correction to survival according to the ages of the patients under review. Applying such a correction to these patients gives an age corrected survival of patients undergoing a curative operation of 77% at three years. Seven patients died within 30 days after operation and many surgeons do not include such patients in discussion of long term survival—arguing that early postoperative death precludes long term survival. Excluding these patients from consideration gives an age corrected survival of patients surviving the curative operation of 82% at three years.

From the above it is valid to state that the crude tumour free survival of all the patients entered into this prospective study was 43% and that the age corrected survival of patients surviving a curative operation was 82% at three years. Though this was a prospective study, the data may be analysed retrospectively and justifiably amended. Initially the surgeon performing the operation considered excision to have been curative in 128 patients. When we analysed these operations with the advantage of having the histological report on the excised tissue we concluded that a curative resection was performed in only 110 patients. The crude survival of these patients was 76%, the age corrected survival of those undergoing a curative operation was 85%, and the age corrected survival of patients surviving a curative operation was 89% at three years. It was the latter method of retrospective analysis that was used by Lockhart-Mummery *et al* in obtaining a five year survival rate of 68.4%, which is quoted so frequently in reports.²

Before undertaking this study and its analysis we knew that comparisons of survival were being made on false grounds owing to selection of data. Nevertheless, we were surprised by the extent of the differences that could be induced by different methods of analysis of the same data in a single study. It seems probable that the excellent results reported from some centres and the distressing

evidence from more widely based studies can be explained on this basis.

From the epidemiological viewpoint it is important to consider all patients in computing survival, but which method of analysis should be used to compare treatment? It seems illogical to use a database including all patients suffering from malignant disease when many may be recognised as incurable at the time of presentation, yet selection at this stage will affect apparent survival and may introduce bias. Since many different databases may be used, it is unsound to draw conclusions from any analysis of treatment unless the population studied is closely defined and the fate of any patient excluded is known.

The patients in this study were admitted under the care of the following consultants (members of the North West of England Gastrointestinal Tumour Group): Mr J Bancewicz (Salford), Mr J Duthie (Oldham), Mr B D Hancock (Wythenshawe), Mr E M Hoare (Davyhulme), Professor M Irving (Salford), Mr R D Kingston (Davyhulme), Mr I MacLennan (Manchester), Mr N K Maybury (Wigan), Mr W McN Orr (Manchester), Mr P F Schofield (Manchester), Mr P A Sykes (Davyhulme), and Mr D E F Tweedle (Manchester).

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Medicolegal

Is inexperience a defence against negligence?

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How far will the law go in making allowances for a junior doctor's inexperience? "In all cases the courts expect the doctor to show that degree of skill which would be shown by the reasonably competent professional man," say Mason and McCall Smith, in *Law and Medical Ethics*. "This is an objective standard and it is therefore irrelevant whether the doctor has qualified the day before or ten years before the alleged incident of negligence—it will make no difference to the way his conduct is assessed." But Capstick in *Patient Complaints and Litigation* writes: "A general practitioner or a junior hospital doctor is not expected in the ordinary course of his practice to exercise the skills of a specialist, although the situation may be different if he holds himself out as possessing some specialist skill, or if he undertakes treatment which requires more skill than he possesses, unless there is some emergency and specialist help is not available."²

Faced with such apparently conflicting pronouncements, where does the junior doctor stand? The question of the standard of care which the law expects of a junior hospital doctor has now been thoroughly dissected in a Court of Appeal case decided last month and reported in *The Times* law report alarmingly headed "Doctor's inexperience no defence to negligence."³

Arterial catheter twice put into vein

In that case, *Wilsher v Essex Area Health Authority*, which is likely to go on to the House of Lords, the Court of Appeal held by a majority of two to one (the Vice-Chancellor dissenting), according to *The Times* law report, that the law requires of a junior hospital doctor the same standard of care as is expected of his more senior colleagues, and that inexperience cannot be a defence to an action for medical negligence. The health authority's appeal was dismissed. But a careful reading of the facts and the full judgments in the case (which are only summarised in the law report) shows that a clear distinction has been made between a senior house officer, who was found not negligent, and a registrar, who was found negligent, though their mistakes were broadly the same.

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The Essex Area Health Authority was sued on behalf of Martin Wilsher, now 7½, nearly blind as a result of retrolental fibroplasia, which his lawyers alleged was caused by an excess of oxygen in his blood during the first two weeks of his life in the special baby care unit at the Princess Alexandra Hospital, Harlow. After standard procedure in claims arising from hospital treatment, the claim against the health authority alleged not that it was directly liable in negligence—for instance, by allocating junior doctors to jobs calling for greater experience—but that it was vicariously liable, as the doctors' employers, for the doctors' negligence.

The particulars of claim named two doctors, a senior house officer and a registrar, who worked on the neonatal care of the baby, born nearly three months prematurely in December 1978. The SHO had qualified in 1974, the registrar (who had six years' experience in paediatrics, including one year of neonatal intensive care) in 1970.

Some time after 0100 on 16 December, soon after the baby's birth, the SHO attempted to pass an arterial catheter for connection to an oxygen monitoring system. Unfortunately, he inserted the catheter into a vein. The catheter passed across the heart and lodged in the left atrium. The blood being sampled thus contained arterial blood mixed with venous blood passing through the foramen ovale, and the oxygen readings were not therefore so low that the mistake would at once have been recognised. But the wrong blood was investigated.

