animal models of pain. Nor do we know how long afferent blockade must be continued during and after surgery to ensure that neuronal plasticity is prevented and not simply delayed. These considerations are important now that modern clinical anaesthesia uses low concentrations of volatile anaesthetics which abolish consciousness but may still allow sensitisation of the cord unless nociceptive input is otherwise reduced—a concern voiced 80 years ago by Crile.[16] Perhaps general anaesthesia should be combined with pre-emptive local and regional anaesthetic blocks more often.

As is so often the case, more work needs to be done. Some encouraging laboratory and clinical studies suggest that pre-emptive analgesia does reduce pain after surgery, but the optimum choices of agents and timing required for a clinically useful effect remain to be established. The underlying mechanisms may also be relevant to some chronic neuropathic pain states.

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Selective decontamination of the gut

Does not affect survival in intensive care units

Nosocomial infections are commonest in intensive care units, where prevalences of 18-36% have been reported.[1] Rates of colonisation with potentially pathogenic micro-organisms are even higher, particularly in ventilated patients, and may exceed 80% in those staying in the intensive care unit for five or more days.

Potentially pathogenic micro-organisms are usually derived from the gastrointestinal tract and are mostly Gram negative bacilli, such as *Enterobacteriacae* and *Pseudomonas* spp, but they also include yeasts, especially *Candida* spp. Patients requiring intensive care are at greater risk of nosocomial infection not only because their illness is severe but also because many therapeutic interventions actively promote colonisation or disable host defences. Various forms of instrumentation, including ventilation, inhibit the usual means of clearing organisms from normally sterile epithelial surfaces. Importantly, prophylaxis against stress ulcers with H_2 antagonists and antacids has been implicated in abnormal bacterial overgrowth in the stomach.[2] Similarly, as the gut requires luminal nutritional support to prevent mucosal atrophy and subsequent bacterial translocation the use of parenteral rather than enteral nutrition may also increase the likelihood of infection. Vascular access may increase the risk of infection but cannulas are not usually colonised by organisms originating in the gut.

In the past decade attention has turned towards selective decontamination of the gut in an attempt to reduce these nosocomial infections. Various combinations of topical and non-absorbable antimicrobial agents have been used to reduce relative numbers of Gram negative bacilli and yeasts cultured from faeces and the oropharynx while maintaining normal anaerobic flora. Most regimens have included non-absorbable antibacterial and antifungal agents administered into the gastrointestinal tract by nasogastric tube as well as a topical preparation to the nasopharynx and hypopharynx. A variable period of intravenous antimicrobial prophylaxis (usually with cefotaxime) has also been used.

Selective decontamination of the gut was first performed in immunocompromised patients outside the intensive care unit and resulted in significant reductions in the rates of colonisation and infection.[3] The first studies of patients in intensive care units began with investigations of multiply injured patients in the Netherlands, and these showed significantly fewer patients colonised with potentially pathogenic micro-organisms, particularly of the upper respiratory tract.[4] Fewer infections occurred but without any effect on survival. Two recent prospective, double blind randomised trials have confirmed the absence of any improvement in overall mortality in the populations studied in intensive care units.[5,6] An earlier prospective study using a post hoc analysis, however, showed that selective decontamination of the gut was associated with a significant fall in mortality when patients with acute trauma were considered separately.[7] While use of mortality as the sole criterion of therapeutic efficacy in intensive care units is open to debate, these studies have all failed to show any cost benefit; in one, selective decontamination of the gut doubled the total cost of antimicrobial drugs.[5] Fears of the emergence of drug resistance in colonising bacteria in patients receiving selective decontamination of the gut have not been realised.

The lack of clearly defined benefit from selective decontamination of the gut in a heterogeneous population of patients led to a European consensus conference on the topic.[8] On the basis of published work (including the two recent large studies[5,6]) the conference did not recommend the use of selective decontamination of the gut in any particular group of patients and, unsurprisingly, went on to suggest that further prospective controlled multicentre studies of sufficient statistical power should be done.

