

Patients enter the trial if they present at or before 32 weeks' gestation. Hypertension is diagnosed if blood pressure readings taken under strictly defined conditions of rest and posture equal or exceed 140/90 on two occasions. An attempt has been made to identify all hypertensive patients attending one maternity department.

Except when diuretics were used, antihypertensive therapy has not affected the final plasma urea measured before delivery. Four patients who received diuretic therapy have been excluded from the analysis.

In 120 women the urea levels at 28, 32, and 36 weeks' gestation have been examined in relation to the outcome of each pregnancy. The average urea at all gestations has been about 15 mg/100 ml and no individual level ever exceeded 45 mg/100 ml. The birthweight of the neonate is on average reduced, the higher the maternal urea. This trend appears at 28 weeks' gestation but is most striking at 32 weeks when a urea level above 20 mg/100 ml is associated with significantly smaller babies. At 36 weeks' gestation the same relation holds if the urea exceeds 25 mg/100 ml. The reduction in birthweight is in part explained by fetal growth retardation *in utero*: when maternal plasma urea is very low (≤ 10 mg/100 ml) there are fewer infants than expected whose birthweights are one standard deviation or more below the mean for gestation compared with a marked excess if the urea level exceeds 20 mg/100 ml.

No perinatal deaths occurred when maternal urea was below 15 mg/100 ml at 28 weeks and 20 mg/100 ml at 32 weeks. But the association between a maternal blood urea raised above these levels and perinatal death was highly significant ($P < 0.0001$).

Small variations in maternal blood urea are therefore a valuable indicator of the prognosis of a hypertensive pregnancy.

We gratefully acknowledge the assistance of Mr. J. R. P. O'Brien and his staff of the Department of Biochemistry, Radcliffe Infirmary.

Randomized Controlled Trial of the Treatment of Moderate Hypertension. M. W. ADLER (*Department of Social Medicine and Clinical Epidemiology, St. Thomas's Hospital Medical School*)

A study has been started in a group practice in Lambeth, London, with the following objectives:

- (a) to measure the effect of antihypertensive treatment on subsequent mortality and morbidity of subjects with moderate hypertension (diastolic blood pressure 90-114 mmHg inclusive);
- (b) to ascertain the number of subjects with hypertension previously unknown to the practice and the number of subjects with hypertension who are receiving treatment;
- (c) to see whether subjects with moderate hypertension are willing to start and continue therapy over a number of years;
- (d) to assess the feasibility of screening and treating for hypertension from a general practice;
- (e) to measure the cost of screening for moderate hypertension in general practice and entering suitable patients into the treatment trial.

The study is confined to men aged 35 to 64 years. Patients are randomly allocated to two groups—treatment and control. It is intended to follow up both groups for five years. The study is being conducted within the context of general practice because, should a reduction in morbidity and mortality eventually be shown, it will be the general practitioner who will be best suited to perform this task.

A Comparison of the Acceptability of a Self-administered Cervical Cytology Test with that of the Standard Service. JANET CARRUTHERS (*Department of Public Health, London School of Hygiene and Tropical Medicine*)

The primary aim of this study has been to compare the acceptability of the cytopipette as a self-administered screening test in the prevention of cervical carcinoma with that of the usual cervical smear test taken by a doctor. It is postulated that a self-administered test, received through the post, may overcome some of the known reluctance of women in high-risk groups to attend cytology clinics. A further consideration has been the possibility that this type of test might prove acceptable to women who are for any reason isolated, such as those living in rural areas.

The study was designed as a randomized controlled trial. The survey population numbered just under 20,000 women living in an urban and rural area of West Sussex. They were randomly allocated according to the area of residence to either the cytopipette group or the control group. The latter were offered appointments for conventional scrape examinations at a clinic run by the County Council or by their own general practitioner. The study was carried out in conjunction with the Health Department of West Sussex County Council using the Council's IBM 360 computer. All specimens were examined in the Department of Cytology at St. Stephen's Hospital, Chelsea.

A concurrent study was carried out by the Centre for Social Research at Sussex University, the main aim being to collect data on the attitudes of responders and non-responders in relation to cervical cytology.

Preliminary analysis of the data showed that the response rate for the pipette group was 52% and for the scrape group 38%. Further analysis showed the pipette to be most acceptable to young women and those living in rural districts. At the present stage of analysis it has not been possible to demonstrate that the pipette is more acceptable than the conventional scrape examination to the high-risk groups. It is suggested that the acceptability of the pipette might be improved by using a personal approach via the agencies of general practitioners, district nurses, or health visitors.

Sociological Factors Affecting Use of Cervical Screening Tests. N. D. RICHARDS and P. J. M. MCEWAN (*Department of Community Health, University of Nottingham, and Centre for Social Research, University of Sussex*)

Social research into cervical cancer prevention has hitherto concerned itself primarily with sociodemographic factors (such as age and social class) which identify

women who underutilize screening facilities. Little or no emphasis has been placed on studying behavioural factors and on the relationship of non-use of cervical cytology with non-use of other preventive health measures. This present study, undertaken as a parallel endeavour to the randomized controlled trial (RCT) reported in the preceding abstract by Carruthers, seeks to rectify this omission and focuses on a wide range of factors which, it is hypothesized, may influence a woman's response to either a self-administered cytopipette screening test or to a doctor-administered cervical smear test.

