halothane-free anaesthetic machine. As sensitivity reactions can follow very small subsequent doses of a sensitising antigen, then it would be likely that even if all second and subsequent anaesthetics were administered without added halothane there would be a greater number of instances of UHFH than seem to occur.

I have always wondered whether some other factor might be involved in the production of UHFH. Some years ago two isolated and well-separated instances of hepatitis following repeated halothane anaesthesia occurred in a hospital which I used to attend. I was not the anaesthetist concerned so am unable to go into detail, but in a subsequent general discussion with the operating theatre technician who was present when both the relevant anaesthetics were given I learnt that in the first instance there had been an episode of hypoxia with frank cyanosis during induction of anaesthesia because of difficulty with endotracheal intubation, and that there might have been some minor hypoxia in the second instance. I have often wondered whether ignored or undetected minor episodes of hypoxia during the course of halothane anaesthesia might be the trigger factor in the production of UHFH. It is interesting that Dr Walton and his colleagues record a higher incidence of UHFH in obese patients; as all anaesthetists are aware, in a spontaneously breathing obese patient (especially, for instance, when in the lithotomy position) minor degrees of underventilation can occur which could possibly cause hypoxia in the liver.

I should like to suggest that in any instance of UHFH following repeated halothane anaesthesia, or of fever, prolonged nausea, or anorexia following a primary halothane anaesthetic, it might be rewarding to look closely for any major or minor degrees of hypoxia which might have occurred during the course of the anaesthetic.

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Five separate malignancies in one patient

SIR,—Dr M J Ostrowski (27 December 1975, p 736) recently reported a case of five separate malignancies in one patient, there having been only one other similar recorded case.¹ I should like briefly to add one further case.

A 37-year-old man presented in 1965 with anaemia and vague abdominal pain. After investigation laparotomy revealed an annular carcinoma of the fourth part of the duodenum and a separate jejunal carcinoma 50 cm distally. "Curative" resection was performed. In 1970 he was investigated for painless haematuria and a transitional cell carcinoma of the right renal pelvis was found, for which nephroureterectomy was performed. Twice in 1972 papillary bladder recurrences were fulgurated. In 1973 investigation for lower abdominal pain associated with constipation resulted in a left hemicolectomy for carcinoma of the splenic flexure of the colon. During routine follow-up in November 1975 painless jaundice was noted. At exploratory laparotomy following investigation an inoperable carcinoma of the head of the pancreas was demonstrated. The para-aortic nodes, liver, and entire length of small and large bowel were normal. The patient died on the sixth postoperative day and the operative diagnosis was histologically confirmed at necropsy. There was no recurrence of the four other tumours.

Each tumour fulfilled the criteria of separate primary malignancies described by Warren

and Gates² and later reiterated by Moertel.¹ This patient therefore developed separate carcinomas of the duodenum, jejunum, urothelium, colon, and pancreas. There was no family history of malignancy and environmental history was unexceptional. At no time did the patient have radiotherapy. Primary carcinomas of the duodenum and small bowel are rare in themselves, together accounting for approximately 3% of all gastrointestinal malignant lesions.³ I can find no previous record of duodenal and jejunal carcinomas occurring in the same patient. It is worth noting that with single jejunal tumours the five-year survival is only 15%.⁴

I should like to thank Mr R P M Miles, St Richard's Hospital, Chichester, for permission to describe this case.

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¹ Moertel, C G, *Recent Results in Cancer Research*, vol 7. New York, Springer, 1966.

² Warren, S, and Gates, O, *American Journal of Cancer*, 1932, **16**, 1358.

³ Peterson, H C, and Morrissey, W J, *Journal of the Iowa Medical Society*, 1970, **60**, 696.

⁴ Colcock, B P, and Adamson, N E, *Surgical Clinics of North America*, 1959, **39**, 737.

Hazards of monocomponent insulins

SIR,—Dr Stephen Holt (1 May, p 1075) reports the case of an insulin-dependent diabetic who, on switching from standard insulin to monocomponent insulin, initially required a 40% reduction in dose, then after a four-month interval required another reduction in dose of 23%.

It is well recognised that in many instances when a change to monocomponent insulin from a standard preparation is made the daily insulin requirement falls, but Dr Holt has presented no evidence to prove that the reduction in insulin dose needed by his patient after she had been using monocomponent insulin for four months was in any way related to the use of that form of insulin preparation. I could instance the case of a 48-year-old housewife, an insulin-dependent diabetic for 16 years, whose daily dose of insulin zinc suspension fell rapidly from 80 units to 36 units for no apparent reason.

The occasional dramatic change in required dose of insulin is not necessarily due to a change in the type of insulin given, and frequent clinical attendances are no more obligatory for the diabetic on monocomponent insulin than for any other insulin-dependent diabetic.

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Computer-held medical records

SIR,—Drs R McG Harden and K A Harden (17 April, p 961) make the important point that computers may be used quite inappropriately for solving a problem which could be solved more cheaply in other ways. Punched cards, whether they be organised to hold individual records or individual features, are an excellent method of storing a limited amount of data in a fixed structure.

The computer-held record system which we are using (20 March, p 677), however, stores a

large number of numerical features which vary with time. For patient management it is important to know the exact dose of drugs prescribed, numerical biochemical results, and the blood pressure readings. These continuous variables cannot be easily stored using feature cards, nor can specific information on risk factors, diagnoses, and other features of clinical importance be made available to the clinician at every visit without a computer-held system.

The computer system is also the mechanism for a broadly based research effort into the treatment of hypertension. The analysis of large amounts of numerical research information requires a computer in order to eliminate extensive clerical and "calculating" effort. Only a computer system allows both our management and research objectives to be fully achieved.

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Incidence of dermatographism

SIR,—In his classic investigations of the human skin Lewis¹ reported that in response to a single firm stroke on the skin 25% of the 84 individuals tested exhibited "some swelling" and 5% exhibited a "definite weal." As part of a larger investigation² I had the opportunity to test 104 students and hospital workers (31 male, 73 female, aged 18-58 (mean 29.7) years) for dermatographism. The skin on the volar surface of each forearm was given one firm stroke with a wooden tongue depressor. Dermatographism was considered to have been observed if a weal developed along the line of the stroke within three minutes.

Only one woman aged 23 showed the dermatographic response; one other woman aged 19, showed the flare reaction—that is, inflammation beyond the boundary of the line of the stroke but without weal formation. The woman with the flare reaction had a lengthy history of skin allergies, but the girl with the dermatographic response reported no history of skin ailments.

Since there was only one case of dermatographism (0.96% of the sample) the present data differ from those of Lewis. This difference may be due to any one of the following: (a) Lewis may have administered a firmer stroke to the skin; (b) he may have had a larger proportion of individuals with skin problems in his sample (44 (42%) of the present sample reported having had a skin ailment professionally diagnosed or treated); or (c) his criteria for "swelling" may have been less stringent than mine. These data, along with those of