Key Points

• **70% of latex-related anaphylactic reactions occur in women.**
  Intra-operative management of the pregnant patient is challenging because the welfare of both the mother and fetus must be considered. A significant predominance for female latex-related reactions (about 70%) has been found.

• **50% of all latex-related reactions occur in the obstetric and gynecological setting.**
  OB/GYN procedures appear to be the most common setting for latex-related anaphylaxis, accounting for approximately 50% of all latex-related allergic reactions. Additional risk factor for the obstetric population is extensive and repeated contact of highly absorptive membranes with surgical gloves during vaginal examinations or delivery.

• **There is a higher prevalence of latex sensitization in the obstetric population (5.1%) vs. the non-pregnant undergoing gynecologic surgery (1.7%).**
  Neuromuscular blocking drugs are the most common triggering agents of intra-operative anaphylaxis followed by latex. The predominant use of regional anesthesia in obstetric surgery limits exposure to Neuromuscular blocking drugs thus making latex the primary cause in obstetric surgery.

• **Anaphylaxis has a potentially devastating effect on fetal oxygenation.**
  Maternal hypotension as a result of anaphylaxis can result in fetal hypoxia with adverse outcome. As opposed to non-obstetric conditions during which the surgical procedure is usually interrupted, obstetric anesthesia must proceed urgently for the safety of both the mother and fetus.

• **Latex anaphylaxis is often misdiagnosed because of delayed symptomatology.**
  During obstetric anesthesia, other conditions may mimic an allergic reaction.
  Cardio-respiratory collapse may be due to local anesthetic induced sympathetic block or toxicity, hemorrhage or amniotic fluid embolism. This can cause a delay in diagnosis of anaphylactic reactions.

**With the higher prevalence to latex sensitization and anaphylaxis in the obstetric population, conversion of the labor and delivery areas and operating rooms as a latex-free environment should be considered.**
Introduction
Latex related reactions increased from 0.5% in 1984 to 22.3% in 2002. A significant female predominance for latex related reactions (about 70%) has been found. This may be related to women having more frequent exposure to natural rubber latex (NRL) in everyday life and work and greater mucosal contact with latex contraceptives. Additionally, pregnant women have additional exposure by frequent/extensive contact with exam/surgical gloves with highly absorptive mucus membranes. One of the most common settings for latex anaphylaxis during surgical procedures is represented by obstetric and gynecological procedures, which have been reported to account for approximately 50% of all reactions due to latex. Neuromuscular blocking drugs are the most common triggering agents of intra-operative anaphylaxis followed by latex. The predominant use of regional anesthesia in obstetric surgery limits exposure to Neuromuscular blocking drugs thus making latex the primary cause in obstetric surgery.

Discussion
Intra-operative management of the pregnant patient is challenging because the health of both the mother and fetus must be considered. Anaphylaxis has a potentially devastating effect on fetal oxygenation. One study found a higher incidence of latex anaphylaxis in cesarean section patients (1:310) versus the general surgical population. Injection of oxytocin (a common uterotonic) may have a fundamental role in triggering the reaction, by inducing sudden uterine contractions, which may provoke the release of latex particles from the uterus into the bloodstream. During labor and delivery, the differential diagnosis of anaphylaxis may include all other causes of maternal respiratory distress or cardiovascular compromise, such as pulmonary embolism, pulmonary edema, acute coronary syndrome, mitral stenosis, hypotension, cerebral vascular accident and amniotic fluid embolism. These can mask identification of an anaphylactic event. The diagnosis of anaphylaxis is an important one to make since a successful outcome depends upon the rapid restoration of circulating volume. However, simulation tests have revealed that anesthetists may require at least 10 minutes before making the correct diagnosis of an anaphylactic reaction. Removal of the most common trigger of anaphylaxis in obstetrics can help speed in the diagnosis of common causes of maternal hypotension during delivery.

Conclusion
The total U.S. cesarean delivery rate reached a high of 32.8% of all births in 2011, rising 60% from the most recent low of 20.7% in 1996. A history of previous cesarean section has been identified as a risk factor in latex sensitization. One recent study compared the prevalence of latex sensitivity in pregnant women undergoing cesarean section to non pregnant women undergoing gynecological surgery. The cesarean section group had a significantly higher sensitization (not allergic reaction) to latex based on serum igE levels preoperatively (5.1% vs 1.7%). With the higher prevalence to latex sensitization and anaphylaxis in the obstetric population, conversion of the labor and delivery areas and operating rooms as a latex-free environment should be considered.

References: