainment, from Oprah Winfrey to Larry King.

Nevertheless, the personal stories and passionate hunches of parents seeking causes for their children's ailments come over so much more powerfully and convincingly on television than the arid language of often inarticulate scientists defending vaccines with intellectual arguments and abstract statistics. Offit is a rare exception.

Offit also singles out for criticism doctors who propose delaying a series of childhood vaccines, contradicting official US advice for their rapid use. This approach leaves babies unnecessarily exposed to infection and permits free-riding on the "herd immunity" of others, who have been vaccinated and limit the spread of infection.

But he also points an accusatory finger at trial lawyers and medical "experts" who have won significant legal settlements for people claiming vaccine-related injuries. The Vaccine Injury

Compensation Program, where most such cases are played out in the US, was established in 1986 partly to shield manufacturers from escalating lawsuits that threatened to destroy the entire vaccine industry. Its authority was freshly upheld in the Supreme Court last month. The problem, Offit points out, is that the programme, which has paid out $2bn to 2,500 cases in the past quarter of a century, often gives plaintiffs the benefit of the doubt rather than scientifically scrutinising and validating every anti-vaccine claim. Yet its rulings are seized upon as proof of vaccine-driven harm.

Seth Mnookin covers similar ground and beliefs in *The Panic Virus*, compensating for lesser scientific insight than Offit with greater journalistic skill, to tease out personal stories in a highly readable narrative about the rise in vaccine scepticism. He describes the agonies of families whose unvaccinated children have fallen ill or died, but also the desperation of exhausted parents with autistic children seeking explanations and online support from each other. “We can’t leave our homes and the only time you have to seriously do research or discuss this is the middle of the night,” one mother tells him.

A child’s crying after vaccination, and the subsequent onset of autism or other deeply traumatising developmental problems, which appear to have been on the rise in recent decades, makes the connection of the two events tempting. Yet correlation is not explanation, and the author stresses that visible signs of autism are often emerging spontaneously just at the age when vaccines are administered. Furthermore, as he digs, he finds inconsistencies in parents’ stories, with symptoms in their children already present long before, or emerging long after, jabs took place.

He highlights that while doctors and drug companies may make money from one-off vaccines, there is a lucrative counter-trade consisting of anti-vaccine lawyers, medical expert witnesses and alternative therapists.

This cottage industry offers treatments for children with allegedly vaccine-induced autism that are not subject to the ultra high scientific bar or continued scrutiny that the critics demand for vaccines. One supposed cure involves painful daily injections of Lupron (also used for the chemical castration of sex offenders) costing $70,000 a year.

Mnookin criticises the pseudo-balanced “for” and “against” media coverage of the vaccine debate. He attributes this to a decline in specialist science journalism and a shift from more independent network news programmes towards openly prejudiced cable TV, and an inclination for sensationalism and controversy. Perhaps juries that grant awards to journalists for sensationalist reporting on vaccines later shown to be inaccurate should subsequently withdraw their honours.

Both authors are at times overly reverential towards scientists and occasionally indulge in irrelevant snipes at critics of vaccination. Neither explores the nuances of practice and belief outside the US and the UK. MMR is much less controversial in France, for instance, where by contrast Hepatitis B campaigns were cancelled over fears of a link to multiple sclerosis.

A more systematic collation of the number of lives saved and serious illnesses averted from vaccine-preventable diseases, counterbalanced by the number of serious side effects linked to vaccines, would also have been useful. So would a discussion of current topics such as whether the HPV vaccine, which primarily protects girls against a sexually transmitted virus that triggers cervical cancer, should also be given to boys.

Above all, neither author goes far enough in proposing ways to tackle the current rise in scepticism. But such omissions are minor compared with those in another recent book. The Center for Personal Rights' *Vaccine Epidemic* portrays itself as a balanced collection of essays. Yet the sub-title, *How Corporate Greed, Biased Science, and Coercive Government Threaten Our Human Rights, Our Health, and Our Children* the references to "vaccine injury denialism", and the categorisation of the two sides in the debate as "pro-vaccine" and "pro-choice", hints at what is to come.

Throughout, the phrase "I believe" crops up rather too often, as do anecdotal case histories in chapters written by, among others, lawyers, dieticians, natural healers, osteopaths and nurses. The pivotal argument is the primacy of individual rights. All very well, but what about when they compromise those of others?

Andrew Wakefield himself contributes a chapter and there is also one written by a lawyer in his defence, brushing aside rather than seriously analysing the charges against him. Was ordering painful spinal taps in children against the express orders of other doctors justified, as he pursued clinical investigations while working on an undisclosed patent for an alternative vaccine to MMR? His defence is taken at face value and he is compared to Galileo, Andrei Sakharov and Nelson Mandela.

US academic Svea Closser cites very different reasons for a shortage of vaccinations in *Chasing Polio in Pakistan*. She describes – colourfully if somewhat repetitively and theoretically – the barriers to the elimination of polio in the developing world, a disease all but forgotten in the west. Poverty, poor sanitation and scant resources are all impediments to universal vaccination.

Closser observes that international priorities about vaccination are not shared by top Pakistani government officials, despite the disease being rife. "How long will we have to do this?" asks one polio programme worker. "As long as they keep sending money from abroad," replies another.

Co-opted by her fellow vaccination advocates and implementers, and the undeniable excitement of their vision, Closser is reluctant to call for the abandonment of eradication while citing others who do and point to repeatedly missed targets. She describes examples of forced vaccination among people in the developing world who wanted to refuse the smallpox jab, including some witnessed or supervised by US staff. The ethical trade-off was the world's single successful eradication programme to date, completed in 1980.

The hurdles to polio eradication should not blunt efforts to extend the benefits of existing vaccines as widely and quickly as possible to the poor, when accompanied by necessary scientific scrutiny, safety monitoring and ethical discussion.

In the rich west, meanwhile, one of the biggest challenges remains what Mnookin dubs the "hyper-democratisation of data" on the internet, with free-floating facts recombining "more according to the preferences of intuition than the rules of cognition". What is needed is more people like him and Offit willing to engage the sceptics in a debate that just will not go away.

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