

Blood and Body Fluid Exposures to Health Care Workers' Eyes While Wearing Faceshields or Goggles

by *Melanie Bentley, B.S.*



In the January/February 1995 issue of AEP (vol. 1, no. 2), an analysis of exposure data from nine hospitals participating in an EPINet data-sharing network strongly supported the benefit of wearing goggles or faceshields as a method of preventing eye exposures to blood and body fluids. However, these data also revealed the surprising finding that goggles and faceshields do not always provide total protection. In a group of health care workers reporting blood or body fluid exposures (n=1,150), among those who were wearing either goggles or faceshields at the time of their exposures (n=58), 31% (n=18) still experienced eye exposures despite wearing eye protection. In order to

gain insight into the circumstances under which goggles and faceshields fail to protect eyes from blood and body fluid exposures, descriptions of a number of these events have been provided by seven of the participating EPINet hospitals. These descriptions suggest that such failures often occur when blood and body fluids are ejected or squirt under pressure, when goggles or faceshields either slip or leave unprotected gaps, or when they provide no seal above the eyes, allowing blood or body fluids to run down the forehead and into the eyes. Many of these incidents occurred in labor and delivery and operating rooms. Improved designs for protective eye and facewear may provide greater protection for the highest-risk circumstances.

- A scrub nurse in an operating room was assisting in an exploratory laparotomy. The surgeon was handling the small bowel, while facing the surgical field. The nurse felt something splatter into her right eye. Forty-five minutes later, the nurse thoroughly rinsed her eye. The amount of peritoneal fluid that touched the eye was small. The nurse was wearing a protective faceshield at the time and the fluid touched her eye through a gap in the faceshield.

- A resident in labor and delivery was performing a cesarean section when blood sprayed from the wound into his face. The resident was wearing glasses and a mask but was not sure if blood went into his eyes and mouth.

The contact lasted between 15 minutes and one hour and involved a moderate amount of blood. The resident was also wearing double gloves and a surgical gown.

- A resident in a patient room was sewing a perineal tear after delivery. While injecting lidocaine, a small amount of the medication splashed up and hit the doctor's face, eyes, nose, and mouth. A possible blood exposure might have occurred as well. The doctor was exposed for about 5-14 minutes. He was wearing double gloves, a surgical gown, and a faceshield and surgical mask, both of which had slipped down slightly.

- An attending M.D. in a delivery room was performing a vaginal delivery and was reaching to deliver the placenta. A small amount of blood and amniotic fluid splashed over the top of his faceshield and soaked through his gown. The exposure lasted for more than one hour. The doctor was wearing double gloves, a surgical mask, a gown, and a faceshield.

- An attending M.D. in a delivery room reached into the patient's uterus to feel the placenta. Blood soaked through her surgical gown, which was supposed to be waterproof, and also splashed into her eye. The exposure lasted for less than five minutes. In addition to the gown, she was wearing double gloves, a faceshield, and a surgical mask.

- A respiratory therapist in an intensive care unit was emptying ventilator circuit condensate. When the tubing was disconnected from the expi-

ratory limb, a small amount of condensate splashed through the side opening of her goggles. The contact lasted 5-14 minutes. The respiratory therapist was wearing single gloves, goggles, and a surgical mask.

- A resident in a delivery room during a vaginal delivery was suctioning the baby's mouth and nose on the perineum at delivery. A large amount of blood and amniotic fluid squirted over his protective eye gear and face mask and ran down his face. The exposure lasted less than five minutes. The resident was wearing single gloves, a faceshield, surgical mask, and surgical gown.

- A resident in an operating room was removing a piece of the patient's bone. A bone chip and a small amount of blood flew up and hit the resident in the eye. The exposure lasted 5-14 minutes. The resident was wearing a faceshield, surgical mask, and surgical gown.

- An R.N. in an operating room was assisting with an arteriovenous fistula. During the procedure, a bulldog clamp slipped off the artery. Blood sprayed across the nurse's surgical cap (a mask with a shield). A small amount of blood dripped off the cap onto the nurse's forehead, near her eyes. The exposure lasted less than five minutes. The nurse was wearing double gloves, a faceshield, surgical mask, and surgical gown.

- A nurse was assisting in an oper-

ating room when a small amount of blood splashed into her right eye through a gap at the top of her goggles. The goggles may have slid down. The exposure lasted less than 5 minutes. The nurse was wearing double gloves, goggles, a surgical mask, and surgical gown.

- An attendant in an operating room was forcefully flushing a used suction tip. A small amount of blood splashed under the faceshield and hit the attendant's face and eyes. The exposure lasted 5-14 minutes. The attendant was wearing a faceshield, mask, gown, and double gloves.

- A surgery attendant was in an operating room when tubing disconnected and a small amount of peritoneal fluid splashed into his eyes. The exposure lasted less than 5 minutes. The surgery attendant was wearing double gloves, a faceshield, mask, and surgical gown.

- A resident was performing angioplasty. While placing the injector syringe on the pressure manifold, contrast dye contaminated with blood squirted and a small drop went under the resident's protective eyewear and into his left eye. The exposure occurred during a cath lab procedure.

- A nurse who had just completed a plasmapheresis procedure was bent over the centrifuge while cutting the apheresis tubing, in order to free the collection bag. While cutting the

tubing, plasma squirted into the nurse's left eye. The nurse was wearing a face mask with eyeshield, but because she was bent over there was a gap between the shield and her eyes.

- A nurse assisting with an endoscopy was injecting cleansing solution through the contaminated scope. Stool blew through the air channel over the plastic shield on her mask, under her glasses, and into her eyes.

- A nurse in a patient's room was attempting to flush a J tube with warm water. The contaminated water splashed up into her face and she felt a drop in her right eye, despite wearing eyeglasses and goggles.

- A nurse in an ICU/CCU had finished suctioning a baby. The respiratory therapist pulled out the tube and a small amount of nasal secretion went over the nurse's goggles and into her right eye. The exposure lasted more than one hour.

- While in a clinical lab, a lab worker used a 5cc syringe to inoculate a bottle with a bone marrow specimen; 5cc syringes used for inoculation of tissue are not aerosol-free. A small amount of specimen backed up and out of the syringe and went into the lab worker's left eye. The exposure lasted less than five minutes. The lab worker was wearing single gloves, a hood with a plastic faceshield, a surgical mask, and a cloth lab coat.