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SUPPLEMENT

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CORRESPONDENCE

Correspondents are urged to write briefly so that readers may be offered as wide a selection of letters as possible. So many are being received that the omission of some is inevitable. Letters must be signed personally by all their authors.

Contamination of sterile fluids

SIR,—Hospital microbiologists have become increasingly disturbed at the closure of pharmacy departments responsible for the preparation of non-injectable fluids. The high cost of modifying pharmacies or of buying commercially prepared fluids is taking away funds needed for the care of patients.

The organisms responsible for infections acquired from "sterile" infusion fluids are Gram-negative bacilli (for example, *Pseudomonas aeruginosa*, *Klebsiella/Enterobacter* spp).[1] These are able to grow at room temperature with minimal nutrients, are easily killed by heat at 65-70°C, die rapidly on drying, and, under normal circumstances, do not spread in the air. They are rarely isolated during routine bacteriological air sampling but are found in moist environmental sites, though not all of these are relevant because of the absence of transfer of the organisms to infusion fluids.

The organisms present in the "dry" environment are irrelevant to infection acquired from "sterile" fluids contaminated during the manufacturing process. Most of the organisms in the air of a pharmacy (for example, *Staphylococcus epidermidis*, diphtheroids, and occasionally *Staph aureus*) are disseminated by its occupants, mainly from the skin, and do not grow in non-nutrient fluids. In an experiment 11 bottles containing 500 ml of sterile water were opened for five minutes while several people exercised in a room. An average of less than one organism per bottle was isolated, while air-sampler studies made at the same time showed 80 organisms/ft^3 (2825/m^3), three to four times higher than the numbers usually found in a busy ward. Such minimal contamination of non-injectable fluid which has yet to be sterilised cannot have any importance as a cause of infection, and expensive measures to reduce it still further must be considered an unnecessary ritual. Although we would not accept dirty working conditions or poor personal hygiene, it seems to us that the need for such measures as mechanical ventilation systems, weekly disinfection of walls and ceilings, etc, has been overemphasised in relation to their potential value in protecting patients against infection.

Sterilisation and the maintenance of sterility are by far the most important of the processes in the preparation of sterile fluids. Money available should be spent in training operators and providing reliable recording systems and good maintenance rather than on mechanical ventilation systems. Routine bacteriological monitoring of the air and surfaces has generally been discontinued in hospitals.[2,3] In view of the normal variation in counts and the lack of evidence of infection from skin organisms in fluids there seems to be little point in re-introducing these techniques into hospital pharmacies. The only relevant bacteriological monitoring needed to ensure absence of gross contamination, at least until more efficient containers and closures are produced, is of the fluid in the bottle before sterilisation and of the autoclave "cooling water."

The argument that similar standards are required in hospital pharmacies as in industry is not acceptable if the standards serve no useful purpose and are expensive. This applies particularly to non-injectable fluids and small-scale aseptic dispensing. For the latter an efficient laminar flow cabinet is all that is necessary and not a plenum-ventilated room.

We accept that process control is important and that improvements are required in many hospital pharmacies (as in operating theatres, wards, kitchens, laboratories, etc) but suggest that expensive changes should not be introduced immediately unless they have a proved clinical or bacteriological value. In our view it is important that there should be regular communication between hospital microbiologists and pharmacists, both locally and nationally.

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[1] *Microbiological Hazards of Infusion Therapy*, ed I Phillips, P D Meers, and P F D'Arcy. Lancaster, MTP Press, 1976.
[2] *Infection Control in the Hospital*, p 167. Chicago, American Medical Association, 1974.
[3] *Control of Hospital Infection*, ed E J L Lowbury, *et al*, p 26. London, Chapman and Hall, 1975.

Maintenance treatment of duodenal ulcer with cimetidine

SIR,—Your leading article (3 June, p 1435) gives an excellent evaluation of methods of prescribing cimetidine in the treatment of duodenal ulceration, but we think that the impact of this new drug on the indications for surgery should also be considered. The recommendation that treatment should stop at the end of a year is not in dispute, but for many patients perhaps the more important question for the prescriber to ask is, "Should I start?" Notwithstanding the beneficial effects of cimetidine in patients with relapsing and disabling dyspepsia, there seems little point in starting treatment if the pattern of disease is likely to re-emerge after a year. In