

Answer Case 3.

Use a face mask labeled as a Personal Protective Device (EN 149 or N95). The traditional surgical mask is not protective enough for tuberculosis.

You can have more information on <http://www.youtube.com/watch?v=E6c6Va2IGPU>.

Always wear a mask before entering the room since tuberculosis is an airborne transmission. Therefore, *M. tuberculosis* is transported on droplet nuclei far from the source patient.

Answer Case 4.

Use of scalpel blades: scalpel blade injuries are among the most frequent sharps injuries, second only to needlesticks. Scalpel injuries make up 7 percent to 8 percent of all sharps injuries. The surgeon and his assistant are at risk, as well as the nurse who will receive the used scalpel.

Use of suture needles: Suture needles are the main source of needlestick injuries to operating room personnel, causing 51% of all sharps injuries in surgical settings. The surgeon, his assistant and the perioperative nurse are at risk of injury.

Preventive steps can be taken at several levels and include reduction or elimination of use of sharps as much as possible, engineering controls (i.e. blunt needles), administrative controls including training and provision of adequate resources, and work practice controls; the latter may include using instruments (not fingers) to grasp needles, load scalpels, and avoiding hand-to-hand passing of sharp instruments.

Surgical smoke: vaporisation of tissues by lasers or electro-surgery generates smoke and aerosols which may contain large quantities of particles. These could be intact cells, cellular fragments, blood cells or fragments of viral DNA. Viable bacteria have been cultured from laser smoke, these included *Bacillus subtilis*, *Staphylococcus aureus*, and also mycobacteria, of which *Mycobacterium tuberculosis*

Decontamination of instruments: the health personnel who clean the instruments before sterilization can be injured by the contaminated devices, mostly by percutaneous injuries.

Anesthesiologist: there is a high risk of disease transmission during orotracheal intubation or extubation since the health personnel is close to the upper airways of the patient, and since intubation can induce cough. Both airborne and droplet transmitted diseases are concerned.

Don't forget the other risks, such as ionizing radiations, ergonomic factors and stress ...