In addition to individual feedback, all course participants were sent a suggested management protocol. The core of this model is suitable for adaptation for individual practices, or indeed hospitals and other medical institutions.

- Immediately following the needlestick injury the site should be washed thoroughly with soap and water. Exposed mucous membranes should be irrigated copiously with water. Free bleeding may be encouraged but the site should not be sucked.
- The health care worker should be referred promptly to the practice doctor designated to deal with such injuries. This doctor should possess current information about post-exposure prophylaxis in relation to hepatitis B and human immunodeficiency virus (HIV) infection. If necessary the worker may be referred on to the doctor designated within the health authority to manage such injuries. The name and telephone number of this doctor should be available in all practices.
- The doctor responsible for managing the injury must interview the source patient (or the general practitioner responsible for his or her care), to determine the presence of risk factors for HIV or hepatitis B. If there are no risk factors the health care worker should be reassured.
- If risk factors are present, the source patient must be counselled and consent sought for screening for HIV and hepatitis B. Blood samples already obtained must not be tested without the consent of the source patient. If consent is withheld or the source patient cannot be identified, then the injury must be managed as if the blood were infected with HIV and/or hepatitis B.
- If the source patient is known to be infected with hepatitis B, or risk factors are present, then post-exposure prophylaxis should be offered to the health care worker within 72 hours of the injury. Blood should be taken first so that antibody status can be determined subsequently. Workers who have been previously immunized may be given a booster dose while those who have not may commence active immunization with hepatitis B vaccine and be passively immunized with hepatitis B imunoglobulin at the same time. This situation should be discussed with the local public health laboratory. It should be ensured that the local pharmacy keeps hepatitis B vaccine and hepatitis B immunoglobulin in stock.
- If the source patient is known to be infected with HIV, or risk factors are present, the worker must be counselled and an HIV test offered in order that the current HIV status of the health worker be ascertained. Alternatively, blood may be taken and stored for future testing. Current advice on prophylactic treatment from the Public Health Laboratory Service Communicable Disease Surveillance Centre (081-200 6868), or the Communicable Disease (Scotland) Unit (041-946 7120), should be sought and acted upon within two to three hours. Further management of this situation is properly carried out by the health worker's own general practitioner in conjunction with the local HIV specialist team. Further HIV tests at three and six months should be carried out.
- Full documentation of the circumstances of the injury is essential. Attention to confidentiality and the rights of both the source patient and the health care worker are of prime importance. Specialist colleagues should be consulted early in the management process.

As urgent decisions concerning testing and possible preventive treatment may be necessary, it is suggested that appropriate contact telephone numbers are added to the protocol, for example, the director of public health, HIV/acquired immune deficiency syndrome (AIDS) designated physician, and the HIV/AIDS clinical nurse specialist, counsellor or senior health adviser.

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Health checks in general practice: a comparison of two invitation letters

Sir,

With the advent of the new general practitioner contract, more doctors are offering health checks in general practice. For this to be successful it is imperative that effective invitation methods be identified and tested. In one method target patients are identified and written to; attendance rates in response to such invitations have been modest, ranging from 36% to 72%.[1,2] However, letters of invitation vary and perhaps, most importantly, patients may be sent an open invitation to contact the practice to make an appointment or they may be sent an actual appointment time. We carried out a study to compare these two types of letter.

The study was conducted in a rural practice in Norfolk, consisting of four general practitioners with a combined list size of approximately 6500 patients. A total of 872 patients (433 men, 439 women) aged between 30 and 41 years were randomly allocated to receive either an invitation letter with an appointment time or one with an open invitation to make an appointment. Of the 872 patients, 54 were removed from the study because they had left the practice, were not at their address or because their general practitioner felt it inappropriate for them to be invited.

Seventy per cent of the 399 patients given appointment times attended a health check, compared with 37% of the 419 patients sent an open invitation. It was found, therefore, that sending patients appointment times produced a substantially higher attendance rate than sending open invitations (χ^2 = 86.98, 1 df, $P<0.001$). This is in line with results found with cervical cytology[3] and breast cancer screening,[4] and may be due to the greater onus put on the patient to attend when sent an actual appointment time. The range of attendance rates obtained in the present study is similar to those reported elsewhere for health checks in general practice.[1,2] The pattern of results was repeated when the attendance rates were calculated separately for men and women. Sixty per cent of the 193 men sent an appointment time attended for a health check compared with 30% of the 212 men sent an open invitation (χ^2 = 37.83, 1 df, $P<0.001$). Seventy nine per cent of the 206 women sent an appointment time attended for a health check compared with 45% sent an open invitation (χ^2 = 50.30, 1 df, $P<0.001$). These results also show that women were more likely to attend than men when sent a letter both with an appointment (χ^2 = 16.21, 1 df, $P<0.001$) and without an appointment (χ^2 = 10.00, 1 df, $P<0.01$). Finally, it was also found that sending appointment times produced a greater proportion of wasted appointments in relation to the number of invitations sent (14.0% versus 1.7%, χ^2 = 43.95, 1 df, $P<0.001$), thus replicating the findings of earlier studies.[2,3]

