view of the great variation in management,[3] the results of such a trial would help women with bleeding in early pregnancy, and their general practitioners, decide what is best.

Women are dissatisfied with the care that they receive when they miscarry,[4] and the lack of effective treatment for threatened miscarriage probably contributes to their dissatisfaction. Perhaps, it is the medicalisation of miscarriage—a sad but common physiological event—that has greatly contributed to women's dissatisfaction. If so, we as doctors have only ourselves to blame.

LINDSAY F P SMITH

Ilchester,
Somerset

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Better quality data for Down's syndrome register

EDITOR,—We agree with Kevin Spencer[1] and M R Gaudoin[2] that the data on the national Down's syndrome register[3] depend on the quality of information provided to the cytogenetic laboratory by the referring clinicians. In about half of the cases on the register we obtain additional information from the clinicians that was not supplied to the laboratories, and we would of course welcome more. Perhaps the most pressing need in evaluating the current genetic service is data on the proportion of mothers who are offered different types of screening and the numbers of amniocenteses that follow. Some but not all of this information is held by local laboratories, and there is a need to aggregate these data. We also agree that it is not always easy to know whether ultrasound scanning for malformations preceded or followed serum testing, and there is certainly a problem with the terminology used to describe the tests performed.

We have, however, perceived a considerable and continuing improvement in the quality of data we have received over the four years that the register has been functioning, and the consistent nature of the trends we have reported is some evidence of their validity. Preliminary analysis of data entered on the register by February this year shows that referrals after positive results of serum screening rose from 7·8% of all diagnoses in 1991 to 11·7% for the first half of 1992. In the same period, cases in which ultrasound findings were reported as the prime indication for fetal karyotyping rose from 7·7% to 9·3%, and cytogenetic referrals said to be for raised maternal age fell from 20% to 16·5%.

DAVID MUTTON
EVA ALBERMAN
ROY IDE

Wolfson Institute of Preventive Medicine,
St Bartholomew's Hospital Medical College,
London EC1M 6BQ

MARTIN BOBROW

Paediatric Research Unit,
Division of Medical and Molecular Genetics,
United Medical and Dental Schools,
Guy's Hospital,
London SE1 9RT

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Coding of clinical diagnoses

Clerical and medical errors contribute to inaccuracy

EDITOR,—C Yeoh and H Davies found that the accuracy of inpatient clinical coding improved when responsibility was transferred from clerical to medical staff.[1] Reasons for miscoding, however, are complex. We recently used data on inflammatory bowel disease of juvenile onset held in Scottish Hospital In-Patient Statistics to examine this subject.[2] We derived a geographically based sample of 255 patients aged 1-20 who had been coded in the statistics as having either Crohn's disease or ulcerative colitis,[3] and we examined the relevant hospital case records. We found that the coded diagnosis was incorrect in 47 (18·4%) instances.

In only 16 cases was the error clerical; in each of these cases the clinical records clearly showed that the doctors had made some other diagnosis but the summary form prepared by a coding clerk had the code number for Crohn's disease or ulcerative colitis. Most of these clerical errors were for patients with conditions with names similar to synonyms for Crohn's disease or ulcerative colitis.

In 24 cases the doctors' clinical diagnosis was subsequently shown to be wrong, although in most of these cases the available clinical information was compatible with the diagnosis made at the time. In 13 of these cases the diagnosis was revised when more clinical and laboratory information became available; in the 11 others symptoms settled and the patient was discharged from follow up without any firm alternative diagnosis being made. In seven other patients there was merely a misclassification within irritable bowel disease, in six because the clinical features in the early stages of disease did not allow definitive diagnosis and in one because of a clerk's miscoding.

In view of the implications of the diagnosis of incurable chronic but treatable illnesses such as irritable bowel disease we suggest that the degree of confidence in the clinical diagnosis (possible, probable, definite), or the absence of any firm diagnosis, might reasonably be incorporated in the coding system. A way of doing this should be considered when new decisions on coding policies are being made.

Finally, although prompt dictation and typing of a discharge letter may seem ideal, in some cases it may be sensible to delay final documentation until critical radiological or pathological reports are available. An early but incomplete discharge document may be administratively tidy but is clinically and epidemiologically meaningless.

ANNE FERGUSON
JOHN MURCHISON
J ROGER BARTON

Department of Medicine,
Western General Hospital,
University of Edinburgh,
Edinburgh EH4 2XU

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Persevere with Körner system

EDITOR,—Given the low quality of captured data on diagnosis reported by previous studies,[1] it is refreshing to read that C Yeoh and H Davies resolved this problem by purchasing a new information technology system and transferring the entire responsibility of clinical coding to medical staff.[2]

But given the already considerable workload of medical staff, which is likely to get even worse with the gradual implementation of the junior doctors' new deal on working hours,[3] it is doubtful whether doctors in most other hospitals could take on the burden of coding clinical material and entering the codes into the computer. New systems implemented by individual departments or hospitals incur additional costs and they are not uniform, thus making linkage and comparison with other units and hospitals more difficult. The Körner information system is superior in this regard because it was standardised across all regions in the country.[4] It would be preferable for hospitals to identify and rectify the reasons for inaccuracy of their existing Körner information system. Furthermore, there is provision within the system to expand data capture in order to include items of local interest or needs.

In a recent study at Leicester General Hospital (presented at the meeting of the Medical Research Society, April 1993) we found that completeness of Körner coding (performed by trained clerical staff) was virtually 100%, and recorded codes were correct in 75%, partially correct in 19%, and incorrect in only 6% of cases. These findings are more encouraging than in previous reports, but clearly there is room for improvement. The main source of error was insufficient information given by junior doctors in the document from which coding clerks derived the diagnoses. One way to improve doctors' contribution to clinical coding is to ensure that the appropriate diagnoses are entered on the coding document during the consultant and registrar ward rounds each time a patient discharge is arranged. As patients' details and diagnoses are usually reviewed by the more senior staff just before their discharge, correct entry of clinical data for coding can be achieved quickly and with minimal added effort. Coding clerks could then allocate the appropriate codes to the right diagnoses. Our study of 117 patients found that experienced coding clerks allocated an incorrect code despite thorough and clearly presented diagnoses in only two cases.

B PANAYIOTOU

Manor Hospital,
Walsall WS2 9PS

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Hepatitis C from immunoglobulin infusions

EDITOR,—In the Hammersmith staff round on chronic liver disease due to hepatitis C the discussion group thought it unlikely that the patient, who had common varied immunodeficiency, could have acquired hepatitis C after immunoglobulin infusions: Levi states that "immunoglobulin preparations . . . are treated to render viruses inactive."[1] Immunoglobulin preparations in present use are treated to inactivate viruses, and screening of blood donors for hepatitis C makes the chance of infection less likely. In the early 1980s, however, several commercial immunoglobulin preparations caused outbreaks of non-A, non-B hepatitis, most of which have since been confirmed as having been hepatitis C.[2]

In one of the best documented studies use of intravenous immunoglobulin prepared by the British Blood Products Laboratory with alcohol fractionation led to the development of non-A, non-B hepatitis in 12 patients with agamma-