Summary of papers presented at the meeting of the Society for Social Medicine in Bristol, September 1979

A possible progestagenic effect of oral contraceptives on cardiovascular disease
T. W. MEADE, G. GREENBERG, S. G. THOMPSON, Epidemiology and Medical Care Unit, Northwick Park Hospital
The added risk of thromboembolic disease in women on combined oral contraceptives is usually attributed to the oestrogenic component. However, there are indications from previous studies that progestagens may also contribute to this risk. In addition, several studies have suggested that progestagens have metabolic effects which may increase the risk of thromboembolism. Reports to the Committee on Safety of Medicines have been used in a study of possible progestagenic effects. One series of preparations contains 50 μg of ethinylestradiol combined with 1-0, 2-5, 3-0 or 4-0 mg of the progestagen, norethisterone acetate (NEA). There was a significant association between NEA dose and the observed/expected (O/E) ratio of notifications of stroke and coronary disease. There was no such association for venous thrombosis. Another series of oral contraceptives contains 30 μg of ethinylestradiol combined with 150 or 250 μg of levonorgestrel. The higher dose of norgestrel was associated with an increased risk of stroke, but not of coronary disease. Some collateral evidence for the validity of CSM data is that there was a significant inverse association between progestagen dose (of NEA or norgestrel) and unintended pregnancy.

HDL cholesterol: determinants and associations with prevalent IHD. The Speedwell Study
P. M. SWEETNAM, D. BAINTON, I. A. BAKER, N. E. MILLER, MRC Epidemiology Unit, Cardiff
In a pilot study a random sample of 400 men and 100 women aged 45–64 was drawn from the lists of the 16 general practitioners in the Speedwell area of Bristol. Every subject provided a fasting blood sample for estimation of lipids and various platelet function tests, and answered a questionnaire which included measures of angina, history of MI, smoking habit, alcohol consumption and physical activity. Measurements made included an ECG, blood pressure, height, weight and skinfold thicknesses.

There was little evidence that prevalent IHD was associated with lower levels of HDL cholesterol. In males, subjects with IHD had a mean HDL cholesterol of 0.91 μmol/l (SD = 0.46) while those without IHD had a mean level of 0.94 μmol/l (SD = 0.43).

HDL cholesterol was 30% higher in females than in males. It was positively associated with alcohol consumption and negatively associated with LDL cholesterol, VLDL triglyceride and obesity. No association was found with current cigarette smoking, physical activity, or age.

Trends of mortality from malignant melanoma in prosperous populations
J. A. H. LEE, Department of Epidemiology, University of Washington
The death rate from malignant melanoma in England and Wales, Canada, and among whites in the United States of America has risen on average 3% a year since 1950. This is slightly lower than the increase in the incidence. There are large cohort differences, and small or non-existent year-of-death effects. Malignant melanoma has a consistently higher death rate among the prosperous in Britain (in the three occupational studies of the Registrar General after the second world war, the SMR for Social Class I is 143; for Social Class V it is 90). Outdoor tradesmen have no higher rates than indoor ones. Data from Washington State suggest that the distribution is similar in the USA. These findings are important in a period when it may prove necessary to alter refrigeration and air conditioning methods in expensive ways in order to protect the ozone layer of the stratosphere. They also raise interesting sociological questions about the transformation of time trends into cohort differences, and pose the fundamental question of why melanocytes are so unhappy.

Problems of monitoring morbidity and mortality in industry: experience in the United Kingdom heart disease prevention project
H. TUNSTALL PEDOE, R. HELLER, G. ROSE, Epidemiology Department, St. Mary's Hospital Medical School
In a randomised controlled trial of coronary disease prevention, the medical departments of both the intervention and control factory units undertook to notify all deaths and sickness absences of three weeks or more so that coronary episodes could be identified. Deaths were independently notified through the NHS register at Southport. Problems were experienced in identifying these populations at risk because men based abroad or those retired but still paid could be on lists of employees. Despite the enthusiasm of those who collaborated, random checks showed that notification of illness was everywhere incomplete, so a system of periodical systematic examination of all personnel and medical records was introduced. Different systems of recording led to different problems in extracting or corroborating details of illnesses. A questionnaire to the employees remaining at the end of the study confirmed that most coronary episodes had been discovered, but the difficulty in doing so casts doubt on the ability of many employers to monitor the disease-specific morbidity of their employees by current methods.

