the discussion section of this report. The mean error rate for the IMED 927 in the decreased magnetic resonance imaging field is identified as 2.3%; however, if one takes the individual error rates and known number of devices from the results section at 9 to 12 G, the actual mean error rate is 1.8%. The error rate is 2.3% only for devices at 10 to 12 G, as is correctly stated in the results section.

Although the use of nuclear magnetic resonance imaging is certainly on the increase and this study attempts to answer a clinically relevant question, the limitations of the study methodology invalidate the comparative accuracy findings. The single largest methodologic deficiency is the use of a measurement means with an inherent error rate in the same range as the accuracy of device performance. The knowledge of failure of the IMED 927 devices under the influence of intense magnetism is useful; however, the additional study findings need to be substantiated or nullified through appropriate testing including a gravimetric volume measurement and a range of clinically relevant infusion solutions.

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Mary B. Engler Responds

TO THE EDITOR: The primary focus of our article entitled "The Effects of Magnetic Resonance Imaging on Intravenous Infusion Devices" was to investigate the possibility that magnetic field interaction with intravenous (IV) devices might result in inaccurate fluid delivery to a patient. Our main study results indicated that the six IMED 927 devices completely failed to deliver fluid within the close magnetic resonance (MR) imaging field. The sample size of three IMED 960/965 and four IVAC 530 devices was determined adequate for the study to ascertain proper fluid accuracy of these devices in the MR imaging area. A larger sample size of these devices was not feasible due to device availability and logistics of device positioning in the MR imaging field.

The reported "measurement error associated with disposable syringes is at least 3% to 5%" is not valid related to the study results since fast rate collections were obtained using graduated cylinders. In fact, syringe measurements served as a method of measuring delivered volume equivalent to using graduated cylinders in our testing. Specific flow rates from the IMED devices were slow (10 ml per hour), medium (50 ml per hour) and fast (100 ml per hour). The IVAC 530 device rates were identical with exception to the fast rate at 99 ml per hour. Data were obtained in a control versus experimental magnetic environment and the reported "3% to 5% syringe error" would have been initially measured during the control, thus changes that occurred in the magnetic field would not be due to syringe error. Clearly, volume error was due to device performance affected by magnetic interaction, as vividly demonstrated with the IMED 927, and not measurement error.

The IVAC 530 devices were $\pm 3.3\%$ prescribed fluid accuracy in the control environment, which exceeds the manufacturer's specifications $\pm 2\%$. No aberration in IVAC 530 flow rates occurred in the magnetic environment, and thus no statistically significant difference was detected between the control and magnetic field exposure for these devices. All devices, including the IMED pumps, had initial calibration levels determined before the study and the results of all devices were calculated by the same statistical means without bias.

The inclusion of multiple viscosity IV fluids and additives was not within the scope of this study as previously stated in the article. Additionally, despite ECRI's $\pm 5\%$ standard for delivery volume accuracy in their device testing, the IMED 960/965 devices' range of error was 1% to 4% and the devices were significantly affected ($P = .02$) by close magnetic interaction. This range of error poses definite clinical implications for a critically ill patient receiving life-sustaining IV medications or for a pediatric patient, when fluid accuracy is essential.

The inferences related to limitations of the study methodology are unsubstantiated. The inaccuracy of potential fluid or medication delivery induced by magnetic interactions cannot be minimized. Device performance is compromised with the IMED devices and failure can occur in the magnetic environment. Future MR imaging capabilities with increased magnetic field strengths must also be considered related to the effect on IV device performance. Therefore, in view of the magnetic effects on intravenous device performance recognized in our study, necessary precautions must be taken to safeguard the patient in this environment. We hope our study has stimulated further research, and perhaps a full-scale investigation including a larger sample size utilizing several IV device types, multiple viscosity intravenous solutions and additives will be conducted in the near future as a result.

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Evaluating Enlarged Cervical Nodes

TO THE EDITOR: The brief review on evaluating peripheral lymphadenopathy in adult patients by Kunitz[1] requires some clarification and amplification. We believe that the author's recommendation for an early biopsy of a cervical node is potentially dangerous.

In a retrospective review, McGuirt and McCabe[2] analyzed the outcome in patients who had biopsies of cancer-filled neck nodes. The incidence of wound infection and local and distant disease was higher in the group that underwent biopsies than in the group undergoing en-bloc resection.

If cancer is suspected in an enlarged cervical node in an elderly patient, the current preferred sequence of evaluation includes the following:

- a fine-needle aspiration of the mass[3];
- endoscopy of the upper aerodigestive tract including direct laryngoscopy, esophagoscopy, bronchoscopy;
- an open biopsy of the mass preparing the patient for a possible en-bloc cervical node dissection.

