Audit of the Assessment of Mental Impairment in the Elderly

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The accurate assessment of mental state in elderly patients admitted to hospital has long been recognised as essential in the identification and management of dementia and toxic confusional states. The failure to diagnose such syndromes is associated with the misplacement of patients[1]; mental impairment itself is associated with difficulty in discharge from hospital[2] and increased mortality[3]. A Royal College of Physicians Report recommended in 1981 the administration of a mental test score to all elderly patients admitted to hospital[4].

There has been considerable interest over the last few years in the role of medical audit, not only in the identification of poor practice but also as a means towards improving the effectiveness and efficiency of care. Although studies may show that the initiation of audit coincides with improvements in outcome[5], the extent of the change attributable to audit remains doubtful. A recent review suggested that 'it would appear that simply feeding back information on performance has almost no impact on changing clinical behaviour'[6]. We have attempted a controlled study of the effect of audit on the assessment of impairment in elderly patients admitted to hospital wards.

Methods

Over a two-month period the case notes of 195 patients were reviewed. These patients were consecutive admissions over the age of 65 years to three medical wards under six general physicians, four orthopaedic wards under six surgeons, or three wards used by three geriatric firms. The information sought in the notes comprised whether or not a formal mental test score had been carried out, whether there was any statement describing the patient's mental state, and whether any corroborative history had been obtained from a third party. One of the investigators then performed a simple mental test score with the patient[7], as shown in Table 1. Using ward registers, each patient was followed up at one month to determine the date and destination of discharge. The purpose of the study was concealed from ward staff at this stage; each consultant involved had given permission for an audit of case notes of elderly patients under his care to be performed, but had been asked not to divulge this to junior medical or nursing staff.

Table 1. Abbreviated mental test score of Hodkinson (1972); (each question scores 1 mark).

1. Age
2. Time (to nearest hour).
3. Address for recall at end of test — this should be repeated by the patient to ensure it has been heard correctly: 42 West Street.
4. Year.
5. Name of hospital.
6. Recognition of two persons (doctor, nurse).
7. Date of birth.
8. Year of First World War.
9. Name of present monarch.
10. Count backwards, twenty to one.

After the results of this initial audit had been collated, a summary of the findings was sent to the consultants in charge of one general medical firm and one geriatric firm in one ward block — the 'audit-wise' group. No specific suggestions were made as to how the results should be interpreted or acted upon, other than a request to discuss them with their own junior staff but not with staff on other firms. One month later, a repeat audit was conducted on the notes of 17 consecutive elderly patients admitted to the audit-wise general medical firm and 21 patients to the audit-wise geriatric firm. For comparison, a control group of 27 patients under the care of an 'audit-blind' geriatrician (who had no knowledge of the results of the first audit) was studied in a separate ward block.

Results

Initial Audit

Considerable variation was seen between the different ward groups in terms of age, sex ratio and mean level of

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mental impairment. To simplify comparisons, patients were grouped according to their mental test score as 'mentally normal' (7-10 points), 'mentally impaired' (4-6) and 'severely mentally impaired' (0-3). The distribution of the patients between the geriatric, medical and orthopaedic wards is shown in Table 2. The fact that

Table 2. Age, sex and mental test score in patients over 65 years admitted to geriatric, medical and orthopaedic wards: initial audit.

Ward group (n)	Mean (S.D.) age years	% Female	Mean (S.D.) mental test score
Geriatric medicine (100)	83 (6.9)	71	5.6 (2.7)
General medicine (50)	75 (5.9)	52	7.6 (3.2)
Orthopaedic surgery (45)	82 (6.3)	96	6.1 (3.3)

admissions (in the over 65 age-group) to geriatric wards tended to be older, were more likely to be female and had a higher prevalence of mental impairment than on general medical wards is not surprising in view of an 'age-related' admission policy. The orthopaedic wards studied were devoted to acute admissions, and the data reflect the preponderance of elderly women with fractured neck of femur.

Analysis of the case notes on geriatric wards showed that only 8 per cent of patients had had a formal mental test score, and none on more than one occasion (to determine progress). In the absence of formal testing, 17 per cent had a documented corroborative history from a third party, and 69 per cent a reference in the notes to their mental state. However, in 17 of these 69 patients the statement in the notes was misleading: for example, the notes recorded 'not confused' but a formal mental test score by the investigator showed severe mental impairment. Of the 23 patients with no reference at all to mental state, five had some degree of mental impairment on formal testing (severe in three).

Of the 50 general medical patients, none had received a formal mental test score, six (12 per cent) had a corroborative history, and 19 (38 per cent) some description of their mental state, four of which were misleading. Of the 31 (62 per cent) with no reference to their mental state, six showed impairment on formal testing (severe in four).