A study of blood lead and water lead levels in North Wales
H. F. THOMAS, P. C. ELWOOD, E. WELSBY, A. S. ST. LEGER, MRC Epidemiology Unit, Cardiff
A survey of blood lead and water lead levels was conducted on two adjacent housing estates in North Wales, one with lead water pipes, the other with copper. Blood lead levels were measured in adult females and children and the average levels on the lead estate were found to be more than twice as high as those on the copper (1.9 μmol/l vs 0.7 μmol/l). The mean blood lead levels were similar in mothers and children in the same house. Stability of blood lead within subjects was found to be very stable, even when raised, over a period of weeks. The removal of the lead pipes
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as part of a housing modernisation scheme created the situation for a natural experiment. Blood lead levels were monitored in subgroups of the residents. At three months average levels had fallen by 30% and at six months by 50%, reducing them to levels comparable to those on the copper estate.

Cadmium in the environment and cancer registration
R. PHILLIPP, Department of Community Health, Bristol University

In March 1978, the Applied Geochemistry Group of Imperial College, University of London, drew attention to the high soil levels of cadmium in Shipham village, Somerset: a result of former zinc mining. This information was presented to the villagers in January, 1979, and attracted wide publicity.

Cadmium may cause prostatic carcinoma, it is associated with renal and testicular cancers, and the prevalence of gastric cancer is associated with a high soil zinc/copper ratio as exists in Shipham. Cancer registry data were examined to compare the incidence of these cancers in Shipham villagers with the numbers expected when national incidence rates are applied. Readily accessible data were available only for three years. During this time the few observed cases in this small population did not exceed expected numbers. Further studies will examine data from the past 28 years.

Mortality in two random samples of women aged 55-64 followed for 20 years
I. A. BAKER, A. L. COCHRANE, T. HALEY, MRC Epidemiology Unit, Cardiff

Two random samples of women aged 55-64 years were drawn from populations living in the rural Vale of Glamorgan and the industrial Rhondda Fach in South Wales in 1956 and 1958 respectively. Status alive or dead, and cause of death, were known for all 259 women available for follow-up over 20 years. Total death rates were higher in the Rhondda sample and these were due to higher rates of death from circulatory diseases. Baseline measurements for height, weight, and cholesterol were available for these subjects. Total mortality and mortality from ischaemic heart disease and other circulatory conditions increased with increasing value of the index weight/height. The associations of this index and total mortality and mortality from ischaemic heart disease were independent of age and cholesterol and statistically significant at the 1% level of probability. Cholesterol levels were negatively correlated with total mortality and with mortality from ischaemic heart disease in the Rhondda population. There was a weak positive association for cholesterol and ischaemic heart disease in the Vale of Glamorgan population.

A 20-year follow-up of a population sample aged 25-34, including coalminers and foundry workers, in Staveley, Derbyshire
A. L. COCHRANE, F. MOORE, MRC Epidemiology Unit, Cardiff

A 20-year follow-up has been completed of a population sample of men aged 25-34 in Staveley, Derbyshire. The sample was based on a private census, with brief industrial histories, which enabled four groups to be established, 'non-dusty', 'pure coal-mining', 'pure foundry' and 'other and mixed'. The similarity of the mortality rates of the 'non-dusty', 'coal-mining' and 'foundry' groups was satisfactory, but there was a surprisingly high mortality rate in the 'other and mixed' group. This could not be explained on the basis of their industrial exposure, and only to a very limited extent by their smoking habits. It was suggested that there is a small group of uncooperative men, overweight for their height, and heavy smokers who self-select themselves into jobs which are classified in a study such as this as 'other and mixed'.

