

## Max Klein: a great man and a great paediatrician



Max Klein (1941–2015) died suddenly on 27 January 2015 while riding his bicycle in the beautiful surroundings of Stellenbosch near Cape

Town. Professor Klein made a large contribution to the development of paediatric critical care and paediatric pulmonology in South Africa and beyond.

Max was born in the isolated central Karoo village of Calvinia where the lonely surroundings and stark landscape he experienced in his early years influenced his great strength of character. This may also account in part for his renowned powers of observation and his ability to improvise and solve problems in ingenious ways.

At an early stage of his life, Max was sent to boarding school in Cape Town. He had very few happy memories of his school career. After leaving school, he studied medicine at the University of Cape Town and early on began to show the first signs of his future promise. While still a medical student, he was invited to work in the heart research laboratory of the great heart transplant pioneer Chris Barnard. This was an experience that he greatly enjoyed, and he always took great pride in the fact that his first published research paper was coauthored with Chris Barnard.

Early in his career (1966–1969) he was appointed as a Wellcome Research Fellow in the first South African neonatal intensive care unit (ICU) at Groote Schuur Hospital, where he learnt mechanical ventilation and played a role in elucidating the mechanism of grunting respiration, which contributed to the development of CPAP for the treatment of respiratory distress syndrome. From 1969 to 1972, he was a paediatric registrar at Red Cross War Memorial Children's Hospital (RCH) in Cape Town. Following completion of his paediatric training, he transferred to an adult respiratory unit at Stellenbosch University. Here under the supervision of Attie de Kock, whom he greatly admired, Max acquired an excellent grounding in respiratory physiology and mechanics, learnt tracheostomy and bronchoscopy, and was subsequently appointed as consultant. In 1972, he was awarded a Lilly International Fellowship as a fellow to the Cardiovascular Research Unit and the Department of Paediatrics at the University of California Medical Center in San Francisco, USA. Here he worked with two of the greats of paediatric pulmonology at the time, Julius Comroe and Jay Nadel. Max left a lasting impression as one of the finest fellows to have worked in that unit.

In 1974, he returned to South Africa to establish the paediatric respiratory service at RCH at the University of Cape Town and the first comprehensive paediatric ICU, which looked after children of all ethnicities. He headed the unit for 25 years, spearheading its development and growth. During this time, he trained and mentored many of the now leading paediatric intensivists in South Africa. As recognition of his contribution, he was presented with the gold medal award by the World Federation of Pediatric Intensive and Critical Care Societies at the Third World Congress in 2000. As an inaugural Gold Medallist, he was recognised as an international pioneer who established the speciality



through clinical and academic excellence, dedication to patients and families and leadership to colleagues.

Despite working in a highly technological environment, he remained very aware of the enormous problem and burden of childhood respiratory illness in primary care. He did seminal work on the role of vitamin A in measles-associated pneumonia, work that was published in the *New England Journal of Medicine*. This study, a randomised trial of vitamin A in measles pneumonia, was done in ICU, but had large implications for primary care, influencing the policy to provide routine prophylactic vitamin A to young children. His work on the use of the modified nasopharyngeal airway tubes for upper airways obstruction and use of nasal cannulas for oxygen administration was similarly innovative and influential. He established a home tracheostomy programme, which enabled tracheostomised children to be cared for at home, even in the poorest of circumstances. It was a visionary and brave project, establishing home care for children living in shacks where there was often neither running water nor electricity and where many mothers were illiterate. In an analysis of the success of this programme, he found the morbidity and mortality to be substantially lower in children cared for at home than those who were in hospital and his conclusions "Empowerment is the most important principal in rehabilitation. Mother is the most sophisticated technology available in the world; love is of more consequence to the child than physical comfort. Intelligence is not related to literacy and best care is not necessarily more costly care" speak for themselves and for his character.

Professor Klein was a master clinician and legendary as a teacher. He was highly respected for his clinical teaching and his rigorous attention to clinical signs. He devised a clinical croup score to identify the severity of upper airway obstruction and appropriate management; this has become part of routine practice, substantially reducing morbidity and mortality in this common illness. He was a unique thinker with a sharp mind and formidable breadth of knowledge.

But perhaps his most remarkable quality was his honesty, strength of character and commitment to his principals. In the

days of apartheid when separate racially designated health facilities were the norm, he staunchly opposed such injustice. Even after the establishment of democracy in South Africa, he continued to fight for equity in healthcare, remaining an outspoken critic of injustice and discrimination and a voice of uncompromising integrity. In 2010, he published a letter in the local newspaper criticising conditions at the RCH and the provincial government's 2010 cost-cutting healthcare plan as racism in the public health sector and demanding accountability. He wrote, "At the Children's Hospital the poor are still treated in many ways as they were under Apartheid—sometimes even worse." And concludes that "who would have dared conceive something like 2010 if it affected the articulate section of the electorate instead of the poor and disadvantaged who are so pacified by hardship that they are grateful for crumbs? The Western Cape health plan is not fit for humans, only for the wash closet."

Although Max retired from the RCH in 2007, he continued to be involved in teaching and training registrars in paediatric pulmonology both in Cape Town and in Pretoria. He took a special delight in the progress of his students coming from other countries in Africa. His renowned powers of observation and description remained undiminished. His final publication, a letter to the editor of the *New England Journal of Medicine* on 'Fundamentals of lung auscultation', appeared in May 2014.

Max leaves an enormous legacy behind, many doctors influenced by his teaching and example and many children, many

now adults who are alive and well today thanks to his special care and to his genius.

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**Contributors** HJZ and EGW wrote this together.

**Competing interests** None.

**Provenance and peer review** Not commissioned; internally peer reviewed.



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**To cite** Zar HJ, Weinberg EG. *Thorax* 2015;**70**:396–397.

Received 16 February 2015

Accepted 17 February 2015

*Thorax* 2015;**70**:396–397. doi:10.1136/thoraxjnl-2015-206947