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Plastic insulin syringes

SIR,—Nine years ago Greenough *et al* pointed out how seldom diabetics became infected by injecting themselves daily with insulin using the same disposable syringe on several occasions, sometimes for several weeks, simply by covering the needle (attached to the syringe) with its cap and leaving the syringe in the refrigerator.¹ They found no evidence of infection even when the syringe was used for up to two months.

In the correspondence that followed Oli, from Nigeria, reported that his diabetics, who could often not afford glass syringes, used their plastic syringes on average for a month, but as few had refrigerators he advised them to put syringe and needles in a clean covered container or pot in a hole in the ground, and since 1974, when he started the diabetic clinic, he had seen no infections.² In 1985 Bloom detailed the advantages of plastic over glass syringes for insulin injections,³ and two years later, after a long campaign by the British Diabetic Association, they became available on general practitioners' prescriptions.

Drs W D Alexander and R Tattersall have now pointed to the great and unnecessary expense of diabetics using plastic syringes once only. Having run two separate diabetic clinics in London weekly for many years in the past, I know that patients use their disposable plastic syringes over long periods without any trouble. It does seem that here, where the same diabetic person uses the same syringe daily, the advice of the Department of Health and Social Security and the National Pharmaceutical Association to use these syringes only once is unnecessary and costly to a National Health Service trying hard to economise.

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1 Greenough A, Cockcroft PM, Bloom A. Disposable syringes for insulin injection. *Br Med J* 1979;ii:1467-8.

2 Oli JM. Disposable syringes for insulin injection. *Br Med J* 1979;iii:273-4.

3 Bloom A. Syringes for diabetics. *Br Med J* 1985;290:727-8.

SIR,—Drs W D Alexander and R Tattersall (26 March, p 877) claim that insulin preparations are self sterilising because they contain a preservative. That this is not universally so has been described previously^{1,2} and is further illustrated by the following event.

A 43 year old diabetic was admitted to hospital with multiple large subcutaneous abscesses of the thighs and buttocks, which had developed over three weeks at the sites where she injected insulin. The abscesses were incised under general anaesthesia, and the pus thus liberated yielded a heavy growth of *Streptococcus faecalis* on culture.

The patient's insulin phials were examined bacteriologically 12 days later. Both phials in current use yielded no organisms by direct plating on solid media, but one (a mixed insulin zinc suspension containing methyl-*p*-hydroxybenzoate as preservative) yielded *S faecalis* and *Bacteroides fragilis* when injected into blood culture media.

Small numbers of organisms can thus survive for prolonged periods in some insulin preparations, and those which contain methyl-*p*-hydroxybenzoate should not be regarded as self sterilising. Good practice dictates that any multidose container of solutions for injection should be entered only with a sterile needle; otherwise skin and potentially pathogenic environmental organisms may be

carried into the phial and persist or multiply to form a reservoir of infection.

Plastic insulin syringes cannot be re-sterilised in the home, so logically they must be used only once and then discarded if episodes of this nature are to be reliably prevented, especially when using insulin preparations preserved with methyl-*p*-hydroxybenzoate.

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1 Collins BJ, Spence BK, Richardson SG, Hunter J, Nelson JK. Safety of reusing disposable plastic insulin syringes. *Lancet* 1983;ii:559-61.

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Adult epiglottitis

SIR,—We were surprised at the antibiotics chosen for the initial blind treatment of the adult with epiglottitis described by Dr Shaheen Mehtar and others (19 March, p 827) (benzylpenicillin and erythromycin), particularly as the patient's condition was severe enough to require intubation.