A better start in life?
A. MACFARLANE, I. CHALMERS, A. ADELSTEIN, National Perinatal Epidemiology Unit, Churchill Hospital, Oxford

While differences between the crude perinatal mortality rates within England and Wales have received much attention in Parliament and the press during the past year, research effort has been directed towards assessing the relative contribution to those differences of variations in the perinatal services and in the population of mothers delivering. Attempts have been made to derive a measure which reflects the relative quality of the services. Having considered these attempts in the light of problems which are encountered when trying to interpret the adjusted perinatal statistics, it was concluded that rather than seek a single summary statistic, it would be more desirable to derive birthweight specific mortality rates. Multiple births and deaths ascribed to congenital malformations should be excluded from these.

Rubella as an aetiological factor in perceptive deafness in European children
W. J. MOORE, Department of Community Health, Bristol University

In 1977 the Commission for the European Communities funded a study of already identified 8-year-old children with an average bilateral hearing loss of 50dB or worse. 2988 eligible children were identified, a prevalence of one per thousand. In 42% of cases the aetiology was unknown, but in 17% it was reported as rubella. The month of birth data showed that more deaf children were born in the winter than in the summer months. Similar seasonal variations in the birth months were demonstrated for all cases of unknown and rubella deafness. Using the United Kingdom data, a relationship was demonstrated between rubella notifications in 1968-69 and the time of possible infection of the mothers of rubella-deaf children (10th week of pregnancy). Similar findings were reported for the congenital unknown group. It was suggested that rubella was the cause of the deafness of some of the unknown group. Rubella deafness is preventable by immunisation and following the rubella epidemic of 1977 at least 600-800 new cases of rubella-deaf children might be expected.

A control trial of health education to promote the uptake of rubella immunisation in schools
S. A. M. JONES, London

An intervention study using a simple health education programme to promote the uptake of rubella immunisation was carried out in seven comprehensive schools with a total of 944 first-year girls. The schools were divided into control and intervention groups. The intervention schools were further divided into a group receiving a short illustrated talk about the effects of rubella in pregnancy and a second group receiving this talk and further discussion with selected girls
thought to be peer group leaders. In the control group
immunisation was offered without talk or discussion.
In the intervention group a total immunisation uptake of
93% was achieved. The highest uptake, 94-4%, was
observed in the schools receiving the talk alone. An uptake
of 89-6% was achieved in the schools receiving the talk and
discussion. In the control group the uptake was 75%. The
difference in uptake between the control and total
intervention groups was highly significant (P <001).
The study shows that high levels of rubella immunisation
can be achieved in schools, using an inexpensive, easily
reproducible method of education.

The management of incontinence in patients with multiple
sclerosis
T. M. THOMAS, O. D. KARRAN, T. W. MEADE, Epidemiology and Medical Care Unit, Northwick Park Hospital
The management of incontinence has been studied in
patients with multiple sclerosis (MS) aged 15-64 and living
at home. Fifty-two MS patients with incontinence were
identified in the London boroughs of Brent and Harrow.
Details of the management of their incontinence were
obtained at interview using a structured questionnaire.
The nurse interviewers were able to make suggestions for
improving the management of 33 of the 52 patients. Only
four patients were managed entirely to their satisfaction and
the interviewers could suggest no improvements. A further
three found their current management adequate. Less than
a quarter had had specialist investigation of their urinary
symptoms.
The various management possibilities which can be tried
are not being made available to all who might benefit from
them. Possible reasons for this include inflexible
organisation of services, poorly disseminated information,
and a tendency to assume that little can be done for patients
with MS.

Old people in institutional care: a longitudinal study of
behavioural problems in hospital wards and residential
homes
D. WILKIN, D. J. JOLLEY, Psychogeriatric Unit, Withington Hospital, Manchester
In the context of the increasing attention being paid to the
purpose of institutional care for the elderly, the results from
surveys of behavioural problems among old people in
geriatric and psychogeriatric wards and residential homes
show that, while hospital wards contain higher
concentrations of non-ambulant, confused and incontinent
individuals, residential homes are catering for many
similarly dependent clients. Successive surveys conducted
between 1976 and 1979 have shown a decline in the
numbers of geriatric patients presenting 'severe' problems
and a slight increase in the numbers of residents in the
homes who presented similar problems. The data suggest
that individuals in residential homes are at least as well as
those in hospital wards who present similar problems. The
results emphasise the need for a reappraisal of the
appropriateness of different forms of institutional care for
old people.

