concerned in a case to share basic information and it is rare for them to object.

Dr Raanan Gillon comments:

Given the constraints of space suffice it for this case simply to say that I would argue that the doctor was right to require evidence of approved proxy consent to include the mentally handicapped patient's name on the social services department's computer register, precisely on the grounds offered by the social worker *against* giving proxy consent—notably, protection of (and respect for) a specially “vulnerable group of patients.”

Clare Dyer comments:

A doctor's duty of confidentiality requires him or her to keep information acquired as part of the doctor-patient relationship confidential unless the patient consents to disclosure. But, as discussed above, the duty is not absolute. As, exceptionally, a doctor may disclose information to a third party in the patient's best interests even when the patient has been asked to consent but has refused, then surely there can be no objection to such a disclosure when the patient, because of severe mental handicap, is unable to consent. If the patient is an adult a parent or relative cannot consent on his behalf anyway so, legally, there is no point in seeking such consent.

Portraits from Memory

23—Professor Colin Beattie (1902-87)

JAMES HOWIE

As a microbiologist Colin Beattie earned an international reputation from his work on toxoplasmosis. He lifted the parasite *Toxoplasma*

gondii from obscurity in medical circles and made it his main interest. It remained so until his death; and his work compelled others to give it a place in their thinking. In all his accounts of this work he invariably gave generous credit to his collaborators, especially his juniors, although without Beattie's own pioneer work it would never have come to their attention. He also did useful work on brucellosis and typhus, and he had an all round interest and outlook that made it worth while

discussing with him any current problem or topic of interest.

Microbiology, marriage, and the Middle East

In 1928 he qualified in medicine from the University of Edinburgh. After house appointments he worked for seven years in the bacteriology department of the university under Professor T J Mackie, a celebrated and, as some would say, a formidable and energetic head of department of whom it was said that he never walked anywhere, he always ran.

In 1937 Beattie was appointed professor of bacteriology in the

Royal Faculty of Medicine of Iraq and director of the government bacteriology laboratory in Baghdad. In the same year he married Dr May Christison, a Scot with a Canadian arts degree who was working for her PhD in the Edinburgh University bacteriology department. Always interested in the arts, they made a splendid team and became experts in the mysteries of oriental carpets. Beattie was happy during his nine years in Baghdad and built up an effective service in bacteriology there.

In 1946, however, he returned to Britain and in due course was appointed to the chair of bacteriology in Sheffield University. He was also made an honorary consultant to the United Sheffield Hospitals. His department initially consisted of himself and one lecturer. He built it up to a flourishing and respected institution and established an effective collaboration with the Sheffield hospitals. Even after his official retirement in 1967 he continued to act as locum consultant for various hospitals and was still active and useful in this capacity into his late 70s. So much for Beattie the microbiologist—a good one, much respected.

First class instruction

Of Beattie as a professor and as a person there is more to be said. He was a very well educated man, having taken an MA in classics before studying medicine. He was interested in anything and everything useful and he read widely. He had time for everyone and everything, and he and May entertained generously and handsomely. He always arranged that his staff met his external examiners in an informal party at his house and thus widened their contacts and areas of interest. He lectured well, never regarding teaching as other than a matter of first class importance. As an examiner of undergraduates he was fair and always aware of the need to put candidates at their ease before getting down to the serious part of their vivas. This is perhaps surprisingly often the intention of examiners, but few knew as well as Beattie did exactly how to make the good intention a reality. If a student obviously could not answer a question he simply changed the subject, not—as so many do—persisting and driving home the sense of failure. As soon as a

Edinburgh EH13 0BU

Sir JAMES HOWIE, MD, FRCP

Correspondence to: 34 Redford Avenue, Edinburgh EH13 0BU.

candidate gave him a right answer he would say cheerfully: "That's right. Well done. Now tell me what more you know about this microbe." It was refreshing to see how many borderline candidates cheered up and made a good pass under such intelligent and understanding examination.

