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Why we immunise

Clem Boughton

Monday, 19 May, 2014

IN medicine, often one picture can be more convincing than a thousand words.

How many members of our community, let alone doctors, have seen a 12-year-old boy in a tetanic spasm, with his body arched back? He is in excruciating agony from vicious cramps in all his muscles, but cannot call out because he can't breathe.

In the recent past, with the collaboration of infectious diseases colleagues, colour slides and video recordings of such diseases were made, especially for teaching medical, paramedical and nursing undergraduates, as well as for doctors in practice who may not have seen some of these conditions as undergraduates.

Knowing at the time that new vaccines were being developed that could reduce the prevalence of some or all of these illnesses, these recordings were retained to ensure medical professionals and the community were kept informed, as control of these diseases could lead to complacency in the community.

This complacency is happening now. Added to this is the problem that doctors are graduating without being able to recognise some of these diseases, such as measles, and we have an active anti-immunisation lobby opposing vaccination.

I could try to describe the anguish of a young mother as she watches her 2-month-old baby son, racked with whooping cough, crying pitifully between spasms of coughing, struggling for breath. Or an 8-year-old girl in a similar plight. Or a 75-year-old woman with a racking cough day and night, persisting for weeks — also whooping cough.

The recordings show these images.

We can also show a 3-year-old boy with marked stridor and in severe respiratory distress because of epiglottitis caused by infection with *Haemophilus influenza* type b (Hib), who has to be intubated so he does not die of suffocation.

Work is currently under way at the School of Medicine at Notre Dame University, Sydney, to make these images more widely available so they can be used to teach both medical students and patients about these now mostly rare diseases. Here are some of the images, showing (clockwise from top left) periorbital Hib cellulitis; measles; diphtheria bull neck (enlarged upper cervical glands); and whooping cough.

In the "olden days", before polio vaccines, my colleagues and I have witnessed the apprehension in the faces of parents as a provisional diagnosis of paralytic poliomyelitis in their child is confirmed and the child had to be given artificial respiration in a negative pressure "iron lung". We have seen the desolation of a family when their mother dies of bulbar polio.

This recital could go on with diphtheria and its complications of suffocation, neuropathy, and cardiomyopathy; of measles with measles pneumonia, otitis media, measles encephalitis, and occasionally some years later, subacute sclerosing panencephalitis — all uniformly fatal.

We can show the devastation of congenital rubella in the baby of a young mother who has not been protected by immunisation against rubella, and permanent sequelae of mental impairment, blindness and deafness in teenaged children.

As a result of the effectiveness of immunisation programs, most young parents have not seen any of these conditions once so common in the community, and do not realise how dangerous they are. Most young doctors have not seen most of these diseases either.

It is imperative that they all do see them.

Diseases such as poliomyelitis, measles, mumps and rubella are occurring in many overseas countries. As young adults who have not been immunised as per the childhood schedule begin to travel, they are vulnerable to infection and can bring these pathogens back to this country. The recent outbreaks of measles are worrying examples of what can happen if sectors of our community are not adequately vaccinated. These outbreaks are also happening in the US and New Zealand.

A more dramatic example followed the breakup of the Soviet Union when immunisation lapsed. A diphtheria epidemic started in 1990 in Russia and the newly independent states, affecting all ages. By 1994, there had been more than 100 000 cases with over 3000 deaths — all preventable.

In the decade 1926–1935, 4073 deaths from diphtheria occurred in Australia. It was during that decade that immunisation against diphtheria started. Each decade thereafter case numbers dropped, finally reaching zero in 1986–1990. This table showing the results from immunisation speak for themselves:

DEATHS IN AUSTRALIA FROM COMMON PREVENTABLE DISEASES

1926-1990

	1926-35	1936-45	1946-55	1956-65	1966-75	1976-85	1986-90
DIPHTHERIA	**4073**	2791	624	44	11	2	0
WHOOPING COUGH	2808	**1693**	429	58	24	14	8
TETANUS	879	655	**625**	280	82	31	12
POLIO	430	618	1013	**123**	2	2	0
MEASLES	1102	822	495	210	**177**	62	22
AV. POP. IN MILLIONS	6.6	7.2	8.6	11	13.8	14.9	16.1

FIGURES IN **BOLD** MARK THE DECADE IN WHICH IMMUNISATION STARTED

No medical procedure is completely without risk. In medicine, we calculate the risks versus benefits of any type of treatment.

The risks in immunising are low, the benefits proven. The risks inherent in not immunising are unacceptable.

Professor Clem Boughton is Emeritus Professor at the University of NSW and was formerly chairman and senior physician at the Division of Infectious Diseases at Prince Henry Hospital, Sydney.

ACKNOWLEDGEMENTS: The images published with this article were taken from a public education video titled "Protect your baby for life", which briefly profiled particular infectious diseases so parents were better informed about immunising their children. The video was made possible by Professor Boughton and his colleagues from the Department of Infectious Diseases, Prince Henry and Prince of Wales Hospitals and the University of NSW. The images used here were prepared by the Sydney School of Medicine, University of Notre Dame Australia.

The table was provided by Dr Brian Feery, a distinguished scientist who made major contributions to immunisation in Australia.