The assessment of disability
E. M. BADLEY, P. N. WOOD, ARC Epidemiology Research Unit, Manchester
There is increasing concern about the problems of the
disabled, paralleled in social medicine by developing
interest in chronic disease. A practical concomitant of this is
a search for policies designed to meet individual needs and
to compensate for disadvantage. Formulation of policy will
be influenced by assessments of need, usually based on
indicators of disability.

Using the theoretical framework on disablement
developed for the World Health Organisation, studies are
being made of the interrelationships between different
types of disease, the impairments to which they give rise,
and the impact of these on activity performance. Factor
analysis of tests of motor capacity recorded in the Harris
survey (1971) revealed four fundamental impairment
factors, reflecting manipulation, arm movement about the
shoulder, strength in lifting, and leg function. The score on
each of these factors was highly associated with disabilities
in relevant activities. The same four impairment factors
were found either alone or in combination in all the
underlying conditions (rheumatological, neurological, and
circulatory), so far studied. These findings have potential
implications for the simplification and development of
disability assessments.

Research on organisations: the problems of obtaining data
about an organisation from its members
H. F. CANTER, Social Research Branch, Department of Health and Social Security
The poor quality of data obtained in a pilot study of
organisational structure was hypothesised to be the result of
either of the inapplicability of the theory on which the
questions were based to the real experiences of the
respondents, or of the respondents' lack of information.
Further work showed that the problem actually lay in the
fact that respondents' knowledge of organisational structure
was embedded in the happenings of everyday life in
the same way that linguistic structure is embedded in a
language. Thus it was difficult for respondents to isolate
the relevant pieces of information from all the other issues
that preoccupied their daily routines, and present them in
the form required by the questions. The problem was solved by
the strategy of teaching respondents to identify the facts
required by a series of rehearsal questions used prior to the
'real' questions.

Variations in the incidence of childhood leukaemia
C. A. STILLER, G. J. DRAPER, Childhood Cancer Research Group, Oxford
Incidence rates for childhood malignant disease in Britain
show little annual variation. However, registration rates for
leukaemia in children have recently been increasing.
The data relating to cases diagnosed during 1968-74
were analysed by year of birth rather than year of
registration because, from what is known of the
epidemiology of childhood neoplasms in general, an
aetiological factor may relate to the antenatal period.
A quadratic relationship between year of birth and
incidence rate was fitted to the data. The results suggested
that incidence of childhood lymphatic leukaemia had fallen

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J Epidemiol Community Health: first published as 10.1136/jech.34.2.150 on 1 June 1980. Downloaded from http://jech.bmj.com/ on September 15, 2023 by
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for successive years of birth during the 1950s and then rose to reach 1.5 times its 1963 value for births in 1973. The concentration of the recent increase in registration rates among the youngest age groups is consistent with such a cohort effect.

It is likely that the recent increase is real rather than an artefact attributable to registration procedures because the analysis allowing for varying completeness of ascertainment suggests that the increase is a cohort effect and because the rates for other childhood cancers do not show the same pattern.

The National Childhood Encephalopathy Study

R. ALDERSLADE, N. S. B. RAWSON, E. M. ROSS, D. I. MILLER, Department of Community Medicine, Central Middlesex Hospital

The contribution of pertussis immunisation to brain damage in young children is hotly debated and there is much public anxiety. Two questions urgently need answers: does pertussis vaccination carry a risk and, if so, how great is it?

The National Childhood Encephalopathy Study is a case-control study aimed at identifying all young children admitted to hospital with certain serious neurological disorders. The history of vaccination and other risk factors is obtained for cases and age/sex matched controls.

Analysis of the first 500 cases has shown no statistically significant difference between the frequency of recent pertussis immunisation in cases compared with controls. Significantly more cases than controls had been vaccinated with measles vaccine eight to 14 days before admission. None was permanently damaged.

The study will permit calculation of the relative risk of vaccination, but the calculation of attributable risk is problematical.

