Abstract
Traditionally, in the United Kingdom and Europe, a surgeon is generally not troubled by litigation from patients presenting elective as well as emergency cases, but this aspect of custom has changed. Litigation by patients now significantly affects surgical practice and vicarious liability often affects hospitals. We discuss some fundamental legal definitions, a must know for a surgeon, and highlight some interesting cases.

Introduction
In medical negligence, a patient (claimant) needs to demonstrate a duty of care by a doctor (defendant), a breach of that duty, an injury, and that the negligence was a cause of the injury (causation). The claimant's claim would fail if any of these elements are not proven. However, a successful claim would result in the surgeon being 'negligent' and the hospital/clinician/insurance company will be required to pay for the damages.

To institute causation, the claimant must prove, on the balance of probabilities (51% or more), that negligence was the cause of injury. This entitles the patient to full compensation. If the balance of probability is 49% or less, then the patient is not entitled to any damages. The problem arises when several factors are involved in the injury and it is difficult to demonstrate causation or accurately calculate the probability. When this is difficult to prove, a patient can resort to the concept of 'loss of chance' which represents an important change in the English law and is of particular interest to people working in the fields of medicine and law.

The qualitative concept of 'loss of chance' was described in Rufo v Hosking. In order to recover damages for the loss of chance of a better outcome, the claimant is required to prove on the balance of probabilities that there was a chance to have a better outcome had the negligence in treatment not occurred. Quantification of probability depends on the balance of probabilities in the legal sense. Unlike causation, this does not simply mean more than 51%, nor does it mean beyond random possibility. But the 'chance', once recognised as above de minimis, cannot simply drift in a stream of anticipated future events; it has to be dealt by a 'complete tort'.

According to general principles of the law of negligence and in line with cases such as Barnet v Chelsea & Kensington Hospital Management Committee and Hotson v East Berkshire Area Health Authority, the claimant could not establish that the defendant was the factual cause of any loss suffered and so the claimant had to fail. A casualty officer in Chelsea and Kensington Hospital, being unwell and failing to attend, gave instructions to discharge 3 patients, who earlier attended, to the emergency department. One patient died later due to arsenical poisoning, a rare cause of death. The hospital was found negligent in failing to examine the patient but not for the death of that patient. The court was satisfied that even if the defendants had performed their duty of care and admitted the deceased to their hospital, he would still have died of arsenic poisoning 5 hours after being admitted; therefore, they suffered no loss as a consequence of the breach of duty. In Hotson v East Berkshire Area Health Authority, a 13-year-old school boy (the claimant) fell heavily to the ground 12 feet below. In hospital, his knee was X-rayed and the patient was cleared and discharged. On day 5, the patient was taken back to the hospital, diagnosed with hip injury and appropriately treated. Unfortunately, he suffered from avascular necrosis, which leads to misshapeness of the joint, disability and pain with a possibility of developing osteoarthritis in the future. An expert's evidence revealed that if correct treatment would have been provided on the day of injury, there would have been a 25% better chance of preventing disability and future complications, leading to full recovery. The hospital admitted negligence and agreed to pay 25% of the full compensation. The House of Lords overruled the judgement; the explanation was there was a 75% chance of the claimant developing avascular necrosis even if the treatment had been provided on the same day.

In a non-medical case, Fairchild v Glenhaven Funeral Services, the House of Lords allowed the claim to succeed despite the inability of the claimants to provide evidence that several employers had caused them to contract mesothelioma (lung cancer) after exposure to asbestos.

In January 2005, the House of Lords released its long-awaited decision in Gregg v Scott. By a margin of 3:2, it was held that factual causation in medical malpractice cases should not be resolved on a 'loss of chance' basis.

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The claimant in Gregg v Scott again depended on the same principle. Mr Gregg attended Dr Scott with a lump under his left arm. Dr Scott negligently misdiagnosed the lump as benign (lipoma), when, in fact, it was a non-Hodgkin’s lymphoma (malignant cancer). The cancer was discovered 9 months later when another GP referred Mr Gregg to hospital to be seen by a specialist. By that time, the tumour had spread to the chest and Mr Gregg underwent high-dose chemotherapy. The treatment temporarily destroyed the tumour, but Mr Gregg suffered from a relapse. The trial judge held on the expert evidence that at the time of misdiagnosis, Mr Gregg had a 42% chance of surviving 10 years (10-year survival being taken as a ‘cure’), but that the delay in diagnosis had reduced that prospect to 25%. Mr Gregg’s claim was limited to the ‘loss of chance’. Mr Gregg alleged that had Dr Scott properly diagnosed his condition when he saw him, there would have been a much greater chance of being cured.

