ANESTHESIA SAFETY NETWORK

QUATERLY PERIOPERATIVE INCIDENTS REPORT

Newsletter #006 – december 2017

TOWARD EXCELLENCE IN HEALTHCARE

ANESTHESIA SAFETY NETWORK

INTRODUCTION

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Here's the last newsletter of this very exciting year. We've shared many cases and I look forward to improving the platform and fostering our network in 2018. There are more than one thousand subscribers but it seems that they're still many barriers preventing others joining. Regarding these difficulties, I then decided to send to you a survey. The results are being analysed and I will share them next month using social network. In the next few weeks, this platform will be accessible without using any passwords.

It will allow you to download all the previous newsletters. However, your password will be needed for reporting cases or connecting to the Anesthesia Safety Network with different kinds of status for members engaged in this process. While I was reading some of the answers from the survey, I've realised that successes could be reported and analysed too because they are the proof of the resilience and ingenuity of frontline staff.

René Amalberti[1] wrote that '' the total safety was the sum of planned safety (rules, procedures) with managed safety (ingenuity, resilience)''. Steven Shorrock[2] declared that the human intelligence came from past experiences, heuristic, and creativity. Checklists couldn't tackle the entire situation. Despite the importance of the analysis of hazardous events, we should also focus on our successes. That's what he called: ''Safety-I and Safety-II''

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In a recent movie (Safety differently)[3], Sidney Dekker, best-selling author on human factor and safety encouraged the frontline staff to decentralise their safety bureaucracy and shifting from ''guilty'' to ''accountability''.

At the end of October 2017, I went to the ASA congress in Boston where I met some of you and some European and North-American colleagues. Thanks to these meetings, new collaborations are in progress and you'll be informed in due course. Many talks were very interesting and my favourites were the Jeffrey Cooper, Amanda Burden and Erin Flynn-Evans sessions.
In a very recent article, Erin Flynn-Evans[4] explained how to deal with fatigue risk (sleep debt, extended-duty work shift, night call shift, sleep inertia) and suggested new countermeasures to implement (strategic nap, caffeine use, micro breaks, exposure to blue light devices, ...). As you will read in this newsletter, ''the more you're tired the less you're aware of it''.
The strategy to implement cognitive aids was also in the spotlight. Stanford and Harvard teams had created these tools ten years ago but it seems difficult to use them during a crisis code. It conducts to a gap between work-as-done and work-as-recommended. That's why the Stanford and Harvard teams have decided to create the operating room emergency checklist implementation toolkit (www.Implementingemergencychecklists.org).

Claude Valot has written this newsletter editorial. He is a Senior Human Factors consultant and works for DEDALE company. He is a former researcher at IRBA (Institut de Recherche Biomédicale des Armées - France). His knowledge and highly-skilled vision about these reports allow us to highlight what we suspect: the delusion of performance.

Without all the supporters and subscribers, this platform wouldn't exist. Thank you for your commitment to enhance our knowledge about the human factor in Healthcare and to improve patient safety.

Frédéric MARTIN

« THE TOTAL SAFETY IS THE SUM OF PLANNED SAFETY (RULES, PROCEDURES) WITH MANAGED SAFETY (INGENUITY, RESILIENCE)[1] »

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EDITORIAL

Doubt and delusion of performance

In many cases reported in the previous ASN newsletters, one person thought: "It will be fine... this equipment is not really..., this patient is not completely ... the team is not completely ... but it will be fine..."
This was not efficient: bad outcome, lack of teamwork, missing data ... Finally, it has directly impacted the outcome for the patient and sometimes causing harm. This short sentence is the expression of delusion of performance.
Let's figure out what's the real meaning. "It will be fine" suggests "there are some deviations with recommended procedures but we're high-skilled professionals, they're experts, I'm an expert, so it's not necessary to apply this rule ..."
The irony of these cases in terms of human factors is that most of the people began to think that:
" It's not fine, I'm concerned, this equipment has been strangely set, this procedure is not correct, ..." They were uncomfortable for a short period of time but finally, rather than speak up, they decided to proceed.
People were aware of these procedural discrepancies as a signal but not as an alarm. This fast way of thinking is one of our cognitive processes: "just enough". That's sufficient for all the things you do in your daily life (shopping, playing videogames, watching a movie) but not for patient safety.
The amplification of doubt must be set at a higher level rather than the trigger of "just enough".
When you're concerned, you need to share it, to speak up, to take account of it because it's a very effective alarm signal.
So, as far as you or other stakeholders are concerned, this doubt has to be taken into account for patient safety purposes.