Beattie told me of one episode in his early career which reveals both his personal courage and integrity as well as his determination to give a fair deal to a misguided student, a candidate for an honours degree in science. This student had deliberately so planned his answer to an early question in his viva that he set up an argument between his two examiners. As the student had foreseen, this argument became so heated that the candidate's presence became almost superfluous. "All right, you may go!" he was told. The examiners, scowling at one another, agreed: "Second class honours." At this point Beattie, who was present although not examining, asked the examiners to realise what had happened. He argued that this student had a record in his class work and other parts of the examination that surely entitled him to serious

consideration for first class honours. The viva just completed had not really tested that issue. The candidate was recalled, grilled, scolded, and given first class honours. The examiners acknowledged their mistake and thanked Beattie for his intervention. Credit all round.

As an assessor on committees convened to appoint consultants in microbiology Beattie was uncommonly successful. Candidates were often surprised to find that he had not only studied their applications but had actually read their published papers and was ready and anxious to discuss their contents and conclusions. Very few assessors so equip themselves but there is no more certain way of being able to distinguish serious investigative work from mere window dressing. Not surprisingly Beattie's services as an external assessor were in great demand.

In conversation with an Edinburgh friend who knew Colin Beattie only slightly, I found my friend not at all surprised about the good opinion I had formed of Colin. He said: "It's what you would expect. He was at school at Fettes, wasn't he?"

Basic Molecular and Cell Biology

How do receptors at the cell surface send signals to the cell interior?

ROBERT H MICHELL

The cells of the body are bathed in fluids whose major constituents—for example, the ions and proteins of plasma—are held at remarkably constant concentrations over long periods. These extracellular fluids, however, also contain, at very low and constantly changing concentrations, an extraordinary number of chemically diverse molecules that work together to control cell and tissue behaviour and thus integrate body function. Some of these signals, notably neurotransmitters, are released from one cell and recognised by another within a very limited space—for example, acetylcholine acting within the confines of a neuromuscular junction or various transmitters at synapses between neurones. By contrast, classical hormones are disseminated throughout the body (or at least throughout the extraneural tissues) and act on all cells that bear the receptors which recognise them and initiate tissue specific responses.

Between these two geographical extremes lie many other extracellular signals whose actions are localised but directly affect much larger volumes of tissue than classical neurotransmitters at close synapses. Such agents include (a) peptide neurotransmitters that may diffuse away from a nerve ending and act on quite distant cells before destruction; (b) hypothalamic hormones that are carried to the anterior pituitary (their major target organ) by a specialised local circulation before dilution into the entire blood volume; (c) the prostaglandins (prostacyclin from endothelium and thromboxane

A₂ from activated platelets), subendothelial collagen, and adenosine diphosphate (ADP) derived from platelets that regulate platelet behaviour during incipient thrombus formation at the site of blood vessel injury; (d) the platelet derived and other polypeptide growth factors that control the repair of such wounds; and (e) the histamine, leukotrienes, platelet activating factor, and lymphokines that are among the many mediators of inflammatory events. Even the response of an egg to the first contact of a fertilising sperm, before cell fusion, seems biochemically to be little different from the responses of exocrine secretory cells to secretagogues.

So how do all the cells of the body, with their shared origin in a single fertilised egg that has a strictly limited gene pool, manage to mount correct responses to such an astonishing range of external chemical influences? The answer, which has been emerging gradually from research in many laboratories over the past 30 years or so, is remarkably simple and elegant. With the notable exceptions of steroids and thyroid hormones, which enter cells and bind to intracellular receptor proteins that then home on to the chromosomes and control the expression of genes, extracellular stimuli are mostly molecules that are large or hydrophilic, or both. Thus they can interact readily with the cell surface but do not enter cells rapidly enough for the cells to be controlled by intracellular hormone molecules. The complex machinery that discriminates between the many chemical stimuli and then amplifies their signals onwards into the cell interior is built into the cell surface membrane.

Recognition of extracellular stimuli

The highly selective sites at the cell surface that recognise extracellular stimuli and even discriminate between closely related

Department of Biochemistry, University of Birmingham,
Birmingham B15 2TT

ROBERT H MICHELL, DSC, FRs, Royal Society research professor