rates were very low in our setting as compared to other recently available studies.[2,3] This is particularly troublesome due to the potential impact of nosocomial influenza infections among high-risk hospitalized patients. Thus, our figures might even be conservative in this respect. However, we could confirm higher coverage rates in physicians, technicians, and laboratory workers.[3]

The use of rapid influenza diagnostic tests can help to identify influenza outbreaks early and can allow earlier initiation of infection control measures to reduce influenza transmission. Influenza control measures include cohorting ill patients, instituting Droplet Precautions, using antiviral medications for influenza prophylaxis and treatment, and re-offering influenza vaccine to unvaccinated patients and healthcare workers.[4] Although antiviral medications are an important adjunct for influenza prevention and control, particularly in healthcare settings, vaccination remains the primary means of preventing influenza and its complications.

Several studies have demonstrated that influenza vaccination is cost-effective in healthy working adults[2] and very effective in healthcare workers.[5] In the future, economic benefits should be assessed for every individual organization or company, taking into account all individual criteria. Using this, employers can judge for themselves whether they offer a flu shot to their employees or not. Because most European healthcare systems are financed directly or indirectly on the basis of paid labor income, a positive effect of influenza vaccination on productivity also will be highly important on a societal level. Thus, the offering of cost-effective healthcare solutions on the level of employers is not only ethical but also an act of good citizenship.

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Nosocomial *Mycobacterium chelonae* Infection in Laparoscopic Surgery

To the Editor:

Minimally invasive laparoscopic surgery offers the advantages of early postoperative recovery with decreased infection and less morbidity. The overall infection rate is at par with conventional surgery. We report a series of 33 patients who underwent laparoscopic surgery (6 diagnostic and 27 operative) over an 8-week period at our hospital, a tertiary-care center in central Mumbai. The operative group included 11 cholecystecomies and 16 gynecological procedures, including 5 lyses of adhesions, 5 cystectomies, 3 tubal ligations, 2 laparoscopic-assisted vaginal hysterectomies, and 1 myomectomy. The duration of procedures ranged from 30 minutes to 6 hours.

All patients did well in the immediate postoperative period. However, subsequently, 16 patients had symptoms of pain, hyperemia, induration, and discharge at the operative site 3 to 4 weeks after surgery. There were no systemic symptoms such as fever, weight loss, or malaise.

Ziehl-Neelson stain, routinely performed on all pus samples in our laboratory, revealed acid-fast organisms in the wound discharge from all these patients; 13 of these were culture-positive for *Mycobacterium chelonae*, identified by rapid growth in 3 days, catalase- and aryl sulphatase-positivity, growth on MacConkey's medium and niacin, nitrate reduction, and lack of iron uptake. The organisms were resistant to the standard antitubercular drugs but were found to be sensitive in vitro to amikacin, clarithromycin, imipenem, and ciprofloxacin.

Despite appropriate antimicrobial therapy for 2 to 4 weeks, 11 of the 16 patients required debridement and wide excision of the tract. Surgical exploration revealed multiple tracts with pearly white gelatinous areas of caseation. Histopathological examination confirmed necrotizing granulomas with epitheloid cells and giant cells, consistent with a diagnosis of tuberculosis (TB). Three patients required secondary excision; however, all patients recovered fully within 6 months.

This outbreak prompted an active search for the point source in the laparoscope. *M chelonae* was isolated from a rubber diaphragm in one of the cannulae. In this epidemic, we found that merely soaking the trocars or cannulae in 2% glutaraldehyde without completely dismantling the parts was not adequate. The hospital water supply was screened, but we could not isolate any rapidly growing mycobacteria at the time.

Rapidly growing mycobacteria are an increasingly important group of human pathogens. Their rise in clinical significance relates to a greater awareness of these organisms as pathogens.[1-3] They usually are isolated from tap water, and infection of the skin and soft tissues is most common. In a country such as ours, where TB is endemic, it is imperative to isolate and identify these organisms to prevent needless therapy with antitubercular drugs. To compound matters, as healing of these wounds is protracted, these patients could inadvertently be misdiagnosed as multidrug-resistant TB if culture with susceptibility is not performed at the outset.

