overall equivalence of costs for the CST and generic groups.

Burr's penultimate point relates to the four broad principles of cost evaluation which underpin the Greenwich study and our other work: to be comprehensive in coverage; to examine inter-patient and other variations; to make like-with-like comparisons; and to examine the links between costs and patient outcomes (see Knapp, 1995). We fail to understand how principles of this kind – which will be familiar to evaluators of all persuasions – can obscure more than they illuminate. Indeed, we would be horrified were policy or clinical practice to be based on economic or other evaluations which departed *significantly* from them. Principles of this kind need discussion, but Burns' point is a red herring in the context of the Greenwich study.

We therefore reject Burns' final point that judgement was not exercised in the conduct of the Greenwich evaluation. The "serious misunderstandings" to which he refers will only arise if people misread our paper.

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Intramuscular injections in the anticoagulated state

SIR: We present the case of a 34-year-old schizophrenic man admitted to the general hospital as an emergency having been discovered unconscious at his hostel. It became evident that he had suffered hypoxic brain injury secondary to the aspiration of vomitus possibly as a result of alcohol and recreational drug misuse. In the course of his management on ITU a central line was required which led to thrombosis in the subclavian and jugular veins necessitating anticoagulation, first with heparin and then warfarin to continue for a three month period.

The liaison psychiatry team were asked to assist in his management as he had suffered a relapse of his schizophrenic illness characterised by paranoid delusions and third person auditory hallucinations.

Prior to these events he had been maintained well on Clopixol 400 mg every four weeks given by intramuscular injection in the thigh or buttock by his GP. Given that he had had his most recent injection two days prior to admission and was now compliant with oral medication it was possible to control his relapse effectively with oral trifluoperazine.

Our dilemma arose when the issue of the next depot injection of Clopixol was discussed with the hematology team managing the anticoagulation. They felt that the intramuscular route was contraindicated. While it presented no management problem to continue with the oral route it raised the issue for debate.

We asked the drug information services at the general hospital and the psychiatric hospital for advice. They were unable to provide any referenced advice except verbal guidelines from the companies manufacturing Clopixol and warfarin that the intramuscular route was relatively contraindicated but could be used provided that the INR (International Normalised Ratio) was in the therapeutic range and additional precautions were taken to arrest bleeding at the injection site. No alteration to the bioavailability of the drug was to be anticipated.

A review of the literature revealed few direct references to this issue. *Wintrobe's Clinical Hematology* (1992) makes a general statement about the wisdom of avoiding interventions such as intramuscular injections in anticoagulated states (Lee *et al*, 1992). Marder (1979) makes similar general statements. The data sheets for the common neuroleptic intramuscular depot preparations, i.e. Haldol, Modecate, Clopixol and Depixol give no precautionary advice, nor do the data sheets for the contraceptive Depo-Provera (ABPI, 1994–95).

It appears to us from our exploration of this area that the rationale for the contraindication of intramuscular injections in the anticoagulated state is far from clear. It seems to be one of presumed common sense and practice observed. With increasing numbers of people being warfarinised for conditions such as non-rheumatic atrial fibrillation, and the wider use of depot neuroleptics in the long term mentally ill managed in the community, we would welcome further discussion to clarify the safety of the intramuscular route in the anticoagulated state.

ABPI Data Sheet Compendium 1994–95.

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