Claude Valot

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« WHEN YOU'RE CONCERNED, YOU NEED TO SHARE IT, TO SPEAK UP, TO TAKE INTO ACCOUNT OF IT BECAUSE IT'S A VERY EFFECTIVE ALARM SIGNAL »

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Each time we read an incident report, we often can't help thinking: « It probably would have gone better if they had done X or Y ... » Of course, post event analysis is always easier and that is precisely the benefit of experience sharing. This allows us to question ourselves by reading about what our colleagues have experienced. Let's take advantage of this opportunity.
In several events sent to ASN, it seems that a good briefing would have made the team's life easier.

A briefing? What for ?

Without claiming to establish an exhaustive list of good reasons to conduct a briefing, here are some advantages of this tool used several times each flight in civil aviation.

A briefing allows:

- to share the plan of action and make sure everyone understands,
- to review the risks,
- to establish a plan B,
- to invite all team members to share any information deemed useful and to express their doubts, throughout the mission,
- to share personal risk factors, such as fatigue, stress, discomfort, lack of habit, etc...

A briefing significantly improves team performance through synergistic integration of individual performance. Just like a checklist, ten seconds invested in a briefing are potentially ten minutes saved later.

To invite others to express themselves? How about my ego?

In order to conduct a good briefing, it is necessary to succeed in balancing one's ego. It is necessary to accept one's own fallibility. It is necessary to accept each team member's expertise, to see him or her as an ally, and to balance individual responsibilities with the shared goal. At all times, the only good question to ask yourself is: « What is best for the safety of the patient ? »

A good briefing also allows the leader of the team to establish his leadership. Let us remember that having to show authority means you are lacking authority.

A briefing? How to ?

A briefing must be brief so as not to lull those who receive it. It must be conducted at an appropriate time, when everyone is available, during a real « time out ». As is the case in developing any new skill, performing an effective briefing requires practice. At the beginning, it is easier to rely on a « briefing card » that you will build according to your own preferences. In terms of content, the points listed above are an excellent start.

REPORT'in

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ACUTE RESPIRATORY FAILURE IN PACU

A 40-year old black, morbidly obese patient came for a colonoscopy. She didn't speak French very well and the medical documentation was not complete. Her oxygen saturation before anaesthesia induction was about 86 % (ambient air) with some expiratory wheezing. The anaesthesiologist decided to proceed with general anaesthesia (injecting propofol and remifentanil with insertion of a laryngeal mask). During the procedure, she required a high-level of oxygen to maintain adequate blood oxygenation.
The patient was admitted into the PACU between 11:00 a.m. and 3:00 p.m.. She had a severe acute bronchospasm during the recovery period. She was restless so there was great difficulty in monitoring her vital signs. Suddenly, an asystole occurred but the PACU nurse thought that it was an artefact due to the disconnection of the monitoring system. In fact, it was a real asystole due to acute hypoxemia (SaO_2 55%) despite the high-level of oxygen administered. The anaesthesiologist A1 called for help and asked for a crush induction to intubate the patient. He ordered chest compression. Unfortunately, suxamethonium was not available in this PACU so he pushed the alarm signal. A person arrived with this drug. The A1 dealt with oxygenation despite some trouble with manual ventilation and the Digby Leigh valve. After the intubation, the oxygenation quickly rose up with return to a normal cardiac activity. The expiratory wheezing was heard during chest auscultation. Finally, the patient woke up completely and explained that she had met a pulmonologist a few days before for instability of her chronically obstructive pulmonary disease. She also reported that she had smoked before anaesthesia and that she had being breathless for two weeks. Nothing was noted in the anaesthesia documentation.

Good points : *good outcome*
Ways for improvement: *high quality documentation (even if there is some difficulty to understand) / inadequate clinical assessment / No Go in case of doubt / suxamethonium available in the crash cart / planning / situation awareness*
KEY WORDS: No Go / bronchospasm / situation awareness

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Analysis of the incident (adapted from Systems Analysis of Clinical Incidents: London protocol [5]

CONTRIBUTORY FACTOR TYPE	CONTRIBUTORY FACTORS
Patient Factors	Lack of comprehension Black patient (difficulty to see cyanosis) Tobacco use Exacerbation of asthma (SaO_2 86 % in ambient air)
Individual (Staff) Factors	Inadequate information of patient Inadequate clinical assessment
Task and Technology Factors	Colonoscopy: ''just a routine operation'' Angry, hungry ?
Team Factors	Solitary nurse in PACU Difficulty in calling for help
Work Environmental Factors	Lunch period Lack of fridge for storage of suxamethonium in PACU Manual ventilation and with balloon equipped with a Dig-by-Leigh valve
Organisational & Management Factors	Reduced Financial Resources (solitary nurse, ...) Too many PACU in the same hospital Pressure to proceed
Institutional Context Factors	Constrained resources for social security

