Everyone wants safe medicine. The traditional approach to adverse events has developed within a culture of blaming the individual practitioner. Such an approach is likely to be damaging to individuals and possibly counterproductive by creating an atmosphere of defensiveness and denial. Industries such as airlines have developed an alternative culture using a systems approach. This approach concentrates on assessing and improving the systems of working rather than blaming an individual’s performance. Frameworks have been developed for applying this approach to investigating and avoiding medical accidents. These form the basis of a check-list for acupuncture practice that is presented here, and may be useful for individuals and organisations who are concerned to reduce the risk of adverse events.

**Keywords**
Acupuncture, safety, risk assessment.
events are regarded as underlying faults in a system that allowed an error to occur in the first place and then to remain undetected. Accidents should be investigated using protocols that concentrate on organisational approaches. The aim is to produce reliable systems rather than reliable individuals.

Medicine has not made this fundamental shift in its approach to medical safety. The need for it was identified in the US in 1998, and the first steps were reported. In the UK, the drive towards error prevention accelerated in response to the inquiry into deaths from cardiac surgery at the Bristol Royal Infirmary. A special issue of the BMJ on safety (18 March 2000) carried articles that promoted candidness in reporting adverse events by making reporting both blame-free and voluntary, and switching the focus from persons to systems in the search for causes. The approach should include investigating the episode frankly, and disseminating the lessons into reliable systems throughout the health service. In addition, both the practitioner who has made the error and the patient and family who have suffered should be supported.

We now have available a considerable amount of information on the risks of acupuncture, from prospective surveys, reviews of the literature, and various other publications, as well as clinical experience. What we need to do is to apply this information and experience in a systematic way. A general framework for doing this was developed by Vincent from the systems approach to clinical mishaps. Its headings forms an indispensable basis for a systems approach to acupuncture, which is presented here. It is intended to be applied as a kind of check-list with the potential of reducing the risk of avoidable adverse events occurring in relation to acupuncture. Some of the items will be the responsibility of individual practitioners, and others may require changes in organisations. This list is not intended or claimed to be a comprehensive list of all precautions and contraindications of acupuncture.

**Systematic approach**

**A Institutional context**

1. **Regulation**

   (as for medicine as a whole) lacks the organisational approach for dealing with adverse events in a positive and systematic manner. An underlying culture of safety is required to encourage reliable and routine procedures for reporting, investigating, and applying the lessons of reported events.

**Learning and continuing professional development**

2. Many acupuncture practitioners are isolated, so resources like regional and national meetings, professional journals and professionally dedicated websites are important ways of maintaining the motivation for safe practice.

**B Organisational and management factors**

**Practice structure**

3. Practising acupuncture while distracted by other commitments such as ‘on call’ constitutes a risk of forgetting the patient who is having treatment.

4. Local practice protocols may not be drawn up to consider the needs of acupuncture practice.

**C Work environment**

**Workload**

5. Workload pressures on NHS staff are considerable: this increases the temptation to take short-cuts on procedures, and reduces the opportunity to reflect on practice and improve systems of practice.

**Place of practice**

6. Acupuncture is frequently practised outside the regular work environment (eg in private premises) where the facilities such as equipment and staff support may be less than ideal, and where there may be less pressure to apply rigorous systems of practice. The local authority regulates the premises of non-medical practitioners only.

7. Practising acupuncture in the patient’s home may present additional risks eg a contaminated environment, and lack of equipment.

**Equipment**

8. Particular facilities are necessary for performing acupuncture, such as bells for patients left in side-rooms during treatment, and facilities for safe needle disposal and for hand washing.

9. Some electroacupuncture apparatus does not meet quality standards, and could be dangerous under certain circumstances.

10. A firm medical couch is important for
proper examination, eg to allow accurate delineation of the borders of the pleura.

D Team factors
Isolation
11. Acupuncturists are often isolated in practice: supervision in the early years, as well as continuous feedback and discussion with peers is often impossible: acupuncturists have often learned ‘on the job’, ie from their own mistakes.
12. The attitude of doctors and other work colleagues towards an acupuncturist as an ‘outsider’ may inhibit the establishment of proper routines and protocols.

E Individual (staff) factors
Knowledge and skills
13. Acupuncture practitioners need specialised anatomical knowledge. The anatomy that health professionals learn may not focus on the most relevant areas, although it is clearly an advantage when undertaking further (eg acupuncture) training.
14. The manner in which textbooks of acupuncture cover safety is highly variable and has not been systematically assessed for accuracy and completeness.
15. Practitioners of acupuncture also need to know enough conventional medicine to allow them to understand the risks involved, to reduce these risks, to identify adverse events and to manage them correctly.

Motivation and attitude
16. Practitioners of acupuncture may be individualists who value their independence and may not willingly accept the disciplines of protocols.

Mental health
17. Acupuncture may be more intellectually and emotionally challenging than other forms of medical practice in certain respects, for example the type of patient and condition, the novelty of the technique, and the prominent use of touch.

Physical health
18. There is some evidence that acupuncturists who are high risk carriers of hepatitis B (ie E antigen positive) can infect their patients even though their skin is not breached. 16
19. Wounds in the practitioner should be covered.

F Task Factors
Clarity of task
20. Acupuncture is simple and safe in some sites for some conditions; this may produce complacency which is dangerous, since under some circumstances acupuncture can be complex and risky.
21. Very little is known about whether there is any correlation between treatment factors (such as the amount of stimulation) and the incidence of adverse events.
22. The need for disinfection of the skin is still debated.
23. Fainting during treatment is a common occurrence that can be almost completely avoided by treating the patient supine – though some conditions are difficult or impossible to treat in this position.