In childhood epiglottitis the causative organism is usually *Haemophilus influenzae* type b. The adult condition can be caused by a wider range of organisms, but *haemophilus* is still common (others include pneumococcus). Apart from the well known increased susceptibility to pneumococcal infection, a patient who has had a splenectomy is also at increased risk of infection by *haemophilus* and meningococcus.¹

Current teaching suggests the use of ampicillin or chloramphenicol, or both, as the first line antibiotic treatment of epiglottitis while the bacterial culture results are awaited.² Despite its recognised complications chloramphenicol is normally advocated in life threatening situations owing to the increasing prevalence of ampicillin resistant strains of *haemophilus* (11.4% in the United Kingdom in 1981³). Cefuroxime is active against these strains and is a suitable alternative initial treatment. Although erythromycin has been considered to be active against *Haemophilus influenzae*, it has a minimum inhibitory concentration of 1.0-8.0 µg/ml, whereas chloramphenicol has a value of 0.5 µg/ml, cefuroxime 0.5 µg/ml, and ampicillin 0.25 µg/ml.⁴

In both children and adults epiglottitis is a serious condition which can be fatal. Though it is completely curable, any delay in diagnosis and treatment may result in sudden, potentially fatal respiratory obstruction.⁵ As well as humidification and airway support the patients require treatment with adequate doses of intravenous antibiotics appropriate to the likely infecting organism.

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2 Kucers A, Bennett NMCK, eds. *The use of antibiotics*. 4th ed. London: Heinemann, 1987:763.

3 Philpott-Howard J, Williams JD. Increase in antibiotic resistance in *Haemophilus influenzae* in the UK since 1977: report of a study group. *Br Med J* 1982;284:1597.

4 Garrod LP, Lambert HP, O'Grady F, eds. *Antibiotic and chemotherapy*. 5th ed. Edinburgh: Churchill Livingstone, 1981:275.

5 Gerrish SP, Jones AS, Watson DM, Wight RG. Adult epiglottitis. *Br Med J* 1987;295:1183-4.

AUTHORS' REPLY,—We concur entirely with Drs Davies and John about the choice of antibiotics in

acute epiglottitis. Our district antibiotic policy recommends the use of intravenous chloramphenicol as first line treatment in epiglottitis. In this case, however, the emergency action taken was based entirely on clinical assessment of a patient who had undergone splenectomy and was susceptible to pneumococcal and staphylococcal infections in the first instance (there had been no consultation with the clinical microbiologists at that time). The priority was to relieve the obstruction and stabilise the patient. Within 12 hours the patient had started to improve and change of antibiotic treatment was considered unnecessary.

The confines of a brief report did not allow lengthy discussion on antibiotic use; we concentrated on the presentation of acute adult epiglottitis, a rare condition in itself, due to a rare organism.

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Private nursing home care

SIR,—We welcome the contribution made by Professor W J MacLennan (12 March, p 732). Private sector residential and nursing home care now provides care for 4% of all those aged over 65 and 20% of those over 85 in the United Kingdom. However, this rate of institutional care is low compared with that in other Western societies—for example, in France and Switzerland more than 6% of the over 65s occupy similar accommodation and in Australia 14% of the over 75s are in this type of care—a figure twice that for the United Kingdom.¹

By 1997 it is projected that there will be more than 1 million people over the age of 85 in the UK. Since admission to long term care correlates with age, even at current rates of provision, expansion must occur somewhere. Limited growth has already occurred since 1976, when there were 71.5 places in local authority and independent homes for every 1000 people over 75 years; by 1986 there were 80 such places.²

Although the total figure has risen since the 1960s, there has been a reduction in the number of long stay beds within the National Health Service. There has been a slight increase in the number of local authority places, but the most striking change has been the increase in private sector provision since 1980. In 1986 less than half of all expenditure on long term care of the elderly (and the physically handicapped) was actually supplied as well as financed by the public sector,² reflecting previous state underprovision. With the continuing contraction of long stay NHS facilities and little change in local authority provision the private sector currently meets the shortfall. The private sector has the advantage of rapidly responding to demand, in contrast to the NHS.

The Griffiths report, however, may allow this continuing expansion to become more ordered since if the report is implemented local authority social services departments would be the agencies through which care could be bought from any sector, the client being assessed and placed in the accommodation deemed most suitable. Nevertheless, this concept hinges primarily on the political will to devolve power and resources to the local level, which is in some doubt.

However it is organised, there will remain problems with the continuing expansion of the private sector, of which ensuring quality is the most important. There is also the problem of maintaining continuity of care as raised by Dr J K Bynoe (12 March, p 788), although this could be