These results have important implications for those who rely on letters of invitation to offer health checks and other preventive services in general practice. They show that, as with other invitation methods,[2] the sending of letters is likely

to bias attendance in favour of women. However, they also clearly demonstrate that in order to obtain a reasonable coverage, definite appointment times should be included in invitation letters, although doing so incurs a cost to the practice of a greater proportion of patients failing to attend their appointment without prior notification and so leaving appointment times unfilled. One response to this problem may be to slightly overbook screening clinics.

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Measurement of capillary cholesterol level in hyperlipidaemia

Sir,

The Reflotron (Boehringer) dry chemistry method of measuring capillary cholesterol level is being used more frequently in general practice. This method has been validated for screening large numbers of people by minimally trained staff.[1-3] We used this method to monitor the cholesterol levels of hypertensive patients with hyperlipidaemia who were attending an outpatient clinic in a trial of intensive dietary intervention. It was considered suitable as it would provide patients and staff with immediate feedback of current cholesterol values.

A capillary sample from the patient's finger taken using an automatic lancet and a venous sample from the antecubital vein taken by conventional venepuncture were obtained from 141 patients by two trained nurse practitioners. The venous blood samples were sent to the biochemistry laboratory for full lipoprotein analysis including total plasma cholesterol level. A total of 489 pairs of Reflotron-tested capillary samples and laboratory-tested venous samples were obtained over a 15 month period.

Assessment of the two nurses taking samples from different patients revealed that there was no statistically significant difference between the results obtained by them for capillary cholesterol or venous cholesterol level, or in the difference between the two tests. The Reflotron-tested capillary values were found to be higher than the laboratory tested venous values by a mean of 0.3 mmol l^{-1}, standard deviation (SD) 0.8 mmol l^{-1}.

Over the course of the study, efforts were made to improve the accuracy and precision of the Reflotron results. Staff technique was observed and reviewed on a number of occasions by the company representative. The Reflotron machine was changed after seven months and we participated in an external quality assessment scheme for the Reflotron.

The overall correlation coefficient (r) for the Reflotron capillary cholesterol versus the laboratory venous cholesterol was 0.725. The two Reflotron machines used yielded different values, with the first giving $r=0.809$ and the second $r=0.798$. The first machine had a non-significant bias of -0.1 mmol l^{-1} (SD 0.6), and the second a statistically significant bias of $+0.6$ mmol l^{-1} (SD 0.7, $P<0.001$). Using a difference of 1 mmol l^{-1} between visits to represent a change, 25% of patients at visit 2, 33% of patients at visit 3 and 36% of patients at visit 5 would have been given different information on their progress depending upon whether Reflotron or laboratory results were used to provide feedback. In the majority of cases of discrepant findings results had been obtained from the same Reflotron machine on both occasions.

The Reflotron models used in our study were not sufficiently accurate or consistent to assess changes in a patient's cholesterol levels over time. The results of the study therefore suggest that measuring capillary cholesterol by the Reflotron method is not useful for monitoring long-term responses to drugs and diet in hyperlipidaemic patients.

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Cryotherapy ineffective for ingrowing toenails

Sir,

Ingrowing toenails are a common painful condition. A paper in the *British Medical Journal* in 1985 reported that liquid nitrogen cryospray was a quick, simple and cheap outpatient procedure comparable with other nail sparing techniques.[1] In this study 44 patients received treatment, 20 with a good result. However, in 24 patients the condition recurred within one year; six of these cases responded to a second treatment. Cryotherapy was given for 30 seconds after the ice field had formed and Dermovate-NN® (Glaxo) and aspirin were used to treat pain and swelling.

As a survey in Devon and Cornwall had shown that 58 out of 265 practices had access to liquid nitrogen,[2] I attempted to replicate this study in primary care. Twenty patients were admitted to the study at the Lakeside health centre in London. An 8600 Cryo-Jet® (Cryo-Technology) cryospray device was used but neither aspirin nor Dermovate-NN® were added to the treatment regimen. The first three patients found the treatment unacceptably painful and thus local anaesthetic ring blocks were used for the remaining 17 patients. This allowed very adequate freezing of the soft tissues. Despite this, the condition recurred in 15 out of the 20 patients. In some of these cases nail spicule removal had been carried out. The technique was abandoned and has been totally superseded in this practice by phenolic cauterization of the nail bed.[3] This technique is now regarded as the best method for treating ingrowing toenails although nail bed ablation is part of the procedure.

I believe that cryotherapy spray for ingrowing toenails is painful, ineffective and wasteful and should not be recommended.

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