Fetal iodine deficiency and motor performance in childhood

P. O. D. PHAROAH, Department of Community Medicine, Liverpool University

An investigation was carried out in which the motor performance of children born to mothers living in an iodine-deficient region was assessed. The mothers formed part of a controlled trial on the use of intramuscular iodised oil in the prevention of endemic cretinism carried out in the Western Highlands of Papua, New Guinea. Mothers received either iodised oil or placebo saline. Tests involving speed and accuracy of manual function revealed that the children born to mothers given iodine performed significantly better than children of control mothers. The findings indicate that dietary iodine deficiency may lead to a spectrum of subclinical deficits which place the children at a developmental disadvantage.

The house-dust mite and childhood asthma: a controlled trial

M. L. BURR, B. V. DEAN, E. NEALE, E. R. VERRIER-JONES, MRC Epidemiology Unit, Cardiff

A randomised controlled trial of anti-mite measures was conducted in 53 children with mite-sensitive asthma. Twenty-six subjects employed rigorous measures to remove mites from their bedroom and 27 were given a placebo procedure. Peak flow readings were monitored for eight weeks and a final assessment was made 'blind' by a paediatrician. No significant differences were shown in the progress of the two groups. Both tended to improve. Despite a reduction in the weight of dust obtained from the bedding, the mite counts remained virtually unchanged.

A further trial was conducted in 21 children who were issued with new sleeping bags containing no mites. Seventeen had higher mean peak flow readings during a month in mite-free bedding (P < 0.01) compared with a control period. The overall improvement was only modest, however, and some mites had appeared in most of the bedding by the end of the trial.

The sensitivity of regional resource allocation targets to data inputs under RAWP formulae

P. A. WEST, S. R. PALMER, D. L. PATRICK, P. DODD, Department of Community Medicine, St. Thomas's Hospital Medical School

After the 1976 report of the Resource Allocation Working Party (RAWP), revenue budget targets for non-psychiatric inpatient services in each of the 14 regions of England were calculated from data on regional populations, national bed use rates by age and sex (crudely adjusted for the cost of each disease), and regional standardised mortality ratios for each ICD chapter. Sensitivity analysis which replicated 1978–79 revenue target calculations by the Department of Health and Social Security demonstrated that regional revenue targets were largely insensitive to changes in the crudely measured costs of treating each disease. The importance of the use of the SMR was examined by replacing it with alternative mortality indices: the age-specific mortality ratio, the relative mortality index, Yerushalmy's mortality index, and the potential years of life lost index calculated for the same regional mortality data.

The results showed that the introduction of another mortality index in place of the SMR could change the revenue target of a region for non-psychiatric services by as much as 7%. The use of alternative indices largely reinforced the initial redistributive affect of RAWP, shifting revenue to the north of England. Finally, the effect was shown of removing statistically insignificant SMRs from the revenue target calculations: regional targets were insensitive to this refinement.

Waiting times for surgery in Avon

A. H. SNAITH, R. B. BUTTERY, Avon Area Health Authority (Teaching)

Hospital Activity Analysis data for 1977 for six surgical specialties in Avon show that of patients admitted for operations from the waiting list, 64·3% had waited for less than three months, 81.4% for less than six months, and 93.3% for less than 12 months. Of 36 268 principal operations performed, 44% were urgent and 56% waiting list cases.

The waiting time of those who wait six months and 12 months could be reduced by one-half by an increase of 9-5% in surgical capacity, or about five years of normal growth. This will happen only if waiting times vary inversely with surgical capacity. The number of surgeons in England and Wales in all specialties rose by 47% between 1959 and 1976, and the national queue of surgical patients rose by 42%. The average waiting list per surgeon in each of these years was 145 ± 7 days.
It is probable that waiting times as well as waiting lists per surgeon are constant. The effect of increasing capacity is to generate more cases from the reservoir of unmet need in the community, not to reduce waiting times.

The cost of treating breast disease
P. R. SIMPSON, Department of Community Medicine, University College Hospital Medical School

The cost has been estimated of hospital treatment given to a sample of patients with breast disease at University College Hospital. The relevance of this information to an economic evaluation of screening for breast cancer was demonstrated. In particular, it was shown that the cost of hospital care given to the false positives at screening is of great importance.

