

prostitutes not implicated in chancroid transmission and *H ducreyi* genital carriage was not detected in these women. These data contradict reports that genital carriage of *H ducreyi* is common in sexually active women without genital ulcers in Sheffield, UK.<sup>8</sup>

In nearly half of the women in whom chancroid developed after exposure to the index man, sexual exposure occurred only while the man was incubating chancroid. There was no apparent association between the risk of infection to women and the extent of exposure to the infected man. The infectivity of *H ducreyi* for women was 63% (secondary contacts who were infected with *H ducreyi* or had genital ulcers, with one exposure to an infected man). *H ducreyi* infection in women is highly pathogenic; 10 of the 13 infected had genital ulcers. Although the male partner in all contact pairs had cultures positive for *H ducreyi*, only 59% of women with clinical chancroid had cultures positive for *H ducreyi*. This finding could reflect an inherent insensitivity of culture for *H ducreyi* in women or surreptitious use of antibiotics. As the women studied were self-selected, the observed infectivity and pathogenicity are probably maximum estimates. However, on the basis of these data, routine treatment of secondary contacts of men with chancroid is warranted.

The implications of these data for the design of control programmes are somewhat uncertain, because of the small number of proven female transmitters of *H ducreyi* studied directly. However, we tentatively conclude that the majority of female transmitters of *H ducreyi* have clinically evident chancroid. If further studies confirm these findings, screening of women from groups with a high frequency of transmission of chancroid by clinical examination alone would be an effective means of detecting transmitters. Such a strategy would be ideal for chancroid endemic areas where laboratory resources are scarce.

Further investigation of female transmitters of *H ducreyi* and studies of the biology of the *H ducreyi* carrier state in women, the infectivity of women for men, and the existence of a symptomless carrier state in men are required.

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## Nutrition: The Changing Scene

### TRAINING IN CLINICAL NUTRITION: UNDERGRADUATE AND POSTGRADUATE

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THE world's principal health problems remain the infectious diseases and disorders related to nutrition. Skills of assessment and management of nutritional problems are generally agreed to be inadequate among medical graduates in developing and developed countries. The community interest in food and nutrition and the increased level of human nutrition research require clinicians to be much more competent in nutrition than they were a decade ago.<sup>1</sup> Questions then arise about how the medical student, specialist trainee, and practising doctor should learn about nutrition and what should be taught.

#### IUNS AND CLINICAL NUTRITION TRAINING

During the 1970s, the International Union of Nutritional Sciences addressed itself to defining deficiencies in nutrition teaching in medical schools.<sup>2-5</sup> In both developing countries, with overt problems of undernutrition, and developed countries, where nutrition-related disease was scarcely recognised, nutrition in the medical curriculum was usually confined to the preclinical sciences of biochemistry and physiology and, in a limited way, to the clinical disciplines of paediatrics. Even nutritional biochemistry came to be displaced by molecular biology. A food orientation was usually lacking and pharmacological solutions to health problems were impressive and fashionable. The gaps in nutrition learning were not filled, however, because there were few identifiable teachers interested or able to transfer essential clinical nutrition knowledge and skills.

The IUNS committees on medical schools and clinical nutrition have now resolved to seek methods of implementation of nutrition training at undergraduate and postgraduate levels, to establish training programmes in clinical nutrition for selected clinical teachers in medical schools and to alert governments to the need for clinical nutrition training. An educational resources manual and a self-assessment manual of patient problems in clinical nutrition are being prepared. For these undertakings the cooperation of the international clinical nutrition community is being sought.

#### REQUIRED NUTRITION KNOWLEDGE FOR CLINICIANS

The IUNS committees and several national enquiries have established the dimensions of core nutritional knowledge and skills for the clinician.<sup>5-8</sup>

- Food habits and culture of the community
- Nutrition-related diseases
- Food science (chemistry, technology, hygiene)
- Nutrient science (physiology and biochemistry of macronutrients and micronutrients)
- Nutrition assessment, community and individual
  - Food intake (patterns, composition, adequacy of nutrient intake, methodology)
  - Medical history and examination, including anthropometry
  - Laboratory investigation

Preventive nutrition  
Therapeutic nutrition  
Nutritional support systems (oral, enteral, parenteral)

Although emphasis will be different, competence in these topics is relevant for a variety of cultures and health care systems. The hallmark of a good clinical nutritionist will be a thorough understanding of local food culture and the extent to which local disease patterns are nutritionally related: the disciplines of anthropology, sociology, and epidemiology will be of assistance here.<sup>9</sup>

