



PRACTICE REVIEW

The Allergy Clinic: 50 years

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Establishment and development

There has been an allergy clinic at Red Cross Children's Hospital from the day that the doors opened 50 years ago. This may not appear surprising given the prevalence of allergic conditions in children, but even today few major teaching hospitals in South Africa have paediatric allergy clinics – this despite the recent International Study of Asthma and Allergies in Children (ISAAC) which ranked South Africa twelfth in prevalence out of the 56 countries surveyed.¹

Dr Lorn Shore, who had trained in allergy at St Mary's Hospital in London, was instrumental in establishing the clinic. He developed an extensive knowledge of local allergens and developed and adapted skin-prick test solutions for these allergens. He collaborated closely with scientists at the Bencard Allergy Unit in the UK producing locally relevant pollen allergens. He established that few, if any, indigenous tree and weed pollens were allergenic and that allergenic pollens were largely derived from imported trees such as oaks and planes. Invasive species in the Western Cape such as the Port Jackson and pine trees were non-allergenic.

Shore was a most astute clinician. At several postgraduate lectures he described the typical progression of allergic conditions from atopic eczema to asthma in infants and young children which he called 'standing in the queue for asthma'. This phenomenon is now known as the 'atopic march' and is the subject of worldwide interest and research. He was a pioneer in the field of sublingual immunotherapy in children, which he used with great success. There has been intense international interest and research recently into this method of immunotherapy now known as SLIT.

Shore was a personal friend of Roger Altounyan, the discoverer of cromoglycate, the first preventative medication used in asthma treatment. Cromoglycate had an enormous impact on asthma research leading to the recognition of the inflammatory nature of the condition. Shore took part in the first studies of the use of cromoglycate in children and was later to be involved in the first international studies on the

use of the pioneer inhaled corticosteroid, beclomethasone, in children.

Shore observed that beta₂-agonists, notably fenoterol, could be absorbed from the buccal mucous membrane in children, resulting in effective bronchodilatation. He developed a simple clinical test to determine wheezing in infants and young children, which he called the 'squeeze test'. This test involved a slight squeeze of the infant's chest while auscultating during expiration.

In 1971 the first full-time consultant was appointed to the Allergy Clinic when Eugene Weinberg returned from a Fellowship in Paediatric Allergy in the USA. Allergy clinical services and research expanded rapidly and the clinic soon gained national and international recognition. Initial research was devoted to aerobiological studies of allergenic pollens and fungi in Cape Town, which continues to this day under the supervision of Dilys Berman. Sampling techniques established the major importance of house-dust mites as indoor allergens in Cape Town. Early studies on the use of a wide-range of important drugs used in allergy and asthma treatment were conducted. Among these were non-sedating antihistamines, inhaled corticosteroids, cromolyns, beta-agonists, theophyllines and anticholinergics. Reports of the findings of these studies appeared in national and international peer-reviewed publications.

Weinberg's clinical research interests were directed at developing appropriate diagnostic and treatment methods for children with asthma and allergies. The recognition that few Xhosa children were attending the Allergy Clinic in the early years despite forming a significant part of Cape Town's population, led to the prevalence studies that have been a feature of research in this unit. Urban-rural comparative studies on asthma prevalence in Xhosa children² have led to important findings regarding factors responsible for the rapid increase in asthma prevalence in children.

In 2001 the Allergy Clinic moved to superb premises in the new specialist outpatients building. For the first time consultants could work in individual offices and an excellent treatment room, patient waiting area, education room, laboratory and nurses office became available.

Cas Motala was appointed as the second fulltime consultant in the clinic in 1988 and took over as head of the clinic when Eugene Weinberg retired in 2004.



Allergy training and research

The Allergy Clinic at Red Cross Children's Hospital was the first of its kind in southern Africa to provide postgraduate training in allergy to senior paediatric registrars – to date, seventeen paediatric registrars have been trained. This training post in allergy is highly sought after in view of the importance of allergic conditions in paediatric practice, particularly in the diagnosis and management of asthma, allergic rhinitis, food allergies, drug allergies, atopic dermatitis and chronic urticaria. The clinic also provides training in venom immunotherapy and more unusual allergic and immunological diseases including mastocytosis and hereditary angioedema.

Special attention is focused on history taking, aerobiology, allergy diagnostic tests (skin-prick tests, *in vitro* allergy tests, lung function tests, food challenges) and the principles of management in allergy (environmental control, elimination diets, pharmacotherapy, immunotherapy, patient education). Specific training is also provided for evaluation and management of anaphylaxis.

In addition to 'clinical' training, the registrars learn research methodology (including writing grant proposals, seeking ethical approval, designing studies, conducting research, statistical analysis, presentation of data at congresses and writing papers). The projects are either stand-alone studies or undertaken in collaboration with other units at the hospital e.g. Paediatric Pulmonology and Dietetics departments, Allergology Unit (Groote Schuur Hospital) and the UCT Lung Institute. Many projects have been successfully completed and published either as theses or papers.

One of the notable projects was the development and evaluation of low-cost spacer devices for inhaled asthma therapy.^{3,4} The impact of these studies has enabled the use of inhaled therapy for asthmatic children and adults in poorly resourced areas. Spacer devices are now widely used in under-resourced areas and have become the standard of care for delivery of inhaled asthma medicines in many parts of South Africa. Recommendations for making and use of this device appear in the South African Guideline for Treatment of Childhood Asthma,⁵ in the National Guidelines of Integrated Management of Childhood Illness (IMCI) and have been included in international guidelines for asthma treatment including those produced by the World Health Organisation (WHO) and the Global Initiative for Asthma (GINA).

Other key studies conducted at the clinic include: (i) the role of *Staphylococcus aureus* in eczema; (ii) genetic and environmental influences on cord blood serum IgE and an atopic sensitisation in infancy; (iii) the requirements for

hydration in children with acute asthma; (iv) continuous monitoring of aerobiology data in the Western Cape; (v) strategies for treatment of house-dust mite allergy; (vi) cytokine profiles in Xhosa children with atopic asthma; (vii) prevalence of latex allergy in health care workers; and (viii) autoantibodies in children with chronic urticaria.

Future role

The estimated prevalence of allergy and asthma in the paediatric population of South Africa is between 10% and 15% but is expected to rise with increasing urbanisation.⁶ Advances in the understanding, diagnosis, prevention and treatment of allergy are increasing exponentially. Therefore, it is very likely that South Africa will need a greater work-force with expertise in allergy to manage these disorders. Opportunities for allergy training in South Africa remain limited and allergy is still not recognised as a specialty. In line with the current emphasis on a 'primary health care approach' in our country, it is essential to integrate primary and secondary/tertiary care for allergy and asthma.

To meet some of these challenges, we have identified five strategic and key issues to shape the future of the clinic and the discipline of allergy in sub-Saharan Africa: (i) promoting education and information of allergy and asthma at undergraduate and post graduate levels; (ii) strengthening links with primary and secondary level care facilities and providing outreach support for management of allergy and asthma; (iii) fostering and dissemination of locally relevant allergy research; (iv) building strategic alliances with other institutions (national and continental departments who share a common interest (e.g. pulmonology, dermatology and otolaryngology) in the areas of education, training and research; and (v) motivation for recognition of paediatric allergy as a subspecialty by the Health Professions Council of South Africa.

References

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