who did not smoke compared with 26% of the non-smokers.

It was found that the smokers started smoking earlier than the experimental smokers. Seventeen per cent of smokers had puffed their first cigarette before the age of 7 compared with 6% of the experimental smokers. When asked why they thought children of their own age did not smoke, all groups gave 'parents advised against it' and 'because of health reasons' as the first two reasons. The non-smokers gave 'that it was a dirty habit' as their third reason and this differed from the other two groups. The smokers viewed smoking much more positively than the non-smokers and most of them felt that smoking was enjoyable, gave more adult status, and that it was pleasant to smoke with one's friends.

The Home Care of the Highly Dependent Patient. P. PASKER, J. S. A. ASHLEY and J. CRESSWELL (*Dept. of Public Health, London School of Hygiene and Tropical Medicine*).

The objectives of the studies discussed in the paper were: (1) to develop nursing dependency as an indicator of use which can be employed both in institutions and in the community to measure the matching of skills to needs; (2) to examine the social and economic circumstances of patients with high levels of nursing dependency who are receiving their nursing care in a non-institutional setting, i.e., at home. The nursing dependency measure had already been validated in hospitals by Barr; it had not, however, been used in a community setting and so had to be adapted accordingly. Validation studies carried out showed that the modified version still remained valid in an institutional setting. A feasibility study was, therefore, carried out in a clearly defined area using this measure as a cross sector indicator of nursing use; there were 320 recipients of local authority health and welfare services and hospital in-patient care. This showed that 44% of high care patients were being nursed at home. As the amount of statutory nursing services which this group received was much less than that given to comparable institutionalized cases, the magnitude of the role played by relatives in support of this group was underlined. A further pilot study was carried out, designed more specifically to test a questionnaire relating to the social and economic circumstances of this high-care group in the community. This study examined in depth 45 high-care cases located on the case loads of home nurses and a geriatric health visitor.

Mortality among Workers at Two Copper Works where Cadmium was in Use. JOAN M. DAVIES (*Royal Marsden Hospital and Institute of Cancer Research, Fulham Road, London*).

In 1955 and 1959 Bonnell *et al.*,^{1,2} reported that numerous workers exposed to cadmium oxide fume in the production of copper-cadmium alloys were found to have proteinuria and/or disabling emphysema. Only two deaths from the renal form of chronic cadmium poisoning appear to be on record in this country, and the respiratory form is considered to be of greater import.

In 1967 Kipling and Waterhouse³ reported an excess of cases of carcinoma of the prostate (0.58 expected, 4 observed) among cadmium workers in another industry; no further reports on this possible association appear to have been published.

During a survey conducted for other reasons death certificates were scanned for all residents of a rural district where two copper works were situated, including one of the factories studied by Bonnell. The opportunity was taken to abstract details of all the 700 deaths from 1948–70 of men described on their certificates as copper workers; deaths during 1941–7 will be added later. Only a minority was likely to have been exposed to cadmium; these could to some extent be distinguished by the occupation descriptions 'caster' or 'furnaceman'.

The series of 700 deaths was analysed by a proportional mortality technique; the proportional distribution of causes of death was generally similar to the national distribution. Seven deaths were ascribed to chronic cadmium poisoning and four other certificates mentioned the condition as a contributory cause. Bronchitis and/or emphysema were mentioned most frequently on the certificates of men described as casters or furnacemen. There appeared to be no excess of deaths from neoplastic diseases, from carcinoma of the lung, or from carcinoma of the prostate (9.8 expected, 10 observed). The expected number of deaths from nephritis and nephrosis was 5.3 and 15 were observed, the excess being concentrated during 1948–56; four more such deaths have so far been noted during 1941–47. Three of these 19 men were described as furnacemen, and these findings suggest the possibility that unrecognized deaths from the renal form of chronic cadmium poisoning may have occurred among this group of workers.

- (1) Bonnell, J. A. (1955). Emphysema and proteinuria in men casting copper-cadmium alloys. *Brit. J. industr. Med.*, 12, 181.
- (2) Bonnell, J. A., Kazantzis, G. and King, E. (1959). A follow-up study of men exposed to cadmium oxide fume. *Brit. J. industr. Med.*, 16, 135.
- (3) Kipling, M. D., and Waterhouse, J. A. H. (1967). Cadmium and prostatic carcinoma. *Lancet*, 1, 730.

SIXTH SESSION (*Chairman: G. BOURKE*)

Malignancy in Crohn's Disease. Mrs. P. PRIOR (*Dept. of Social Medicine, University of Birmingham*).

A series of 295 patients, treated at the General Hospital, Birmingham, for Crohn's disease, has been followed up by one consultant for over 30 years. Periods of observation ranged from 34 years in one case to at least one year for those patients with a recent diagnosis, giving in total more than 4,000 patient-years of observation.

The pattern of malignancy was examined in this series, evidence for which was obtained from the patients' clinical records as well as the index of the Birmingham Cancer Registry.

Expected rates for malignant tumours were computed from cancer registrations and census population figures for the Birmingham region. Expectations, for grouped and individual sites, were obtained and compared with the observed number of tumours at these sites.