The notes of 45 orthopaedic patients revealed no formal mental testing, two (4 per cent) corroborative histories and 24 (53 per cent) references to mental state (misleading in four). Of the 21 patients (47 per cent) with no assessment of mental state documented in the notes, five were impaired (two severely so).

Taking these 195 patients overall, 18 had died within one month of admission; 15 per cent of those severely mentally impaired, compared with only 4 per cent of those who were mentally normal ($p<0.01$, chi-squared test). Similarly, the degree of intellectual impairment was a significant ($0.01>p>0.001$) adverse prognostic indicator for discharge (Table 3).

Table 3. Proportion of patients successfully discharged from hospital one month after admission, compared with mental test score (MTS).

Patient group (MTS)	n	% Successful discharge
Severely impaired (0-3 points)	42	31
Impaired (4-6 points)	43	47
Mentally normal (7-10 points)	110	64

Repeat Audit

The further audit of case notes one month after the results of the initial audit had been collated, is shown in Table 4; the findings of the repeat audit on 'audit-wise' and 'audit-blind' firms are compared with the original results.

As before, no formal mental testing was carried out by the 'audit-wise' general medical firm, whilst the geriatric firms continued to test at a rate close to that of the original audit, whether 'blind' or 'wise'. However, misleading comments were now absent from the notes of both 'audit-wise' firms, and there was a significant increase in the frequency with which appropriate descriptions of mental

Table 4. Mental assessment in casenotes of elderly patients admitted to general medical and geriatric wards, on initial audit and on repeat audit.

Patient group (n)	Formal mental test (%)	Corroborative history (%)	Appropriate description (%)	Misleading description (%)	Impaired, but no description %
Geriatric wards: initial audit (100)	8	17	52	17	5
Medical wards: initial audit (50)	0	12	30	8	12
Geriatric 'audit-blind' repeat audit (27)	7	7	33	15	7
Geriatric 'audit-wise' repeat audit (21)	5	10	71	0	5
Medical 'audit-wise' repeat audit (17)	0	24	60	0	6

state were made on both the geriatric (52 to 71 per cent; $0.01 > p > 0.05$) and general medical (30 to 60 per cent; $0.05 > p > 0.02$) 'audit-wise' firms, which was not seen in the geriatric 'audit-blind' ward.

Discussion

Although 85 of the original 195 patients studied (43 per cent) had evidence of mental impairment, only eight patients (4 per cent) had formal mental test scores recorded in the notes. This is disappointing in view of the recommendations of the Royal College of Physicians Report, in 1981[4]. Copies of a longer mental test are available on our geriatric wards, but even after the initial audit their use did not increase. Since the completion of the study, the 'audit-wise' general physician has requested copies of the short mental test score used, which was contained in an appendix to the 1981 College Report. 'Passive feedback' of the results of initial audit did not change the practice with regard to formal mental testing, consistent with the view that 'active feedback' is more successful in modifying clinical behaviour[6] — perhaps, in this case, by supplying wards with a copy of this paper together with copies of the mental test score.

However, even in the absence of recording of formal mental test score (or of documenting a corroborative history), what is most important is that misdiagnosis should not result in mistaken management decisions[8]. Thus the fact that a mentally normal elderly person is not recorded as such in the notes may not be of any consequence, but to miss cognitive impairment in a dement who is socially well-preserved may lead to unexpected difficulties. In this context it is important to note that the original audit showed 22 per cent of geriatric and 20 per cent of medical admissions to be misdiagnosed in terms of an absent or a misleading description, when subsequent formal mental testing revealed mental impairment. The rate of such misdiagnosis remained at 22 per cent on the 'audit-blind' geriatric firm, but it is encouraging that the rates fell significantly to 5 and 6 per cent on the geriatric and general medical 'audit-wise' firms respectively. All these latter errors would have been obviated had a mental test score been done, there being no misleading descriptions recorded in the notes at the repeat audit in the 'audit-wise' groups: only the 'audit-blind' group missed any cases of severe mental impairment.

The Birmingham audit group have placed emphasis on the adequacy of admission notes and the documentation of the subsequent course of illnesses, reporting that the poor quality of notes seen initially on audit quickly improves and that a high standard is maintained[9]. Such changes are limited to 'audit-wise' clinicians[10], as in our present study. We would support the view that regular audit is helpful in the development and maintenance of good clinical standards, and have instituted in the geriatric unit regular audit meetings modified from the Birmingham model. We further suggest that assessment of mental function is an important aspect of the management of elderly patients, and our study has shown improved identification of mentally impaired subjects simply as a result of audit. However, to sustain such improvement in the longer term may also require more positive educational measures[6]. As a first step, we recommend that copies of a mental test score are available on all wards dealing with elderly patients, and that consultants ask their junior staff the results of such tests — in the knowledge that successful treatment, rehabilitation and discharge of mentally impaired elderly may prove difficult, particularly where impairment is unrecognised.

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