

health and professional bodies, which must have a strong commitment to achieving the goals.

Measurement against these standards requires an audit tool that is easy to teach and to use. This tool should be usable for the assessment of the overall status of health practice and should not focus too narrowly on individual competence. The assessment should lead to rapid feedback, innovation, and reassessment. (Many data that are collected by clinicians are meaningless to them because the data are analysed centrally and not fed back to them to inform their actions).

Finding problems is easy; it is much more difficult to introduce strategies that lead to sustained improvements. Most initiatives have concentrated on increasing individuals' skills and knowledge, commonly in one disease or syndrome. The IMCI training package, which is strongly supported in many developing countries, recognises the need for a holistic approach to the management of sick children but the wider issues of problem-solving by teams and their commitment have not been addressed. The manual for inpatient care at first-referral hospitals³ could be expanded to include features of organisation and team-building that have been found to be deficient in Nolan and colleagues' seven-countries study.

Training for the clinical team at their own workplace would address many of these features of care delivery and would give the local team a chance to collectively review and change their own activities. Conducting training "on site" also gives trainers an opportunity to see whether what is being taught is possible in practice. Modest investments of training funds in appropriate equipment may make change possible and convert recommendations into reality. Experience with teaching triage and emergency care at district hospitals to the entire care team using the ETAT (Emergency Triage Assessment and Treatment) programme has been rewarding in this respect.³

In developing countries specialists often visit district hospitals to review clinical cases. Their function could be expanded to include audit, organisational innovations, and teaching. They could provide some of the supervision needed to sustain and encourage change. In a collaboration between the University of Pretoria and the Health Authority in Mpumalanga province of South Africa, lead paediatricians from the university are asked to help in assessing and improving quality of care throughout the province.⁴

In Peru a successful stepwise programme of accreditation was introduced into 2500 health centres in a short time. Its strength was the strong support received from the Ministry of Health, incorporation of local communities' perceptions of quality care, and involvement of the local health staff in self-audit and strategies for change. This programme cost only US\$2 million/year but it is too soon to judge its sustainability.⁵ In 1997 Zambia embarked on a National Hospital Accreditation Programme that uses a star system of accreditation. Implementation is not complete but other countries could learn from their experience.⁶

Without continuing stimulation and encouragement there will be no progress ("No drive, no change"). The drive for improvement in emergency care in a health unit needs to come externally from government (eg, with an accreditation scheme, provision of free drugs for emergencies) and internally from hospital management and senior clinicians. These efforts need international support.

Whatever tools, assessments, and training are put in place there is no getting away from the fact that many health workers are demoralised by overwork and poor pay.

These are serious issues that directly affect the quality of health care. In a recent report Voluntary Services Organisation reiterated that the health services of developing countries are chronically underfunded.⁷ How to resolve this problem is not easy. People directly involved in clinical care need to use energy, initiative, and innovation for improvement, and politicians and economists need to be doing the same to improve what underpins the whole health service.

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Management of peanut and nut allergies

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In the USA, up to 7·6 cases of food anaphylaxis occur per 100 000 person-years,¹ an incidence approximating to about 29 000 episodes of anaphylaxis to food, which causes 150 deaths, each year.¹ Intramuscular epinephrine reduces the risk of death due to food anaphylaxis.² As Pamela Ewan and A T Clark point out in today's *Lancet*, hypersensitivity to peanuts is common. It affects up to 1·9% of children³ and 0·5% of adults,⁴ and its prevalence is increasing.⁵ It is commonly associated with hypersensitivity to tree nuts and some seeds.³ The protein Ara h 1 contains the major IgE-binding epitopes in peanut.⁶ The high level of concordance in identical twins⁷ and the variable prevalence of peanut allergy in different regions of South-East Asia^{3,8} suggest that genetic factors are important. Peanut or peanut products or oils are widely used in restaurant and manufactured foods and are increasingly found as a contaminant in "non-peanut" food products, so consumers are often unaware of their potential exposure to this allergen.