SIMULATION WITHOUT COGNITIVE AIDS

During a high-fidelity simulation course, I talked with a CRNA at the end of the debriefing. The discussion was about the treatment in case of systemic local anaesthetic toxicity. I told him that it was dangerous to inject amiodarone for a ventricular fibrillation if the local anaesthetic toxicity was suspect.
A few minutes later, I was in charge of a patient who had had an axillary block. Suddenly, the patient experienced seizures and then ventricular fibrillation. While I was calling for help, a nurse carried out chest compression and defibrillation. I spoke up and shared my diagnostic assessment. I said: ''It's a systemic local anaesthetic toxicity''.
After the third electric shock, I ordered a direct intravenous injection of a 300mg-bolus of amiodarone. Two minutes later, the instructor stopped this case and consequently I realised during the debriefing that I'd made a mistake. Because I was stressed, I didn't use my knowledge fully to avoid the situation.

Good points : *diagnosis assessment / early defibrillation / knowledge*
Ways for improvement: *managing stress / cognitive aids / double-check / teamwork*
KEY WORDS: simulation / cognitive aids / toxicity

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C-SECTION AND NIGHT SHIFT

A pregnant woman arrived at night for an urgent C-section. The baby was in the breech position.
The woman came from her home with a cervix dilated to 8 cm. She was in extreme pain and was screaming. She refused a normal delivery so a C-section was confirmed. She arrived in the operating room and after three attempts the anaesthetist managed to perform a spinal anaesthesia (difficult landmarks and overweight). While the anaesthesia was beginning an intravenous 1000cc-coload fluid administration was administered. After the birth of a healthy child, 20 mg of nefopam was added to the solution. When the bag was empty, he realised that it was a 1-litre IV bag of glucose 5 % instead of a ringer lactate solution. He talked about this mistake to the midwife who placed the bag. She reported that she noticed that she had chosen the wrong bag. She removed it but she didn't check what was written on the new one. She had picked it up of the shelf in a specific storage area devoted to ringer lactate bags. This storage area was at the back of a narrow and dark room with few lights. Also one of the ceiling lights was out of order. No harm.

Good points: *debriefing with analysis of contributing factors*
Ways for improvement: *double-check / fatigue risk management / impact of stress on error recovery / reduce bag volume / ergonomy for storage of pharmaceutical drugs*
KEY WORDS: medication error / fatigue / emergency

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DISCOMFORT AND FEAR OF JUDGEMENT

This case took place during a temporary employment of an anaesthetist in a private hospital. A young anaesthetist began temporary work and was in charge of one operating room. An ASA-2 woman was operated on for a right mammaplasty. No difficult intubation was reported. Neuromuscular blocking agents were missing in his cart so he looked for it asking one of the regular anaesthetist where it was. He laughed and said: '' we never use it here!'' He didn't give up and finally found curare but the neuromuscular monitor was still missing. He proceeded with general anaesthesia and performed the first laryngoscopy too quickly (feeling that the surgeon and his attendant were spying on him. They were dressed for sterile operation waiting for him). During the second laryngoscopy attempt, the anaesthetist discovered that the mouth opening was limited (not reported in the assessment). He was concerned and said that he had a case of difficult intubation. He finally intubated the patient on his third attempt. No harm but emotional distress and inconvenience with a minor injury on the upper lip. He reported on the platform that he was pressed to proceed without any possibility for open discussion with the team.

Good points : *follow guidelines even if it's not the ''current practice'' of your colleagues.*
Ways for improvement: *neuromuscular blocking monitor missing / briefing with the team in the operating room before induction and at the beginning of the work shift (introduction of all the stakeholders, fatigue and psychological status) / goodwill of the regular anaesthetist regarding temporary colleagues.*
KEY WORDS: morbidity / intubation / curare

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FATIGUE AND REDUCED PERFORMANCE

A resident in anaesthesiology began his night shift at 6:00 p.m., after the handoff with anaesthesia colleagues. The patient was being operated on a coloplasty following severe caustic oesophageal injuries. The surgical team was on duty for emergency cases so they were continuously distracted by phone calls. Moreover, the senior surgeon reported that he had had many consecutive days of work during the past week without any rest period. At the end of the surgery the patient was admitted into intensive care unit as planned. Five hours later, the surgeon didn't remember if he had removed the appendix. He asked for a cervical ultrasonography exam confirming that the appendix was still present. The operating nurse didn't notice it in her checklist report. At midnight, the patient returned into the OR for a cervical appendicectomy, which lasted two hours.