Estimates based on prices at the end of 1977 showed that the cost of care of patients with benign disease not admitted for excision biopsy was £37; for patients biopsied it was £187.

The estimates were applied to the results of the West London study of breast screening. It was shown that, although at end-of-1977 prices the estimated cost of the test (clinical examination by a doctor and nurse, mammograms examined by two radiologists) for each woman screened was £13.56, the low specificity of the test (87%) and the high proportion of false positives biopsied (47%), were largely responsible for the effect of the test on National Health Service costs being estimated at £25.52 for each woman screened.

Follow-up registers for chronic disease: 10 years' experience with a follow-up system for thyroid patients

For two decades clinicians have recognised the problems created by late-onset complications after treatment for thyroid disease. Several follow-up systems have been introduced. The Scottish system has enabled 1500 GPs working in five different centres to follow up a total of 5500 patients throughout 15 area health boards for 10 years. Non-participation by GPs and patients is very low, and acceptable standards of data collection have been maintained. Prescribing patterns for radiiodine therapy in over 2000 patients demonstrate that attempts at precision dosimetry do not prevent late-onset complications. In a monitored group of 2700 thyroxine treated patients the cumulative incidence at 10 years (estimated using actuarial methods) of inadequate treatment is 14% because of 'non-compliance' and other problems. Recording of causes of death has allowed new studies on possible causal associations between thyroid disease, coronary heart disease, and breast cancer. Cost-effectiveness studies based on registered patients and those not receiving planned long-term follow-up are now possible. Application of this knowledge will be particularly important in developing risk strategies in primary care for many patients with other forms of chronic disease such as diabetes.

Comparison of the effectiveness of a stroke unit and medical units in rehabilitating acute strokes in the elderly: preliminary results
M. GARRAWAY, Department of Community Medicine, Edinburgh University

Elderly patients with acute stroke, who could be placed in the 'middle band' of stroke by having a good prognosis for survival but likely to become functionally dependent, were randomly allocated to admission either to a stroke unit or to a medical unit. The outcome of rehabilitation was measured in an activities of daily living (ADL) unit designed to replicate patients' home situations. A significantly higher proportion of patients discharged from the stroke unit (50%) were assessed as independent compared with patients discharged from medical units (32%). Differences were identified in social work involvement, nursing dependency, provision of aids or adaptations, and utilisation of physiotherapy and occupational therapy. The intensive use of therapy that might have been implied by the creation of a stroke unit did not occur. The distinctive achievement by the stroke unit was the almost universal coverage of physiotherapy and occupational therapy and shorter delays before commencing treatment.

A comparison of oral and inactivated poliomyelitis vaccine in boosting antibody levels
D. BAINTON AND M. FREEMAN, Avon Area Health Authority (Teaching); D. I. MAGRATH, Sheffield and J. W. G. SMITH, National Institute for Biological Standards and Control

As a result of carrying out a prevalence study of antibody levels to poliomyelitis in a random sample of children maintained schools in Avon, a number of children were identified with low levels of neutralising antibody (arbitrarily defined as titre of 1 in 45 or less to any one of the three polio types). These children were allocated at random to receive either oral or inactivated poliomyelitis vaccine as a booster.

A sample of blood was taken in order to measure the effect of the booster on antibody level. The results are presented in summary form below:

<table>
<thead>
<tr>
<th>Mean neutralising antibody titres to poliomyelitis before and after boosting by polio type</th>
<th>ORAL VACCINE</th>
<th>INACTIVATED VACCINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polio type</td>
<td>No. Before</td>
<td>No. Before</td>
</tr>
<tr>
<td>-----------</td>
<td>------------</td>
<td>------------</td>
</tr>
<tr>
<td>1</td>
<td>43</td>
<td>1 in 19</td>
</tr>
<tr>
<td>2</td>
<td>45</td>
<td>1 in 27</td>
</tr>
<tr>
<td>3</td>
<td>84</td>
<td>1 in 15</td>
</tr>
</tbody>
</table>

Both oral and inactivated vaccines were effective in boosting neutralising antibody levels. However, the use of inactivated vaccine resulted in higher titres, particularly for antibody to type 3.