It is not sufficient to know the physiological and biochemical fates of nutrients.<sup>10,11</sup> The chemistry of food, the nature and effects of food technology, and the principles of food hygiene must also be appreciated.<sup>12-14</sup> A knowledge of food service systems in the community, such as "Meals on Wheels", and of hospital catering is also desirable. Techniques of nutrition assessment must be available for the community and also for the individual: the clinician must interact with public health. Of all the skills required for assessment of the individual, that of establishing food intake is the most neglected by doctors. Confidence comes through a knowledge of food intake patterns, food composition (with tables available for reference), and recommended nutrient allowances (with qualifications in application to individuals rather than the community). Since time is often at a premium, efficient techniques for interviewing and recording food intake data are mandatory: a meal and snack oriented approach with identification of critical foods is usually the most expeditious method. The medical history and examination will elicit information that will not only identify the nutritional problem, but will also permit monitoring. Anthropometry, especially weight-height relations, is part of the examination. Laboratory investigation may include haematology, chemical pathology, and immunology.<sup>15,16</sup>

Although the bias of clinical work is towards disease identification and management, opportunity frequently presents and can be sought to prevent illness. This preventive action will involve counselling high-risk individuals, such as the socio-economically disadvantaged, pregnant women, institutionalised people, the elderly, those on medications, food faddists, and alcohol abusers, about food intake and giving advice wherever possible about a prudent diet to reduce the risk of chronic illness (eg, obesity, atherosclerotic vascular disease, neoplastic disease, nutritional anaemia). Required skills are in communication and teaching.

Therapeutic nutrition is necessary when metabolic disturbance or disease requires alteration of the usual food intake, for example, reduced protein intake in uraemia, the inclusion of additional polyunsaturated fat in

hyperlipidaemia, and reduced total fat intake in Crohn's disease. The degree of selective nutrient change contrasts with nutritional recommendations for the community at large. As far as possible, clinical nutrition seeks to approximate the patient's diet to the more prudent version of a particular food culture, for example, diets high in carbohydrate, high in dietary fibre, and low in fat in the management of diabetes and diets with low sodium/potassium ratios, low in alcohol, and avoiding obesity in the non-pharmacological management of mild to moderate hypertension.

Much impetus has been given to clinical nutrition by the advent of better nutritional support systems, oral, enteral, and parenteral. The technology of nutritional support has in itself enticed the modern medical graduate back to nutrition. In the hospital setting, the consequences of nutrient deficiency and their rectification have been more apparent. The nutritionally reversible components of wasting disorders are being defined.

#### NUTRITION TRAINING IN MEDICAL SCHOOLS

Most medical courses have content arranged into preclinical and clinical subjects, with nutrition potentially a part of any of these subjects. With problem-based curricula, in which basic medical science and clinical teaching are combined, nutrition is not confined to the disorders of any one age group, community group, or organ system. Moreover, there are important topics related to food, such as composition and nutrient allowances, which do not fit into any existing part of most medical curricula.

There is a consensus, most recently expressed by the British Nutrition Foundation in the report of its task force on clinical nutrition, that at least one academic unit in a medical school should assume responsibility for nutrition training.<sup>8</sup> Such a unit would coordinate teaching across the disciplines and ensure that any gaps were filled. It would also need to guarantee the clinical nutrition training of its own staff.

The ultimate success of nutrition training as it affects professional practice will depend not only on knowledge and skill as a diagnostician, therapist, and educator, but also on an ability to review critically a rapidly changing knowledge base, to eradicate personal nutritional myths, prejudices, and value judgments, and to work as a member of a health care team, including nursing staff and dietitians.

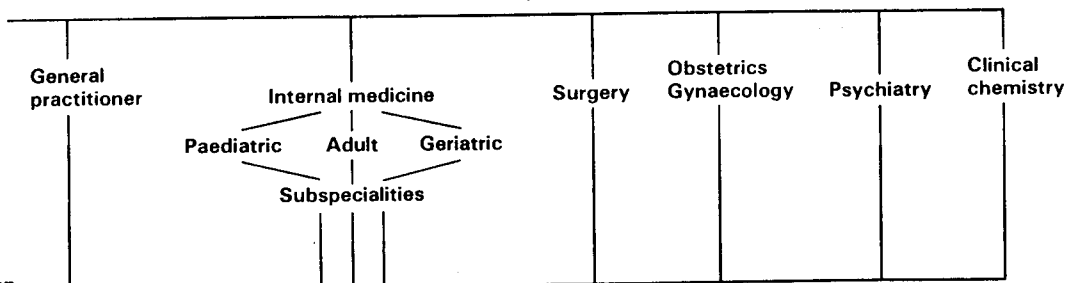
#### CLINICAL NUTRITION AND THE SPECIALIST<sup>17</sup>

There is general agreement that, as with undergraduate training, clinical nutrition should be incorporated into or