The trial judge therefore dismissed the claim; his decision was affirmed first by a majority of the Court of Appeal and subsequently by a majority of the House of Lords.

The main problem faced by the claimant is the chance of being cured, before negligence, which was only 42%, which means that the defendant did not deprive the claimant from cure on the balance of probabilities. This was the conclusion at first instance and in the Court of Appeal. The claimant argued that although he could not recover for the failure to be cured per se, he should be entitled to recover for the ‘loss of chance’ that he suffered because of the defendant’s negligence and should have been able to recover for 17% of the value of cure.

By a majority of 3:2, the House of Lords decision in Gregg v Scott refused to recognise ‘loss of chance’ as a recoverable head of damages. In other words, the House of Lords held that it had not been shown that the delay in the treatment caused the loss on the balance of probability. The House of Lords further held that the patient would still have suffered the loss he did, even if there had been no negligence on the part of the defendant. This case was treated as a Hotson-like case, where the evidential improbability over what happened in the real past forms the nexus of lost chance cases and with the extra confusion of uncertainty over potential harm (in future)1. The opinions of the Lords of Appeal for judgement are discussed below.

Lord Hoffman: The claimant could not prove on the balance of probabilities that his likely premature death would be attributable to the negligence. On the balance of probabilities, it would have occurred in any event. Mr Gregg further suggested that a reduction in the hope of a good outcome should, per se, be a recoverable head of injury. Even if he could not establish that, if appropriately treated, he would as a matter of probability have had an acceptable medical outcome; could he not claim if negligence had reduced his already deprived prospects still further? But Lord Hoffman would have none of it. He stated that the only proper claim was for injury: there should be causes, accepting the fact that they may be difficult to identify. Finally, Mr Gregg should be a claim against those who negligently reduce the prospects of survival, because that is the same as increasing the risk of premature death. He relied on the principle which emerged in the decision of the House of Lords in Fairchild v Glen Haven Funeral Services Limited5. However, Lord Hoffman’s refusal to extend the Fairchild principle was definite.

Lord Phillips: To begin with, the model from which the trial judge’s conclusions as to the reduction in the claimant’s prospects of survival were drawn, and, lastly, those conclusions. The analysis of the conclusions from the ‘statistical evidence’ was undertaken without the benefit of expert evidence from a statistician. Lord Phillips’ conclusion was that, particularly as Mr Gregg was getting closer and closer to the 10-year survival period in any event, it was no longer possible on the balance of probabilities to conclude from the evidence that the delay in management had affected his prospects of survival. It should be taken into consideration that this has caused him a number of adverse effects, including cancer spread, high-dose chemotherapy and relapse; this would be compensated on ordinary principles. Lord Phillips considered that (1) to hold so would require overruling two other House of Lords decisions, Hotson v East Berkshire Area Health Authority6 and Wilsher v Essex Area Health Authority7, (2) the ramifications of doing so were better considered by the Law Commission than the House of Lords and (3) the complications of Mr Gregg’s case were such that, even if minded to do so, it would not be an appropriate vehicle for their Lordships to introduce the concept of damages for a loss of chance of cure.

Baroness Hale: Having stated that she was initially attracted to the argument that the loss was consequential upon the physical injury of the spreading cancer, Baroness Hale came to the opinion that it had to be rejected on the particular evidence of Mr Gregg’s case because consequential loss still had to be proved on the balance of probabilities to be consequential in any injury caused by the negligence. Baroness Hale acknowledged two possible approaches to the problem: the wider approach was in any case where there was a reduction in the chance of a better physical outcome, regardless of whether or not the same could be linked to physiological changes in the claimant or restricting recovery only to those cases where reduction in the prospects of recovery could be attributed

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to physiological damage, in fact already caused by the defendant’s negligence. This of course will lead to the retention of the traditional concept of causation. Baroness Hale suggested that the consequences of this will include its impracticality and difficulty to apply in practice and the fact that it could lead to liability in almost every case. Not to mention that almost any personal injury claim could be reformulated as a claim for a ‘loss of chance’ of a more favourable outcome, but proportionate recovery would cut both ways. Baroness Hale also highlighted the difference between ‘loss of chance’ due to financial loss and personal injury claims; in the former, damages are awarded.