Availability of protocols
24. There are many different approaches to needling. A new technique can be readily learned and applied, but may need a fresh consideration of its safety aspects (eg deep needling).
25. Protocols for contraindications and precautions to acupuncture vary considerably and are rarely written (one such list has been standardised by the Acupuncture Association of Chartered Physiotherapists, but is not recognised by other organisations).
26. A simple protocol to reduce the risk of needles being left in patients is: “count the needles in, and count the needles out.”
27. Protocols should cover common risk areas including: pleura, heart, major nerves and blood vessels, central nervous system and auricular cartilage.

Specialised techniques
28. Electrical stimulation should be applied after taking account of additional cautions; eg avoiding strong stimulation within the sensing zone of a demand pacemaker, and avoiding direct stimulation of the carotid sinus or vagus nerve.
29. Indwelling needles carry a considerably increased risk of local infection, and are contraindicated in patients with valvular heart disease.
30. The inherent risks of moxibustion must be recognised by anyone who uses it, and safe systems established.
Clinical trials
31. The rates of adverse events may be different (eg higher) in clinical trials than in normal clinical practice.25

G Patient characteristics
Physical condition
32. Thin chest walls, eg from chronic obstructive pulmonary disease or weight loss.
33. Individual predisposition, eg to bleeding.
34. Pregnancy: treatment of nausea in early pregnancy using PC6 is almost certainly safe,26 and for other indications in pregnancy an appropriate risk benefit assessment should be made in partnership with the patient.

Medical condition
35. Conditions that make the patient vulnerable to infection, eg valvular heart disease, metal prosthesis.
36. Risk factors for infection include immunosuppression, which can be either drug-induced or secondary to medical condition. In particular, indwelling needles should be avoided or used with caution.
37. Anticoagulant therapy is a risk factor for needling near major blood vessels, within enclosed fascial compartments or near joint spaces. Some reports suggest that non-steroidal anti-inflammatory drugs and salicylates also increase the risk of bleeding after acupuncture.
38. The presence of a cardiac pace-maker constitutes a risk for electroacupuncture.

Personality
39. Acupuncture may be regarded as a dramatic treatment, and not suitable for all patients.11
40. Serious adverse events have occurred from self-treatment,27 and from exhibitionist treatment.28 Individuals who are likely to put themselves at risk may be difficult to identify in advance, but practitioners need to be aware that these events have occurred.

Discussion
The systems approach presented above can be used as a check-list firstly by individual practitioners in their own performance, and secondly within their work environment with their partners and other colleagues, whether in primary or secondary care. Thirdly, there are changes that only institutions can make, particularly in encouraging reliable procedures for reporting adverse events, in helping to investigate them sympathetically, and in applying the lessons learnt. These require a shift to a culture of safety which may be difficult to achieve in the face of increasingly litigious attitudes of society towards medical errors.29 Recent cases include imprisonment for manslaughter for a doctor who injected vincristine intrathecally,30 even though the external inquiry stated that ‘evidence presented to this inquiry suggests that the adverse incident ... was not caused by one or even several human errors but by a far more complex amalgam of human, organisational, technical and social interactions ...’.31 While the law has a clear place in cases of gross negligence, the profession is likely to respond to this increasingly litigious attitude by continuing its own culture of blame. In addition, it is increasingly likely to practise ‘defensive medicine’ which may be regarded as a denial of true professional practice. This highlights the competing demands of patients being entitled to high standards, and healthcare practitioners offering a truly professional approach.

While acupuncture in the hands of trained practitioners is safe,32 we know that novel and significant events do occur in normal practice.11 This issue of the journal includes a case report of pneumothorax caused by a well trained practitioner in Germany. Very serious events are not unknown: one former member of the British Medical Acupuncture Society stopped practising acupuncture after causing the death of a patient by pneumothorax (anonymous personal communication). The acupuncture profession is not good at dealing with its adverse events. In 1987 there was an attempt to encourage routine reporting within the British Medical Acupuncture Society. A senior member reported a seizure that had occurred during acupuncture treatment, and urged other members of the society to report complications of acupuncture.33 In the same issue of the journal, the editor promised a ‘new section devoted to complications and side effects’, and hoped to initiate a ‘yellow card’ system for reporting side effects.34 There was no support for
these initiatives from members, and so they lapsed. The acupuncture profession is by no means unique: a similar lack of interest in reporting has occurred with the Yellow Card system for adverse reactions to drugs.35

It is time to consider again how to improve the safety of acupuncture at the organisational level. Now, while the structures that are needed for registration are being set up, seems an ideal moment.

Conclusion
A systems approach to the safe practice of acupuncture is possible, and involves making a careful and systematic assessment of every aspect of practice in a hierarchy that extends from the professional institution to factors in clinical practice and the patient. Accidents can be investigated with less concentration on punishment and greater aim of improving the systems of work in order to prevent future events. An appropriate body should be established to achieve this.

Box
The traditional approach to safety of medical practice has emphasized the failure of individual practitioners. This approach may be emotionally damaging and possibly counterproductive. A preferable approach is to regard accidents as failures in the system and greater aim of improving the systems of work.

Reference List
Towards greater safety in acupuncture practice - a systems approach

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