1-2 years  
General internship or Early residency

3-5 years  
Specialisation

1-2 years  
Clinical nutrition



Postgraduate clinical nutrition training.

should supplement specialist and subspecialist training. There can probably never be a pure clinical nutrition specialty, since the requirements to interact with age and organ-based disciplines are too onerous. However, clinical nutrition may be the dominant pursuit for many specialists. Extensive postgraduate courses in clinical nutrition are thus required. So far, outside the USA only a few medical units can be expected to provide necessary teaching expertise and training facilities. These units must be encouraged to organise international clinical nutrition fellowship programmes. The training should include both bedside and laboratory work as well as exposure to related research. The medical authorities in these and other countries must be persuaded to support appropriate candidates for clinical nutrition training—ie, those having one of certain specialties as outlined in the figure. For those who will have such an extensive supplementary training in clinical nutrition, acknowledgement of a combined specialty interest may be useful—eg, gastroenterologist/clinical nutritionist.

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## Public Health

### WHO MEETING ON AIDS

AFTER a WHO meeting on acquired immune deficiency syndrome, held in Geneva on Nov 22-25 under the chairmanship of Dr W. Dowdle (CDC, Atlanta), the following statement was prepared:

Cases of AIDS, first identified in 1981 in the USA, have now been recognised in several other parts of the world. In some countries, the pattern of transmission does not seem to correspond with that found among patients from the USA and Western Europe, where the high-risk groups have been homosexual men with many partners and intravenous drug abusers. In cases from the Caribbean and Equatorial Africa, the ratio of female patients to males is much higher than that in the USA and Western Europe; the mode of transmission appears to be different.

AIDS is a public health problem in a number of countries and has international implications. More than 3000 cases have so far been identified according to the definition established by the US Centers for Disease Control in Atlanta, Georgia, and adopted by European investigators at a recent meeting in Aarhus, Denmark. According to this definition, AIDS is characterised by a severe cellular immune deficiency, which leaves the body defenceless against unusual opportunistic infections such as *Pneumocystis pneumonia* and rare malignant diseases such as Kaposi's sarcoma.

Of 2753 patients so far identified in the USA alone, 1126 have died—a 41% fatality rate. Most of the known cases have occurred in North America and Western Europe, but cases are now appearing in a number of developing countries and elsewhere.

The epidemiological pattern is consistent with transmission by an agent which is most probably a virus. The cause remains unknown, but intensive efforts to identify it are being undertaken by many laboratories around the world. The consensus among the scientists was that the agent persists in the blood and other body fluids.

The predominant mode of transmission in industrialised countries is by sexual contact, mainly among homosexual men. Transmission has also been reported via certain blood coagulation factors and contaminated needles used by drug abusers, accounting for 20% of cases. (The blood coagulation factors include factor VIII and factor IX, which are used for the treatment of patients with haemophilia A.) In a few cases, AIDS appears to have been trans-

mitted to newborn babies, probably at the time of birth, and also to patients receiving blood transfusions.

So far there have been no documented cases of AIDS among health care or laboratory workers with no other risk factors who have had known exposure to patients with AIDS. However, well-established precautions which have been recommended by WHO for treating patients with viral infections such as hepatitis B, and handling specimens from such patients in the laboratory, should be rigorously enforced in AIDS cases.

Further specific laboratory tests are needed to define precisely the mode and extent of spread of this newly described syndrome. Ways of reducing transmission of AIDS include: information directed at high-risk groups; self-exclusion from blood donation of those who belong to these groups; strict discipline in the use of needles and syringes; and strict adherence to the WHO standards for the production and control of biologicals and blood products.

There is no evidence for transmission of AIDS by the currently available plasma-derived hepatitis-B vaccines, nor by immunoglobulins which meet WHO requirements.

WHO is requested to support and coordinate research in different epidemiological settings. This will make an important contribution to the understanding and ultimate control of the disease.

### NATIONAL RUBELLA CAMPAIGN

In the last rubella epidemic of 1978-79 120 babies were born damaged and 1400 rubella-associated pregnancies were terminated. In interepidemic years about 25-35 children are born damaged. In 1982 83% of schoolgirls aged 10-14 accepted rubella vaccination under the schools immunisation programme. A national rubella campaign was launched this week to eliminate congenital rubella by bringing uptake of vaccination by schoolgirls to as near 100% as possible and to encourage women of childbearing age to be tested for immunity to rubella and to be vaccinated if found to be unprotected. The three-year campaign is organised by the National Rubella Council, made up of representatives from the Department of Health and Social Security, the Health Education Council, and eleven voluntary organisations concerned with physical and mental handicap. All local authorities have been asked to participate in the campaign. They have been requested to consider arranging serological testing facilities and supplying vaccine free to employers willing to use their own occupational health facilities to promote immunisation.