Lord Nicholls: Lord Nicholls observed that in many cases, the experts can do no more than assess the claimant’s prospects of recovery. In such cases, Lord Nicholls considered that justice required the claimant’s loss to be characterised as: ‘loss of chance of a favourable outcome rather than loss of the outcome itself’. This is consistent with recognition by English law of the possibility of recovery of loss of a chance in cases where financial loss may have resulted from the negligence of an adviser (i.e. solicitor), so simply cases concerning doctors should be dealt with in a similar manner. Other advantages of this approach recognises what in fact the patient has suffered from as a result of the negligence and gives effect to the legal duty breached by the doctor in such cases, namely to promote the patient’s prospects of recovery by exercising due skill and care.

Lord Hope: Lord Hope considered that the law would be defective were it not to provide a remedy in cases where there was a significant reduction in the prospects of a successful outcome caused by a delay in treatment which was within the scope of a doctor’s duty to prevent when examining the patient. He drew a distinction between cases such as Hotson (in which, on the balance of probabilities, it was found that an injury occurred before the allegedly negligent treatment) and Mr Gregg’s case (in which the injury followed such treatment). In such cases, where the prospects of a successful outcome were more than de minimis, the claimant would be entitled to feel that he had lost something valuable for which he should receive financial compensation, if those prospects were negligently reduced.

Rather than clarifying the issues, the House of Lords judgement appeared to confuse them. It comes as no surprise at all that two members of the majority have called for legislation to resolve this problem, as further development in common law will lead to more controversial and bewildering cases. Several cases have illustrated the need for a quick general review of the judicial approaches in personal injury cases. Difficult areas need to be revisited; this includes the possible escalating costs of the NHS liability insurance, balance of probability, statistical evidence and ‘loss of chance’. The decisions of Lords Nicholls and Hoffmann present the most compelling cases for the dissent and majority. They also contain essential ambivalence that lies at the heart of this issue and deciding the consequences of an injury.

Past facts must be decided on the balance of probabilities…in assessing causation. This of course will lead to the wrongful act of the defendant needs to prove that no chance existed of a better outcome, the claimant would be in his favour. However, the defendant needs to prove that no chance existed of a better outcome. The hurdle continues to be in the quantification of a chance of a better outcome. The quantification of damages for anticipated injury is very difficult to perform, as no one can predict the future; in past events, sometimes uncertain knowledge of the events affects causation and decision making.

The residual uncertainty over the past disappears and the chance of future harm becomes firmly tied to this, now undisputed, injury. There is an established common law rule for deciding the consequences of an injury. Past facts must be decided on the balance of probabilities, but future facts are decided by an assessment of the chance (<50%) that they will happen) and the damages are discounted to value the chance.

**Discussion**

Loss of chance causation permits a claimant who cannot satisfy the traditional balance of probability standard to nevertheless succeed, at least in part. In Molinari v Ministry of Defence, Mr Molinari sued the Ministry of defence after developing leukaemia in the course of his employment as a classified radiation worker at Chatham Dockyard. Breast and causation were not disputed, but the problem lied in the ‘quantum’.

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The High Court awarded conventional damages on the basis that he had a chance (12%–20%) of relapse, which would have been fatal. In Gregg, the judge accepted that prompt treatment would have prevented the spread of the tumour to the chest and all consequent problems, including the pain associated with the spread, which was in itself an ‘injury’. If the claimant’s counsel pursued this argument alone, it seems more likely that he would have succeeded and compensation would have been awarded. However, if this path would have been taken, it would have been assumed that premature death would not result, and therefore, no immediate increase in damages would have been awarded.

In Hutchinson v Epsom and St Helier NHS Trust, an obese man, who was a heavy drinker, attended the hospital where blood tests were conducted and he was questioned about his alcohol consumption. Results were abnormal: no ‘liver function’ tests were performed and his liver disease was missed. He died in the following year. His wife (claimant) provided evidence that her husband would have had stopped drinking and lost weight if he had been told that he was suffering from an end-stage liver disease; her claim succeeded in full.

In Gregg, if the claimant had died before the trial, it would have been even more difficult to accept that the enlarged tumour caused premature death rather than the original lymphoma. The fact that there is also a chance of death stemming from the original lymphoma is irrelevant and does not preclude an order for provisional damages for the chance that follows from the enlarged tumour. Given the greater weight assumed by a claimant when relating the actual past rather than postulating chances of future events, it is hard to escape the view that Gregg’s counsel should, rather than confronting Hotson, have redoubled his labours to emphasise the role of the enlarged tumour as the source of future worsening.

