TABLE
SELECTION OF BIOCHEMICAL REACTIONS (RIVM)

Source	Patient I	Patient II	Neurologist (2×)		Assistant A (2×)		Assistant B (1×)	Assistant C (1×)	RIVM Reference Strain
Raffinose	+	+	–	+	+	+	+	+	95%+
Sorbitol	–	–	–	–	+	+	+	–	95%–
Bile/exculin (growth/black)	+/+	+/(+)*	+/–	+/+	+/+	+/–	+/(+)*	+/+	+/95%–
Bacitracine	+	+	+	+	+	+	+	+	95% +
Levan	+	+	+	+	+	+	+	+	+
API-20s	s salivarius	*S salivarius*	*S cremoris/ them.*	*S salivarius*	No result (sorbitol +)	No result	No result	*s salivarius*	S salivarius
Serology	Nontypeable	Nontypeable	H16+ +†	H17+ + +†	Hl7+ + +†	H17+ + +†	H16+ +†	Nontypeable	

. Dubious reaction.
† H16 and Hl7 = experimental antisera (RIVM).

to the air, during which the assistant was not wearing a mask.

Over the last 20 years, this sort of accident was not mentioned in the *Dutch Medical Journal;* in the Cambridge Medline, such cases have not been reported during the last ten years. Kelkar et al described epidemic iatrogenic meningitis caused by *Acinetobacter* species following the intrathecal administration of methotrexate. *Acinetobacter* was found to contaminate rehooded needles despite autoclaving.[1]

The four neurologists in our hospital each have from ten to 30 years of experience. They were (and probably are still) sure they took the correct aseptic precautions. Annually, approximately 600 myelographies are carried out in our hospital. Moreover, these neurologists have administered cytostatica. They hold that these procedures are quite normally followed in hospitals by conscientious doctors without the use of caps and masks.

We inquired at two Dutch university hospitals: one did and one did not use caps and masks in these situations. We immediately took strict hygienic measures to prevent future accidents. With some resistance, the neurologists could be convinced of the necessity of wearing caps and masks. X-ray personnel as well were required to wear caps and masks, and were convinced to draw the contrasting fluid out of the bottle after disinfecting the cap's surface with iodine 1% in ethanol 70% instead of lifting the stopper out. One year has passed and no further accidents have taken place.

These protocols are suitable for other procedures, such as inserting epidural catheters. Here too, complications rarely are mentioned in the literature. Kilpatrick described bacterial meningitis in ten out of 17 patients after recent spinal anesthesia.[2] Berenguer documented meningitis following epidural anesthesia as well.[3]

The question was raised by our infection control committee, as well as our neurologists, as to whether caps and masks should be used during all diagnostic spinal punctures. We initially took the view that this would be taking things too far, because nothing is inserted except the needle. Yet, it is conceivable that contamination could occur in the same way as we assumed it occurred in these cases. Is the exception here still acceptable? If others have experience in this area, we would be grateful for feedback from readers.

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Medical Waste

To the Editor:

In his commentary on medical waste in the November 1991 issue,' Dr. Keene focuses on the minimal hazards associated with its disposal and lists a host of authoritative references in support of his posi-

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tion. What I found interesting was one of these references-namely 22-and the article entitled "Medical Waste-Declining Options in the 90s."[2] The authors (Karpiak and Pugliese) addressed the "declining options" for treatment and disposal of medical waste, but in so doing attributed these reductions to what they described as the "government's environmental-oriented legislation."

With the political conditions being what they are, it seems inevitable that the solution to the multitude of problems associated with the disposal of waste materials in general ultimately can be only one that effectively reduces their generation. That being the case, one would be inclined to think that efforts would be dedicated to the exploration of possibilities of using alternate types of materials. This process has been described and referred to in the healthcare community as source reduction-the replacement of single-use items with those that are reusable.

Admittedly, this is a yeoman's task and then some. Most difficult is the implementation of change in the habits and practices to which so many people have been accustomed for such a prolonged period of time. But if indeed there are no landfills to be available by the end of this decade, and if indeed the restrictions on air pollution will all but financially prohibit the use of incinerators, is there another choice? If the price of disposing of these so-called disposable materials is going to be closely scrutinized and monitored, while accompanied by rapidly escalating costs, isn't the selection of another option imperative?

Whatever the costs associated with the disposal of a hospitals general waste materials, those that are contaminated with blood have already proven to be increasing at an accelerated rate.[3] Under the federal government's Medical Waste Tracking Act (MWTA), a two-year pilot program was concluded this past summer. Estimates by several hospitals in the four states involved have indicated that their costs of being part of this program were astronomical. Notwithstanding, lawmakers in both the Senate and the House are reportedly set to consider extending the Act for another two years. The reason for this is that the legislative body is looking for a way to incorporate the findings of the project into the upcoming reauthorization of the Resource and Recovery Act (RCRA), which is expected to occur in 1993.[4] This does not preclude the possibility of legislative action being taken by other levels of government.

Our nation's environmental problems are not new phenomena and represent an accumulation of extensive misuse, mismanagement, and mistakes. The waste materials that we as a society have been generating never have, nor will they ever disappear. The ecological catastrophes occurring now are the result of many years of damage that we have been inflicting on the planet on which we live, and we simply no longer can afford the luxury of being able to throw things away as we did in the past.

We are a nation bedazzled by technology and addicted to crash programs. But there are no instant cures for long-term illnesses. This means, therefore, that we must assess new technological developments for their ultimate effect rather than their immediate impact, and do so on the basis of common sense and rational conclusions. We must be prudent rather than impulsive. Today's concerns for the environment are accompanied by a clear and distinct message. The surprise may be that we may find a real economic as well as an environmental benefit to some aspects in the reprocessing of reusables and that the era of disposables will be recorded in history as a passing experience in the relentless process of change.

To those hospital/clinic administrators and infection control practitioners interested in learning more about the disposal of medical waste, an 18-page bibliography with more than 600 selected citations on medical waste disposal can be obtained by sending a check or money order for $3 (made payable to the Superintendent of Documents) to the US Government Printing Office, Washington, DC 20402-9322. The document is identified as GPO No. 817-007-00004-0.

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