Oral challenge is the most reliable method of identifying individuals with nut allergy.⁹ The need for oral challenge can be reduced by measurement of IgE antibodies by skin-prick tests¹⁰ or serum immunoassays,¹¹ which can identify a proportion of patients who will react on challenge. However, the size of the skin-test reaction and the concentration of IgE antibodies do not predict the clinical severity of allergic reactions.⁵

Ewan and Clark describe the effectiveness of a management protocol for patients with nut allergies. The

protocol was based on education on avoiding the allergen and on three treatment options—antihistamine for mild reactions, antihistamine plus inhaled epinephrine (Medihaler Epi) for moderate reactions, and antihistamines, epinephrine inhaler, and epinephrine auto-injector (Epipen) for severe reactions. Patients were allocated these treatment options according to the severity of index reactions. An epinephrine auto-injector was given only to patients with moderate or severe index reactions. The investigators found that 15% of patients reported a further reaction during the 2-year study; 85% of these were mild. Three patients had a severe follow-up reaction. Two had had a severe index reaction and responded to an epinephrine injection. The third patient, who had had a mild index reaction had only inhaled epinephrine available; inhalation was not effective but the patient responded to intramuscular epinephrine.

What are some of the issues arising from the study? A major concern is the diagnostic criteria used for inclusion in the study. History alone has an error rate of up to 13% in adults, even in specialists' hands,⁵ and the degrees of skin-test reactivity¹¹ on which the diagnosis was made were not defined. In addition, spontaneous remission of peanut allergy occurs in up to 20% of children.¹² These factors, together with the availability of follow-up data on only 567 of the initial cohort of 721 patients may account for the low reaction rate of 15% during the follow-up. Other studies of nut allergies have indicated follow-up reaction rates of up to 50% over 1 year,⁵ 55% over 6 years,¹³ and, more recently, 58% over 5 years.¹⁴

The next issue relates to the allocation of treatment protocols on the basis of the severity of index reactions. Studies of the natural history of nut allergies have shown that 38%⁵ and 44%¹⁴ of patients with mild index reactions have severe and potentially life-threatening follow-up reactions. Thus, restricting the availability of intramuscular epinephrine on the basis of the severity of index reactions could be unwise.

Finally, what is the place of inhaled epinephrine in the management of patients at risk of food anaphylaxis? Simons and colleagues have pointed out that intramuscular (but not subcutaneous or inhaled) epinephrine is valuable for promptly producing effective plasma epinephrine concentrations.^{15,16} They also showed that most at-risk children refused the large number of inhalations of epinephrine necessary for rapidly inducing effective plasma concentrations.¹⁶ The Project Team of the Resuscitation Council (UK) has highlighted the place of intramuscular epinephrine in the management of anaphylaxis.¹⁷

In summary, studies reported since Ewan and Clark's protocol was introduced and the above reservations suggest that it is premature to adopt the protocol in its current form.

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We all make mistakes: tell us yours

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Error has always been a part of medicine, and doctors have usually chosen to learn from their mistakes privately. But that protected clinical culture is changing. Transparency and accountability, driven by the occasional scandal, have forced doctors to admit the obvious—namely, that practice can never be perfect. Trust involves risk and risk inevitably means that there will be instances when even the most reliable systems go wrong.

Rather than recoiling from error, doctors should embrace it.¹ I asked members of *The Lancet's* International Advisory Board to give us examples of mistakes from which they had learned a lesson. Every doctor will have such a story to tell. But this issue has larger implications. As Gostin pointed out,²

“Quality assurance in the health care system is an important public health objective. A public health approach requires health care professionals and organisations to participate in a co-ordinated effort to understand the nature and extent of medically induced injuries through a sophisticated surveillance system and to establish systematic prevention strategies.”

Before such strategies can be put in place, the documentation of error must be encouraged. *The Lancet* invites readers to share their mistakes with us. Our new column, “The uses of error”, begins with Robert Beaglehole's reflections about, among other encounters, his meeting with a confused elderly man.

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