

### **Case Study:<sup>1</sup>**

Lewis was born with a condition called 'Pectus Excavatum', which means a crease in the chest cavity. About one in 500 people has it. He has grown into a healthy, gifted 15-year-old. In adulthood, Pectus Excavatum sometimes may create few health issues. His family decided for the elective surgery at PQR hospital, which is an old teaching hospital.

On Thursday, 2<sup>nd</sup> Nov 2000, Lewis and his family arrive for the surgery at the hospital at 6 a.m. where the nurse asks Lewis for his weight, instead of actually weighing him. He is taken for the surgery, which was supposed to last for approx. 45 minutes. It actually lasted for 2½ hours. When lead surgeon Dr. Edward Tagge emerges from the OT, he says he had to reposition the metal bar in Lewis' chest four times to get it right. All in all, he says, Lewis did fine.

Post-op, he is prescribed a full adult course of the IV painkiller Ketorolac (Toradol), injected every six hours

Lewis wakes in the recovery room. He tells doctors that his pain is about a "three" on a 1-10 scale. Lewis is taken to Room 749 in the children's cancer ward as there is no room in the surgery ward.

On Friday night, Dr. Tagge, who operated on Lewis, leaves for the weekend. At 9 a.m. on Saturday, surgeon Dr. Andre Hebra records in the case sheet of Lewis. "No evidence of infection. Clear lungs". Hebra also writes in Lewis' case-sheet "May sit up and consider getting out of bed." Hebra is the last senior doctor to see Lewis for two days.

Now onward, Lewis' doctors will be junior doctors, called residents. On Saturday night, Lewis begins to run a slight fever. He is still on Toradol, taking it by intravenous line.

He was monitored by pulse oximeter, and his oxygen saturation levels are never, what they should be for his age and fitness. Because he has a history of asthma, the hospital staff does not seem to take this seriously, saturation drops down to 85%, a very low level. They are concerned that the alarm would keep Lewis awake. Hence, the alarm is switched off.

At 6:30 a.m. on Sunday, a half-hour after another Toradol injection, Lewis gasps. He has horrible pain in his upper abdomen. "It's the worst pain imaginable," Lewis says to his mother, Helen, who summons the nurse. She wants to know how intense the pain is? Lewis says his pain is "five on a scale of five." The nurse tells Lewis and Helen (mother), the pain is gas. "There's nothing I can do for gas pain," she says.

In nurses' notes that morning, a nurse writes, "gas pains '.'. pt. (patient) needs to move around." Another nurse suggests a bath. She and Helen put Lewis in the tub and sponge him off. "Afterward, he sits in the chair for few minutes. This is a tremendous expenditure of energy for him. He seems to be getting weaker and weaker". Nurses insist Helen walk Lewis. Lewis says his pain is getting worse.

During the day, his belly grew distended and bowel sounds ceased. He became paler and paler and his temperature dropped. His heart rate skyrocketed. He ceased to urinate. Because it was a Sunday, the only doctor who sees him is an intern, five months out of osteopathic school. When his mother requested for an attending physician, another resident came. All confirmed the diagnosis of constipation. Lewis' belly grows hard and

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<sup>1</sup> Source - <http://www.lewisblackman.net/>

**This case study is for discussion on 2<sup>nd</sup> Nov 2022**  
**Not to be used for any other purpose.**

distended, his temperature drops, his skin grows pale and he drips with a constant cold sweat. His eyes are sunken. He's exhausted, in great pain.

At 6:26 p.m. on Sunday, Helen's insistence is such that a nurse writes in Lewis' record: "Parent requesting upper level M.D.<sup>2</sup>" At 8 p.m. Sunday, the chief resident, Dr. Craig Murray, comes to Lewis' room, Murray checks Lewis. He writes in the record: "probable ileus." That means: blocked intestine. Murray orders a suppository to ease the supposed blockage.

Murray also writes that Lewis' heart rate is in the 80s, slightly above normal but no cause for alarm. However, at the same time, a nurse notes in the record that Lewis' heart is beating 126 times a minute. The nurse also records Murray has been made aware of Lewis' sweating. Murray says Lewis' sweating and lowered temperature - 97.7 degrees, almost a full degree below normal - are "side effects" of the medicine because Lewis is so young.

Later Sunday night, with Lewis' pain still enormous, Lewis' heart rate rockets. At midnight, it is 142 beats per minute and his temperature is 95 degrees. At 4 a.m. on Monday early morning, his heart rate is 140 and his temperature is 96.6. More residents keep dropping by. Sometime Monday morning, Lewis' gut pain suddenly stops. In reaction to Lewis' loss of pain, a nurse says, "Oh, good," Helen writes later.

When the vital signs technician came the next morning (Monday), she could not find a blood pressure. In response, the intern and nurses spent 2 ¼ hours scouring the hospital, looking for a blood pressure machine or cuff that would register a reading. In all, they took his blood pressure 12 times with seven different instruments.

About noon, two technicians arrive to take a sample of Lewis' blood for tests. They get just a small sample and it was blackish in colour. Helen calls for help. She thinks Lewis has had a seizure. Still, veteran doctors don't come. Instead, chief resident Murray walks in. "Dr. Murray calls loudly, 'Lewis! Lewis!' He stands there for two minutes, then asks the parents and Eliza to leave the room.

At that point, 30 hours after Lewis had shown signs of a potentially fatal condition, hospital staff springs into action. Somebody issues a full alert - a code. Surgeons rush in.

Inside the room, doctors - this time, veteran doctors - work on Lewis. They do cardiopulmonary resuscitation. They shock his heart with electrical machines. They hook up intravenous lines, according to Lewis' medical records. They work for 60 minutes. Doctors officially record Lewis' death at 1:23 p.m. on Monday, 31 hours after Lewis first said he was having horrible stomach pains. At 2 p.m., Dr. William Adamson, the lead doctor during the attempt to save Lewis, says 'We lost him' and writes in the record, "It is unclear why the patient expired. We will pursue an autopsy."

**Please identify the Safety Issues at PQR Hospital?**

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<sup>2</sup> MD means experienced qualified doctors