Carpeting Hospital Wards

Florence Nightingale wrote in 1859 that "For a sick room a carpet is perhaps the worst expedient which could by any possibility have been invented. . . . A dirty carpet literally infects the room." More recently this view was quoted by a modern American hospital hygienist, Bertha Y. Litsky, who if not frankly opposed to wall-to-wall carpeting in hospital wards was at least suspicious of its sanitary advisability. Yet such carpeting has been coming steadily into vogue for some years. Compared with any kind of polished floor it is much quieter, safer for any patient liable to slip, preferred by nurses’ feet, and variously described as more attractive, less institutional, and cosier. Possible drawbacks are cost, the greater effort required to push beds and trolleys around, and staining by spillage (though in fact carpets made of water-repellent synthetic fibre are apparently not easily stained and are easily cleaned). The balance of these factors seems decided in favour of carpeting, but this balance would be reversed if it were shown that there was any greater hazard of infection from air-borne particles of dust.

Most investigators have concluded that there is no such hazard; indeed tiled or other polished floors have suffered by comparison. Shaffer and Key6 did a long series of slit sampler counts of the air of three pairs of wards in an American hospital, respectively tiled and floored with wool and acrilon carpet, and obtained lower counts, both total and of Staphylococcus aureus, in the carpeted wards. Rylander et al.3 compared wards in Stockholm with a vinyl plastic floor and a synthetic needlefelt carpet; the latter yielded fewer bacteria, and their numbers were more reduced by vacuum cleaning than those on the tiled floor. Air counts were also lower, but "sizeable walking activity" raised these above the level from the tiled floor. Ayliffe et al.4 compared two surgical wards in a Birmingham hospital, one with vinyl flooring, the other covered with carpeting consisting of short nylon fibres on a water-resistant non-absorbent PVC base. Slit sampler counts were somewhat lower in the carpeted ward, and counts from contact plates applied directly to the floor were substantially lower, 5-1 colonies/cm² in contrast to 16-0 from the tiled floor. Moreover, the frequency of postoperative sepsis, particularly that due to Staph. aureus, though low in both wards, favoured the carpeted ward insofar as results from 569 operations in only four months can be rated as significant; the authors admit that this part of their study may need to be continued for far longer.

Other advocates of carpeting who have studied floors bacteriologically are Beattie5 and Pilsworth.8 The opponents or doubters include firstly Litsky, already quoted, who found a rapid build-up of bacteria in carpets and that walking on them and vacuum cleaning caused higher air counts than those from tiled flooring—she used what must have been an enormous sampler with a throughput of 1000 ft³/minute. Secondly, Anderson7 at the Communicable Disease Center, Atlanta, U.S.A., also observed a build-up of bacterial count in carpet for four weeks and found that vacuum cleaning reduced this little. He suggested that further investigations were needed to develop improved, economical techniques for maintaining hospital carpets as bacteriologically clean as possible.

Clearly differences in sampling technique go far to explain these discordant results. Low counts from carpets have been obtained by surface sampling and high by punching out a small area and dispersing its bacterial content in a blender. Discrepancies in air counts may also have a technical explanation. A commonsense view would be that the main bacterial population of a carpet is at the base of its fibres and is derived mainly from dust on shoes. Admittedly potential pathogens exist in such material, but they very rarely cause infection and anyhow are ubiquitous. The particulate matter most to be feared in hospitals is derived from bed clothes contaminated from the skin, secretions, or discharges of the patient in the bed. When infected dust of this kind is deposited on a polished floor it is easily disturbed by air currents. It may well be less mobile on a fabric, and be more thoroughly removed by vacuum cleaning—which of course should be carried out regularly, thoroughly, and with well-designed apparatus.

Weather and Eclampsia

The weather provides a topic of perennial comment, perhaps particularly in Britain. But with the marked decline of eclampsia here, no doctor could have detected in Britain the close relationship recently reported between this disorder and the weather.8 This rather surprising connexion was made in a study in Columbia confirming a local impression among obstetricians that eclampsia is more frequent on cool days.

All 156 women resident in the city of Cali who were discharged with a diagnosis of eclampsia over the five-year period 1966-70 were identified in the records of the one maternity hospital; a control group of 465 women represented a 1-in-50 sample of normal hospital deliveries, from which elective admissions were excluded. Details about these women and their deliveries were linked with data relating to rainfall, temperature, and relative humidity on the day of admission and also on the combined three days before admission.

It was found that the daily incidence of eclampsia per 1000 hospital deliveries rose with increasing relative humidity and with decreasing maximum temperature. Indeed there was more than a five-fold difference between the eclampsia rate on admission days with the extremes of maximum temperature
(25°–32°C) or relative humidity (64%–84%). Because of the close correlation between these two variables, it was not possible to separate their effects on the eclampsia rate. Direct account could not be taken of domiciliary confinements in the city, though there was reason to believe that all eclamptic women were admitted to hospital.

