Letters

Third-party Payer Reimbursement for Patient Education and Pharmacokinetic Dosing Services

The Ohio State University Hospitals was being reimbursed by Blue Cross of Central Ohio for five patient-training programs.[1] As of September 1, 1978, there are two additional reimbursement programs: a steroid administration training program and a pharmacokinetic dosing service.

Pharmacists, upon a written order by a physician, train patients with adrenal insufficiency to administer steroids intramuscularly. A total of 18 patients have been instructed within the last six months. Blue Cross of Central Ohio has approved a $25 charge for this training program.

The pharmacokinetic dosing service provides for the pharmacist to do the following:

1. Review all relevant patient data.
2. Plan initial plasma sampling if required.
3. Interpret and make recommendations for drug doses based upon the plasma concentration.
4. Assess the resultant serum drug concentrations.
5. Prepare a written report.
6. Prepare a computer-generated plot of drug concentration versus time.

Blue Cross of Central Ohio will reimburse the hospital $20 for each dosing consult (one per patient). This charge is rendered by the pharmacy and does not include any costs or fees associated with the laboratory tests.

The approval for both programs resulted from meetings with Blue Cross of Central Ohio officers, Myles P. Lash, Administrator, University Hospitals, and me. Both programs will be required to demonstrate cost effectiveness using previously agreed upon standards of performance.

1. Nold EG and Pathak DS: Third-party reimbursement for clinical pharmacy services: philosophy and practice. *Am J Hosp Pharm* 34:823–826 (Aug) 1977.

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Mannitol Crystallization in Plastic Containers

Several months ago I had an unexpected experience while using mannitol 25% injection. I would like to bring this to the attention of hospital pharmacists as it poses a potential problem.

An order was received for mannitol 25 g to be given over 30 minutes. This necessitated placing 100 ml of mannitol 25% into an empty Viaflex bag. Administration was delayed one hour, by which time a very heavy, white flocculent precipitate appeared. I repeated the events using new material and found the pricipitate formed in 12 minutes.

Using a fresh vial of mannitol I placed some into the Continuflo tubing and had the same results. Placing another sample into a plastic 20-ml syringe again gave the precipitate.

I am aware that mannitol commonly crystallizes when exposed to low temperature. This could not be the case in these instances since at no time was the mannitol exposed to temperatures below 75 F. Furthermore, the flocculent precipitate observed in no way resembled the more common large crystals.

I realize that usually mannitol is given over a short period of time and this problem may be minimized. It is my intention to report this occurrence in case there is some significance to it.

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The observations reported by Dr. Epperson relative to crystallization of supersaturated solutions of mannitol when extemporaneously packaged in or allowed to contact plastic parenteral containers, plastic administration tubing and plastic syringes are accurate.

The aqueous room temperature solubility of mannitol is in the neighborhood of 18% w/v. Supersaturated solutions of 20% and 25% w/v are commercially available. Such products frequently contain the long, needle-like crystals typical of mannitol which has undergone slow, relatively undisturbed crystal growth. In cases where such crystal growth has occurred, the mannitol may be resolubilized by the aid of heat as described in the product's labeling. Recrystallization normally does not occur during the time required for administration to the patient.

Plastic container or plastic administration device surface characteristics frequently differ from those of the glass container originally utilized to package the product. These surfaces may act as nuclei for crystallization to occur at a rapid rate, thereby providing atypically small crystals when supersaturated mannitol injections are utilized. Resolubilization of these crystals with the aid of heat will not prove fruitful because the material may recrystallize within a short time period.

Where solution volume intake is not a major concern, this problem may be overcome by aqueous dilution of the supersaturated injection to 18% w/v or less prior to contact with the plastic container or administration device. In all cases, however, it is our recommendation that a filtration device be used during the administration of the fluid.

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Salary Survey of Hospital Pharmacy Residency Programs

The Rhode Island Hospital Department of Pharmacy conducted a salary survey of pharmacy residency programs in hospitals in March 1978. Questionnaires were mailed to each of the 89 training programs accredited by the American Society of Hospital Pharmacists at that time. Eighty-two (88%) of the questionnaires were completed and returned. Similar surveys were conducted in 1975,[1] 1976[2] and 1977.[3]

The salary range, based on an annual stipend, for the 12-month nonacademic, nongovernmental programs (N = 48) was $6,800–$15,932. The mean was $10,796 and the median $10,670. The 1977 survey revealed a mean and median of $10,231 and $10,320, respectively.

The salary range for nonacademic, governmental programs (N = 11) was $13,000–$20,652 with a mean of $15,640 and a median of $14,712. These programs are 12 months in duration. In analyzing the data from the programs surveyed which were offered by the various governmental services one must consider other criteria since in many instances financial remuneration

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