The technique of cytological evaluation of neck masses has a false negative rate for malignancy of 0% to 6% and a greater than 95% rate of true positives.[3] Since the majority of neck masses harboring cancer originate from a primary tumor

in the head and neck,[4] sound oncological management entails treating the primary tumor and draining lymph nodes as a single unit, by the use of surgical or radiation therapy or a combination of the two. Anything less than this violates time-tested techniques and potentially does the patient a great disservice.

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Medicare Island

TO THE EDITOR: Yesterday a form letter arrived from the state Medicare office informing me that I was under surveillance—presumably the computer had discovered an increase in my office call charges. With this came the implied threat that if I were found guilty I might be subject to heavy fines and perhaps be denied future participation in the Medicare program.

That evening, as I pitched and tossed awaiting sleep, a scene out of my childhood picture books flashed back to me. There was my friend and hero, Captain Gulliver, lying prostrate on the beach, tied down in complete submission. Surviving a shipwreck, he had staggered ashore, quaffed deeply of his bottle of brandy and then he had drifted off into a sound sleep. As my hero lay there those Lilliputians had quickly tethered him to the ground, using a multitude of strings and pegs. Adding insult to injury, they shot darts and arrows into his face and hands. A sad but memorable story of a giant immobilized by the onslaught of a host of little people.

Could it now be that The American Doctor, that once proud and omnipotent Captain of the Ship, had quaffed too deeply Old Uncle Sam brandy during the heady days of the 60s and 70s? That he was now about to find himself shipwrecked on Medicare Island, lashed and prostrated by an army of quasigovernmental Lilliputians, each one equipped with clipboard and rule book, their quivers filled with bundles of regulatory arrows?

With official strings and pegs, these people could hamstring the good doctor, bringing him to his knees. With arrows dipped in governmental ink and bound with sticky red tape, they could quickly bring him into submission. He would be kept fearful lest he enter the wrong diagnosis on the admission sheet, or dare to extend the length of stay in hospital. And surely he would take care not to raise his office call fees.

We all remember that our hero in *Gulliver's Travels* came to a happy ending. Captain Gulliver was able to free himself from his bonds and to wipe away those prickling darts and arrows. So, too, this short chapter in my own Medicare scare story had a happy ending. Rose, the efficient lady who handles these matters in our office, was able to prove, because of superb record keeping, that Medicare's big computer had simply glitched again.

But—will The American Doctor, as he travels the rocky roads of Medicare Island in the months ahead, find ways of casting off all those entangling tethers that thwart him in the compassionate care of his patients? Will he learn to cope successfully with complicated coding procedures? Will he acquire the semantic skills to satisfy the demands of all those little people or will he finally rebel at this assault on his clinical integrity?

These are the questions that will need to be answered in the final chapter of the Medicare Island storybook.

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Being Called to Account

TO THE EDITOR: There was a certain sense of pride in the way he withdrew the mediastinal tube; the unwashed finger smartly plugging the incision in the patient with the coronary artery bypass graft. He had scoffed, "Let's not get too complicated," when offered the standard sterile gloves, povidone-iodine and petrolatum gauze. He was totally aloof to the possibility of his being the cause of a postoperative infection. After all, he was germ free (or so he seemed to assume). In contrast, patients' visitors were carefully dressed in cover gowns to decrease the possibility of introducing additional organisms into the coronary surgical unit.

Then there was a urologist whose patient had a purulent suprapubic incision and required a urethral catheter. The urologist chose to insert the catheter without washing his hands, without gloves and without meatal cleansing—much to the shock of the onlooking nursing student. That time surely could have been better spent prepping the patient using medical asepsis.

A physician caring for a diabetic patient with a chronic knee abscess left orders not to change the dressing. Four days later he removed the purulently saturated gauze, probed the wound with his unwashed finger and applied additional antibacterial ointment to the exudate. He was questioned about the lack of hand-washing, gloves or cleansing agent and the application of antibacterial ointment, which can result in fungal infections when not removed before reapplication. But the physician simply tried to offer reassurance of the "unnecessary" concern.

These incidents occurred in various well-respected hospitals, and the physicians involved were likewise generally well regarded. It is, of course, not only physicians who are responsible for such practices. Researchers such as Albert and Condie[1] have given significant evidence of frequent hygienic infractions by all health-care team members. Physicians were, however, the most frequent culprits. After patient contacts, they were noted to wash their hands only 14% to 28% of the time. Because lack of hand-washing has frequently been identified as the major mode of nosocomial infection transmission, these figures are particularly ominous.

All health care personnel can improve their hygienic practices, thereby significantly decreasing nosocomial and iatrogenic infections. Although we are all aware of the need for improvement, this becomes more difficult when some of our physician role models do not follow such practices.

I appeal to all physicians to examine your own practices. What can you do to improve your hygienic technique? The