It could be argued, perhaps, that cool or humid days might persuade some normal women to stay at home to deliver while those with eclampsia would continue to enter hospital—thus creating the impression in hospital that the eclampsia rate was higher on such days. However, this effect of coolness and humidity was considered to be real, since even a mild degree of coolness had an appreciable effect on the eclampsia rate, whereas rainfall had none. The absence of any significant correlation between humidity or temperature and blood pressure or oedema suggests that the effect was not mediated by vasospasm or fluid retention. Moreover the effect of cool weather was too large to be explained by a reduction in sweating, with a consequent increased likelihood of eclampsia through persistence of fluid retention. The nature of the connexion between eclampsia and the weather therefore remains obscure.

The immediate public health implications of the findings are minimal, but clearly it would be of interest to see if the relationship can be confirmed in other parts of the world. Meanwhile, it seems that eclampsia may have to be added to that varied group of conditions which are affected by the weather: which in addition to respiratory infections, includes ischaemic heart disease, peripheral vascular disease, systemic lupus erythematosus, and arthralgia—not to mention emotional states.


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**Management of Recurrent Head and Neck Cancer**

The reappearance of a neoplasm following potentially curative therapy by radiation or surgery is conventionally described as a “recurrence,” whether it is residual tumour left after ineffective resection, regional metastasis, or regrowth at the initial site after radiotherapy. Some tumour areas in the head and neck carry a markedly better prognosis than others, so overall recurrence rate will vary with the total experience of the surgeon as well as the distribution of the tumours he is treating. Despite the failure of the initial treatment, some patients can still be cured of their neoplasms; others can be offered only palliation of varying duration and effectiveness. The choice of this second line therapy and its successful accomplishment require considerable experience and adequate supporting facilities if the patient’s sufferings are not to be increased. This must of necessity mean a degree of specialization, for such knowledge can be gained only by the care of large numbers of patients.

Inadequate surgical excision of the original tumour can rarely be rectified by a second operation. Radiotherapy has little to offer in the enhancement of cure rates in these patients but may have some palliative value, particularly the increasingly popular fast-neutron therapy.

Williams1 has recently emphasized the varying salvage rates for recurrent tumours in differing sites of the head and neck, and though his personal series was small—144 patients treated in six years (about the number seen by most large centres in less than a year)—his conclusions were apt. Tumours arising in areas inaccessible to radical excision are rarely cured if they recur after initial therapy—usually radiotherapy alone or in combination with an attempted radical excision. Nasopharyngeal carcinoma and tumours of the middle ear, base of tongue, and paranasal sinus are examples of this problem. On the other hand, secondary total laryngectomy or the technically more demanding pharyngolaryngoesophagectomy yields a generous proportion of long-term cures if carried out adequately and early in the recurrence—it is sometimes forgotten that there are degrees of recurrence and technical limitations to even the most enthusiastic surgeon’s expertise. Extension to the skin and the need for its replacement require knowledge of the proper techniques of reconstruction, for there are inherent difficulties in the application of standard plastic procedures to previously irradiated tissues.

The problems in carrying out salvage procedures for tumours recurring in the oral cavity, where radiotherapy is invariably used as the initial mode of treatment, have been discussed recently by Harrison.2 Adequate excision is often possible, though it is of limited value if unaccompanied by effective rehabilitation of swallowing. Total glossectomy is a formidable procedure, even for young patients, while replacement of the whole or part of the mandible may be impossible after radiotherapy and suggests a need for urgent reappraisal of the initial therapy in these tumours.

Recurrence rates always reflect not only the effectiveness of the initial treatment but the incidence at sites, such as upper jaw and middle ear, which carry a very poor prognosis. Undoubtedly a combination of well-planned and carefully executed salvage surgery will result in the cure of some patients with recurrent disease arising at an advantageous site. Invariably the price to be paid will be high, not merely in money but, more important, in time and hardship. In the frail and the elderly this price may be too much. Perhaps a more rewarding approach would be better planned and executed primary treatment.


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**Open Minds for Open Medicine**

Campaigning is under way for the Open University to start a medical faculty, in which mature students would pursue a part-time course at their own pace for some years and then, after passing examinations, become full time for their clinical training. Their medical qualifications would be no different from those granted by the existing medical schools in Britain.

On the face of it this seems an attractive proposition—a welcome supply of home-grown, dedicated doctors, often with previously learned skills, perhaps more interested in care than cure, produced at little expense; frustrated citizens turned, after character-proving struggle, to fulfilment; and a new use for the Open University’s technical virtuosity. These were some of the benefits claimed at a conference on “Open Medicine and its Implications” held last weekend in Liverpool and organized by the Open Medicine Trust.1

Many people at the conference clearly thought that an Open University medical faculty was technically possible; but there