claims for sick benefit reached a weekly figure of approximately 450% above the seasonal average. Strains of the Hong Kong variant of influenza virus A2 were isolated in the area. Returns from councils of absence owing to illness, believed to be influenza, during December and January were as follows.

Unvaccinated	164	Off sick	41
Vaccinated once only	27	Off sick	7
Vaccinated twice	85	Off sick	nil

From this it will be seen that there is no difference in the absentee rate of those who were unvaccinated from those who received one dose only in November 1969. In the case of those who received two doses there were no absences, and this is statistically significant. Although one cannot draw any firm conclusions because of the small number who received one dose only, and in 23 a reduced dose, it seems prudent to advise an initial course of two doses in the previously unvaccinated and where there has been a significant change in the strain of the A2 virus.—We are, etc.,

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Thromboembolic Complications in Myelomatosis

SIR,—I was very interested in the article by Dr. D. Catovsky and others drawing attention to the thromboembolic complications in myelomatosis (22 August, p. 438). It is becoming apparent that thromboembolic complications in this disease are more common than has been hitherto believed, although the views of Sanchez-Avalos *et al.*¹ that they are nearly as common as the haemorrhagic complications appear to be an over-estimate. This is supported by a number of recent studies in which thromboembolism had not been mentioned, while haemorrhagic complications featured prominently,²⁻⁵ as well as by personal observations, the incidence of haemorrhagic complications being twice as high as that of thromboembolism.⁶

As to the role of amyloidosis in causation of these complications the position appears to be less clear. Although thromboembolic complications are not uncommon in patients with secondary or primary amyloidosis, it is of interest that in myelomatosis associated with amyloidosis thromboembolic complications have not been encountered before, while haemorrhagic complications are relatively common.² This has been supported by the finding of severe haemorrhagic complications in three out of seven patients with myelomatosis associated with amyloidosis, while thromboembolic complications were not observed.⁶ The presence of amyloidosis has not been mentioned by Sanchez-Avalos *et al.*¹ in their cases of myelomatosis with thromboembolic complications. The disturbances in the coagulation mechanism in myelomatosis are very complicated, being affected by numerous factors,^{1,3} but it appears that in this disease there is a disturbance in the proportion of coagulation factors, which may easily shift

the balance either way producing haemorrhagic or thromboembolic complications.

It should also be remembered that patients with myelomatosis are often elderly and bedridden, and thus more liable to thromboembolic complications.—I am, etc.,

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Surgery for Duodenal Ulcer

SIR,—It was at the recent World Congress of Gastroenterology at Copenhagen that my colleagues and I first became aware of Professor I. E. Gillespie's disagreement with our findings. Unfortunately, the data provided in the abstract to which Professor Gillespie refers in his letter (29 August, p. 520) are insufficient to allow us to comment on their numerical significance. Perhaps, however, I could clarify some points that he raises regarding our own work.¹

It is true that ours is not a randomly-allocated controlled trial performed with the aid of computer-based analysis. Such a trial was not our intention, nor could it ever be, for this would mean the random allocation of new ulcer patients to immediate and delayed surgery, and who could ethically deny early surgery to the stenotic or bleeder?

It is misleading to suggest that our observations were "made retrospectively" in the sense that we drew on past information culled from dusty archives. The first group of patients had been seen and graded at frequent intervals over the years at follow-up, and all the details used in our study had been checked repeatedly. In this sense our records were current. It was during this work that we came to realise that many patients wished that "they had had the operation years ago." In a follow-up clinic this is one of the many jolts to preconceived ideas that comes from that salutary but apparently unacceptable backward look. In our case, it led us to the prospective survey of an unselected second group of patients. These were reviewed blindly and were independently assessed both physically and psychiatrically at six-monthly intervals and we reported our findings at 2½ years in those patients who came to surgery.

The pattern was the same as in the original group. Earning was useless in predicting the result of operation. Being unmatched, it is true that two series of patients differed in many ways and were certainly not "homogeneous." But this very fact enhances rather than detracts from the statistical significance of the finding common to both groups—that neither age nor duration of symptoms affects the result of operation.

It is wrong to suggest that ours is a plea for headlong recourse to early surgery. We

have sought to improve the results of surgery by pointing to some long-held misconceptions and to the inadequacies of present methods of selection. To this end, we advocated painstaking assessment, both physical and psychiatric, of every patient from the time of admission to hospital. It follows that, once recognized, the patient with that kind of ulcer which needs surgery could reasonably be offered, as stated in your leading article (8 August, p. 295), "relatively early operation."—I am, etc.,

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REFERENCE

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SIR,—I was interested to read the article (15 August, p. 372) by Mr. H. Burge and others on recurrent ulceration after vagotomy and drainage with electrical stimulation test.

Although in the vast majority of cases the recurrence of ulceration is due to incomplete vagotomy other factors can, in some few cases, account for recurrence. In the 10 cases described by Mr. Burge and colleagues the recurrences were due in all cases to incomplete vagotomy. The authors then infer that by use of the Burge electrical stimulation test all the vagi nerves including the branches can be detected and removed, so making the vagotomy complete. This indeed may be true, but what I fail to understand is how Mr. Burge and his colleagues can find these minute branches even after obtaining a positive response with the electrical stimulation machine. These radicles are virtually impossible to see unless some sort of indicator such as leucomethylene blue dye is applied to the surface of the oesophagus, when the branches will show up as fine blue-black tendrils, which can then be picked up easily and removed, thereby making the vagotomy complete. When recurrence of ulceration occurs following vagotomy it is mainly due to failure to remove these radicles and not the main trunks.

I should like to point out that the application of the leucomethylene blue to detect the vagi and its branches is not a test for completeness of vagotomy—it is an aid to seeking out the vagi branches, and it thereby contributes to the effectiveness of the operation.

In Case 8 of Mr. Burge's series he states that recurrence was due to failure to divide the left gastric artery. Most of the gastric branches of the right or posterior vagus nerve reach the stomach as a plexus surrounding the left gastric artery and therefore it is necessary, in all cases of vagotomy, to divide the left gastric artery. Furthermore unless the left gastric artery is divided it is impossible to detect those branches of the posterior vagus nerve which arise higher up and run down the right border of the oesophagus towards the body of the stomach. Here again unless the leucomethylene blue dye is applied to the oesophagus (after the left gastric artery has been divided) these tiny tendrils are impossible to find. In Case 10 Mr. Burge admits