Having inserted the catheter, the SHO arranged for a radiograph, which he inspected. He asked the registrar to check what he had done. The registrar decided that the tip of the catheter was too high and that it should be withdrawn by 2 cm. Neither spotted that the catheter was following the line of a vein, not an artery. At about 1000 the registrar decided to change the catheter. He himself inserted the new one, but again it was put in a vein. Another radiograph was taken, but again the error was not recognised. At 2200 the monitor, which as a quite separate problem had been malfunctioning, was abandoned as "useless on this catheter." In the meantime, the baby was put on the ventilator and the oxygen content of the gas was raised progressively until by 2200 it was 100%, where it evidently remained throughout the night of 16/17 December. The baby was supersaturated with oxygen for between 8 and 12 hours.

Three judgments

In the high court the health authority was found negligent because it fell short of the proper standard of care for a special care baby unit, partly through the SHO's "difficulty through inexperience in reading the x ray" and partly through the registrar's "carelessness in not checking the x ray properly." But because the claim was based on vicarious liability, the Appeal Court judges decided it was necessary to consider what standards of care were demanded of the individual doctors, something which had not been considered at the high court trial.

The problem with setting different standards for doctors at different levels of experience is, as Lord Justice Mustill pointed out in his judgment: "that the standard of care which the patient is entitled to demand will vary according to the chance of recruitment and rostering." Counsel for the health authority argued that medicine was a special case; if hospitals abstained from using inexperienced people, they could not staff their wards and theatres, and the junior staff could never hope to learn. To his mind, his lordship said, the notion of a duty tailored to the actor, rather than to the act, had no place in the law of tort.

In the nub of his judgment on this issue he said that he preferred to relate the duty of care not to the individual but to the post the individual occupied. "In a case such as the present, the standard is not just that of the averagely competent and well informed junior houseman (or whatever the position of the doctor) but of such a person who fills a post in a unit offering a highly specialised service. But even so, it must be recognised that different posts make different demands. If it is borne in mind that the structure of hospital medicine envisages that the lower ranks will be occupied by those of whom it would be wrong to expect too much, the risk of abuse by litigious patients can be mitigated, if not entirely

eliminated." Note "such a person." This presumably means "a houseman," "a registrar," or whatever the position of the doctor, not just "a doctor," and therefore seems to recognise that the standard varies with the level the doctor has reached as well as the post.

Lord Justice Glidewell, in his concurring judgment, agreed with the trial judge that the test to be applied in deciding whether the doctors were negligent was the test in *Bolam v Friern Barnet Hospital Management Committee*, which is usually applied in medical negligence cases: "The standard of the ordinary skilled man exercising and professing to have that special skill." In his view, he said, the law required the trainee or learner to be judged by the same standard as his more experienced colleagues. If it did not, inexperience would frequently be urged as a defence to an action for professional negligence. But he went on: "If this test appears unduly harsh in relation to the inexperienced, I should add that in my view, the inexperienced doctor called upon to exercise a specialist skill will, as part of that skill, seek the advice and help of his superiors when he does or may need it. If he does seek such help, he will in my view often have satisfied the test, even though he may himself have made a mistake."

Sir Nicolas Browne-Wilkinson, the Vice-Chancellor, dissenting, said that he would have allowed the health authority's appeal, although he agreed that the registrar was negligent, because he did not believe there was sufficient evidence that the plaintiff's retrolental fibroplasia had been caused by the excess oxygen. He also disagreed on the standard of care to be applied. In his view, junior doctors who took posts in specialist units could not in fairness be said to be at fault if, at the start of their time, they lacked the very skills which they were seeking to acquire.

Consult a senior and you may not be found negligent

The judgments of Lords Justices Mustill and Glidewell, as the majority, now represent the law, at least until the House of Lords has its say. But there is much of comfort in them for the bottom ranks of hospital doctors. Of the four judges, including the trial judge, who have so far considered the case, not one found the SHO negligent. A junior doctor who consults a senior colleague wherever possible in cases of uncertainty will do much to diminish the chances of a successful negligence claim against him.

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Is it advisable to treat painful osteoarthritis of the ankle in an active person with aspirin or non-steroidal drugs?

Osteoarthritis of the ankle causes swelling and pain on dorsi- and plantar-flexion. It should be differentiated from ligamentous lesions, which mainly cause local tenderness and instability, and periostitis. Arthritis often has a clear underlying cause, such as injury or inflammation, and may often be seen on x ray films. The implication of this question is that really effective treatment of the pain with non-steroid anti-inflammatory drugs (NSAID) might encourage the development of worsening problems, a sort of "pseudoneuropathic arthritis." Although this is a theoretical possibility, long term treatment with drugs is not needed. Mild exacerbations of arthritis are often self limiting and helped by non-steroid anti-inflammatory drugs; severe arthritis is so disabling that orthotic or orthopaedic measures are usually needed. Osteoarthritis is not a single disease and may arise from various insults to a range of structures. Altered glycosaminoglycans in articular cartilage, however, are probably always important in its pathogenesis. In experimental animals non-steroid anti-inflammatory drugs (and other agents) have been shown to affect glycosaminoglycan synthesis in a variety of ways. It is, however, much too early to say whether long term non-steroid anti-inflammatory drugs are helpful, harmful, or variable in their effects.—J A MATHEWS, consultant rheumatologist, London.