In our view, colonisation with potentially pathogenic micro-organisms can best be prevented by emphasising standard microbiological good practice. Poor hand hygiene by medical staff is particularly refractory to change[9] and should be subject to constant observation and correction. Other simple measures include the avoidance of H_2 antagonists and antacids, regular changes of vascular access, and the use of enteral nutrition whenever possible. Obtaining regular and appropriate specimens for culture from potential sites

of infection remains vital, as does avoiding unnecessary prescription of antibiotics unless there are clinical signs of infection.[10] Until there is good evidence that attempts to modify the ecology of the gastrointestinal tract are beneficial, attention to accepted standards and the further development of a multidisciplinary approach to infection in intensive care units are likely to reap greater rewards.

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The language of health

A clinical language underlies the NHS information strategy

The launch of the NHS information management and technology strategy in December[1] may not have been high on the agenda of most practising doctors. The strategy's objective is to achieve a patient record that will be accessible wherever a patient is treated and to build on that record an entire clinical information system, so its success depends on the support of doctors. The medical profession is supporting one of the main foundations of the strategy—the clinical terms project—which in the longer term may fundamentally change the way in which doctors work.

Central to the overall strategy is the ability to communicate information about individual patients and their care throughout the NHS. Ultimately each citizen will have a unique NHS number, and nationally linked population registers will ensure both that information needs to be entered only once and that it is available to any clinician caring for the patient. Electronic messages will replace many current paper transactions, and there will be a national standard for the structure and content of such messages.[2] A prerequisite for such a standard is a shared language, a list of common terms capable of being coded and thus transmitted electronically. In the NHS this will be a thesaurus of those clinical terms that doctors and other health professionals currently use in their medical records.

The clinical terms project was started last year to develop a set of terms comprehensive enough to cover anything that a clinician might need to write in a patient's record. Once this thesaurus has been devised it will be mapped on to a set of codes, which will allow the information to be communicated electronically throughout the NHS. On the back of information collected for patient care will come aggregated information that can be used for resource management, budgeting, audit, and research on outcomes. The codes that will be used are the Read codes, a computerised thesaurus of health care terms which have already been adopted as the standard clinical coding system for general practice[3] and will be the standard throughout the NHS by 1 April 1994 (the deadline for the clinical terms project). Thus when NHS wide networking is introduced it will be able to use the Read codes for communicating clinical information throughout the NHS.

The two year, £2·7m clinical terms project, which is supported by the Joint Consultants Committee, is being coordinated by the NHS Centre for Coding and Classification. Most of the work is being done by 40 specialist working groups representing specialty associations and the relevant college or faculty committees. Their task is to define and record all those terms that clinicians use in their medical records and to ensure that the appropriate Read codes are attached to each term. Thus they have to include not only terms that are covered by existing classification systems such as ICD9 (diagnoses) and OPCS4 (Office of Population Censuses and Surveys classification of surgical operations and procedures) but also the many others not so classified—for example, clinical, social, and family history; symptoms and signs; diagnostic and laboratory procedures; operative and non-operative procedures; and drugs and appliances.

The groups will list all the terms used, define preferred terms and synonyms, arrange them in hierarchies according to their degree of specificity, and code the terms. For example, a preferred term may be "dyspnoea," with "shortness of breath" and "breathlessness" as synonyms. A hierarchy of preferred terms and their Read codes might look as follows:

Level	*Preferred (Read code) terms*	*Read code*
1	Circulatory system disease	G
2	Ischaemic heart disease	G.3
3	Acute myocardial infarction	G.30
4	Acute anterior myocardial infarction	G.301
5	Acute anteroseptal myocardial infarction	G.3011

The working groups also have to identify abbreviations used within their specialty. Does MI, for example, stand for mitral incompetence or myocardial infarct?

The technical details, however, matter little to the user. What is important is that the Read codes will cover any information in a patient record and that clinicians can go on using the words they like—"breathlessness," for example, when taking a patient's history—though they will have to be more disciplined about abbreviations. The Read codes will be applied automatically by the software running the clinical information system. Once the clinical terms project is complete the NHS Centre for Coding and Classification will be responsible for keeping the thesaurus up to date, and the drug database will be updated monthly.

Doctors have not always welcomed the establishment of computer systems in hospitals—computers have often proved difficult to use, and the information has been of more use to