The methodology for the RCT is described by Carruthers. Nineteen to 20 weeks after the introduction of the study women were classified as acceptors or non-acceptors, according to their response to two postal invitations to take either a cytopipette or scrape smear test; 52.7% of pipette and 50.5% of scrape invitees (in each case $N =$ approximately 10,000) were deemed to have responded, i.e., they used the pipette and remailed it to the laboratory, or they replied indicating willingness to attend the L.A. clinic or their family doctor's surgery to take a smear test. Only 38.0% of the scrape invitees were however subsequently tested. What is meant by an acceptance rate for cervical screening? Is it the percentage who agree to be tested or the percentage actually tested? Further research is needed to identify and explain differences between these two groups.

Random samples of the female population resident in the survey area (Horsham) were interviewed during one of three periods—before any invitations were sent out, after 9 to 10 weeks, or after 19 to 20 weeks. Analysis of this information is now proceeding, but some brief details are given from interviews with a 10% sample of the total female population during the latter period. A unique approach of this present study has been an opportunity to compare acceptors and non-acceptors in relation to their attitudes to cervical cancer and preventive health tests and the reasons they gave for accepting or declining invitations to take cervical tests. In addition to such well-recognized factors as age, parity, social class, and marital status, preliminary analysis also suggests statistically significant differences between acceptors and non-acceptors for a wide variety of psychosocial variables (e.g., frequency of contact with, attitudes to, and satisfaction with health services, perception of susceptibility and severity of cervical and other forms of cancer, fear of contracting cervical and other forms of cancer, and attitudes to and knowledge of preventability and curability of cervical cancer). On this basis there would appear to be distinctive and diverging health attitudes between the two groups. Care is, however, needed in interpreting these findings, particularly since some non-acceptors may be thought of as having valid reasons for their failure to respond (i.e., health reasons, pregnancy, doctor's advice, age, previous test within six months, etc.), and may in fact exhibit far from negative attitudes to cervical screening. Thus it is necessary to analyse the interview data in terms of women who accept, those who have a valid reason for non-acceptance and those without a valid reason for non-acceptance. Classification after 19 to 20 weeks suggests that 52%

were acceptors, 15% were non-acceptors with a valid reason, and 33% were non-acceptors without a valid reason.

Analysis of questionnaire data, currently in progress, will permit a wider definition of response to cervical screening as part of the sociomedical milieu, and in the context of general health behaviour, and also, it is to be hoped, the highlighting of key areas for health educational strategies and intervention in relation to high at-risk groups.

THIRD SESSION (*Chairman: PROFESSOR E. G. KNOX*)

Is Hodgkin's Disease Contagious? L. J. KINLEN, M. C. PIKE, and P. G. SMITH (*DHSS Cancer Epidemiology and Clinical Trials Unit, Department of the Regius Professor of Medicine, Oxford*)

A number of 'outbreaks' of Hodgkin's disease have recently been described in which the disease appears to have shown epidemiological characteristics of a contagious disease, with a long and variable latent period between the 'transmission' of the disease and the onset of symptoms (Vianna *et al.*, 1971, 1972). It has not been possible to assess the statistical significance of these reported outbreaks and the application of Knox's method for the detection of space-time clustering of cases of the disease in the Manchester region has yielded negative findings (Alderson and Nayak, 1971). This latter result might be expected, however, even if the disease is contagious, if its latent period is long. In such circumstances, a better approach, which also does not require the collection of information from control persons, is to use a generalization of Knox's methods which we have previously proposed (Pike and Smith, 1968). This method is, however, critically dependent upon assumptions about the length of the latent period, and if this varies widely from case to case in an unknown way then the test will be weak.

By careful questioning of patients, Vianna and his colleagues were able to establish the existence of direct contacts between patients, and this clearly constitutes better epidemiological evidence of contagion than crude space-time clustering, provided that the statistical significance of the observed amount of contact between the patients can be calculated. Vianna and his colleagues also measured the amount of contact between matched control patients and found it much less than among the Hodgkin's disease patients. The major criticism of this study is that they only chose controls for those Hodgkin's disease patients involved in 'links' with other patients rather than choosing matched controls for all patients with the disease over the period of the study. Some of the problems of choosing matched controls are discussed by Smith and Pike (1972). We are currently engaged in a study along these lines taking all Hodgkin's disease patients diagnosed under age 40 in the Oxford Regional Hospital Board area during the 10 years 1961-70.

The analysis of such case-control data requires special statistical methods and we have recently suggested a technique of evaluating the significance of (a) the total 'effective' contact between all possible pairs of patients