The boundaries remain uncertain in ‘loss of chance’ causation. The reported decisions in which it has been applied are in diverse cases. Unfortunately, there is no common feature among successful ‘loss of chance’ cases that would allow differentiating them from other ‘balance of probability’ cases and which would allow the courts to deal with them in more clarity. With the current judicial randomness and scholarly dissension, it is no surprise at all that claimants continue to revisit this with various cases, including medical negligence ones. In some Australian states, claims for ‘loss of chance’ have found their way through. They argued that the patient would rather have a 42% chance of survival than 25% (when discussing Gregg v Scott). The development of the ‘loss of chance’ causation may have several consequences. Healthcare professionals would be seeing claims being framed in a dual manner. The classical one would be claiming compensation for an actual injury resulting from negligence; the other would include elements of hypothetical chance of a better outcome. It is important to highlight that the measure of injury (damages) is to ensure that the claimant is ‘no worse off’ having suffered the breach of duty of care. A claimant cannot be seen to benefit from the breach of duty of care. It is also expected that this will result in an increase in claims and an increase in the practice of defensive medicine. As a result, insurance premiums may also rise.

Arguably, the quantity of lost chance should be low; otherwise an injured claimant has no hope of compensation unless negligence adds substantially to a naturally occurring adverse outcome. Lord Hoffman argued that the conceding liability in cases like this could have such ‘enormous consequences for insurance companies at the National Health Service’ that it fell to Parliament to enact such a change. Nevertheless, it is submitted that the existing law of personal injury can offer Mr Gregg redress without revision of the relevant statute or common law.

The ruling in Gregg addresses none of the problems in the law of causation left as unfinished business by previously mentioned cases. Altered awareness to what constitutes justice in a common form of medical negligence caused the division of the House of Lords over this case, leading to the traditional approach to the law of causation to continue to be unchanged. This area continues to be unsolved and be a problem to people practicing medicine and law. But, given their apprehensions of floodgates opening, with unpredictable consequences for the liability insurance costs of the National Health Service, the willingness of the House to leave this issue to Parliament is perhaps understandable.

Changing the law would have serious implications on the service; in theory, any delay in offering treatment can lead to less than a full recovery. An example, a patient with a certain injury waiting in the emergency department for several hours can claim that this has resulted in him/her not recovering completely from the injury. Further, a patient booked for operation had to cancel as the surgeons were running late can claim money for negligence. The hospitals are overwhelmed with the amount of patients. Clinicians are seeing more patients than before, although the European guidelines have limited the number of hours clinicians work.

The attempt to change the law to allow recovery of damages for injuries which would probably have occurred anyway, even though negligence further increased the probability of these injuries occurring, has failed. Had it succeeded, this would have led to an increase in medical malpractice litigation, tainted reputations and an increase in professional

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indemnity policies, as would the complexity of the clinical negligence claims and many more of those negligently treated would have recovered compensation. However, some would argue that this is insignificant when compared to the value and quality of human life.

The truly imprecise nature of medicine is often underappreciated. Conceptually, since all individuals are unique, their exact manifestation of disease is likewise different. Many ‘expert’ witnesses may posit that certain outcomes are likely, but this is only an opinion that should not be mistaken as absolute fact. The nature of the House of Lords decision however reflects this subtlety. Any ambiguity may be in place to protect the individual such that a senior judgement may be elicited on a case-by-case basis to allow individual justice. That the Lords should not place jurisdiction on potential future events where causation may not be clear appears entirely reasonable. ‘Loss of chance’ as a principle would appear theoretical and can only be supported by arbitrary opinion, which is often contradicted in the light of later scientific discovery. Argument by extension to absurdum would mean that one may bring suit against anyone, potentially reducing one’s chances of a favourable outcome in any realm of activity. Apart from being unfeasible, this would obviate any competitive process, which incidentally is the basis of all current economy. There is an obvious significance to the location of the House of Lords in Parliament.

In summary, the ‘House of Lords’ decision fulfils several ethical principles, which in addition to showing wisdom, also ensures that the ‘flood gates’ of erroneous medico-legal redress are not opened whilst still allowing potential remedy of injustice on a case-by-case basis.

References
7. Hotson v East Berkshire Area Health Authority [1985] 3 All ER 167.
12. Lord Hoffman, ibid at para 90, and Lady Hale, ibid at para 174.