With the advent of newer technologies, it is essential from an infection control perspective to ensure that proper disinfection of equipment be performed. As a corrective measure at our institute, we have two dedicated persons whose sole job is handling the disinfection of laparoscopes. This entails flushing with a water-jet device immediately after use, treatment with proteolytic enzymatic detergents to dissolve clots, etc, and complete dismantling of all parts before disinfection with 2% glutaraldehyde. Lastly, ethylene oxide sterilization of nonmetallic parts and autoclaving of all metallic parts is undertaken.

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Optimal Frequency of Changing Intravenous Administration Sets: Is It Safe to Prolong Use Beyond 72 Hours?

To the Editor:

In the March 2001 issue of *Infection Control and Hospital Epidemiology*, Raad et al suggested that delaying the replacement of intravenous (IV) administration sets up to 7 days may be safe. The study is analyzed by Muder in the editorial of the same issue.[1,2] Authors state that, as bacteremia caused by IV fluid contamination is now uncommon, this would have a substantial cost-saving impact "worldwide." Fortunately, the conclusion is cautious: this could be done only if the patient is at low-risk for infection and if he or she is not receiving parenteral nutrition, blood products, or interleukin-2. I think this conclusion shows only some of the bias of the study, and, to those "ifs," I would like to add, "if the patient is hospitalized in a research-oriented center in the United States of America."

Under controlled trials in hospitals with stringent nursing practices, some other investigations with 500 patients could conclude that it is not harmful to use a big stock bottle to load burettes from several patients, to mix IV fluids in the wards, and to reuse vials designed to be used once; all of these are standard practice in many hospitals through the world. Despite nursing standards, managers from many hospitals in developing countries would like to see studies showing that they always had been right by not spending too much, but would those studies have enough potency to apply the conclusions to hospitals worldwide? I think they would not. *Klebsielleae* tribe bacteria (KTB) are able to sustain late growth in IV fluids, even starting with a low inoculum,[3] and their contaminating IV fluids is, by no means, a thing buried in the past. The article does not state clearly how many KTB Raad et al found, but my guess is less than 5. If a similar study is performed in most hospitals in developing countries, they would find at least 25 per 500 administration sets. During the last decade, we found such rates in different hospitals from Guanajuato State in Mexico, with data reproduced in hospitals from Mexico City.[4-7]

I think that the conclusions of the study have only local, not "worldwide," application. Most hospitals in the world do not work with the nursing standards of the tertiary-care centers in the United States of America. Even there, a wide variety of lapses in aseptic techniques have been observed, and publication could be biased toward observations from hospitals with research units and strict nursing standards.[8] No data are known, but I dare to say that most hospitals from developing countries lack a central pharmacy, syringes are shared to administer the same drug to several patients, and IV fluids are mixed without any care in the wards. This could explain why most episodes of primary bacteremia from hospitals in developing countries are caused by KTB. Worse, most episodes of KTB sepsis are not recognized, as personnel in most hospitals do not draw blood cultures and official bacteremia rates of zero are the rule. Indeed, bacteremia outbreaks are more frequently reported by the media in developing countries when a critical mass of patients' relatives complain at the same time, mainly when death of children is involved. I hear such reports at least twice a year; then, bacteremia becomes hospitals' nemesis, and the hospital's very existence is questioned by reporters and society.

Under these circumstances, how far should we go to reduce costs? I consider that we still have to honor some redundancy in safety measures, at least to avoid the worst hospital infection. For commercial aviation, most safety measures are redundant, because if the plane crashes, people die. When we infuse KTB directly in the bloodstream, people die also. The difference is that, when the plane crashes, the crew dies and it is news; when the patient dies, we do well and it is not news. Even if a study of 500 flights demonstrates that all the safety redundancy was unnecessary and, indeed, that the pilot could fly the plane with a remote handstick, we would rather fly the traditional way, with a pilot in the plane and everything by the book.

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