Good points : *error recovery / diagnosis / No harm caused*
Ways for improvement: *sleep loss / multitasking activity / phone call distraction / consecutive days of work (impact on job performance) / lack of briefing with the team about key points / sharing important steps of the procedure with the team / No sign-out checklist*
KEY WORDS: fatigue / emergency / checklist

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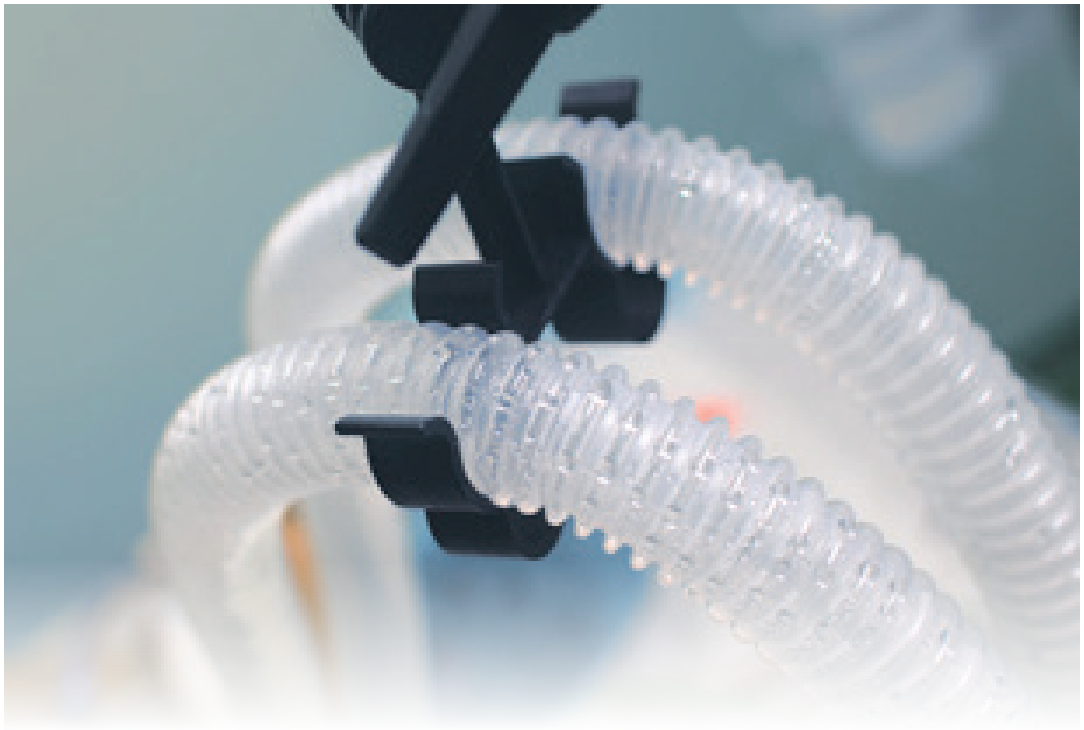

FIXATION ERROR DURING ANESTHESIA INDUCTION

While an anaesthetist (A1) was working in his OR he was disturbed by a nurse who was coming from the next OR and was asking for a stethoscope. She needed one for the anaesthetist (A2) who had "some difficulties". A2 didn't call for help but A1 decided to follow the nurse. When he arrived at the OR, a patient was asleep with tracheal intubation, normal heart rhythm and blood pressure but SaO_2 was collapsing. A2 said that he suspected a severe bronchospasm because it was difficult to ventilate the patient (high pressure during insufflation). There was no capnography signal on the scope with very high insufflation pressure.
Without asking permission from A2, A1 bypassed the machine circuit and switched on the accessory circuit. The ventilation was easily conducted to a rapid recovery of normal oxygenation with normal capnography signal. While the situation was calming down, A2 discovered that the stretcher hadcrushed the pipe. The problem had been solved..

Good points : *the patient was pulled to safety before analysis / Awareness of cognitive bias (fixation error) by A1 / leadership*
Ways for improvement: *hypoxemia cognitive aid / early call for help / communication between stakeholders*
KEY WORDS: fixation error / hypoxemia / breathing circuit

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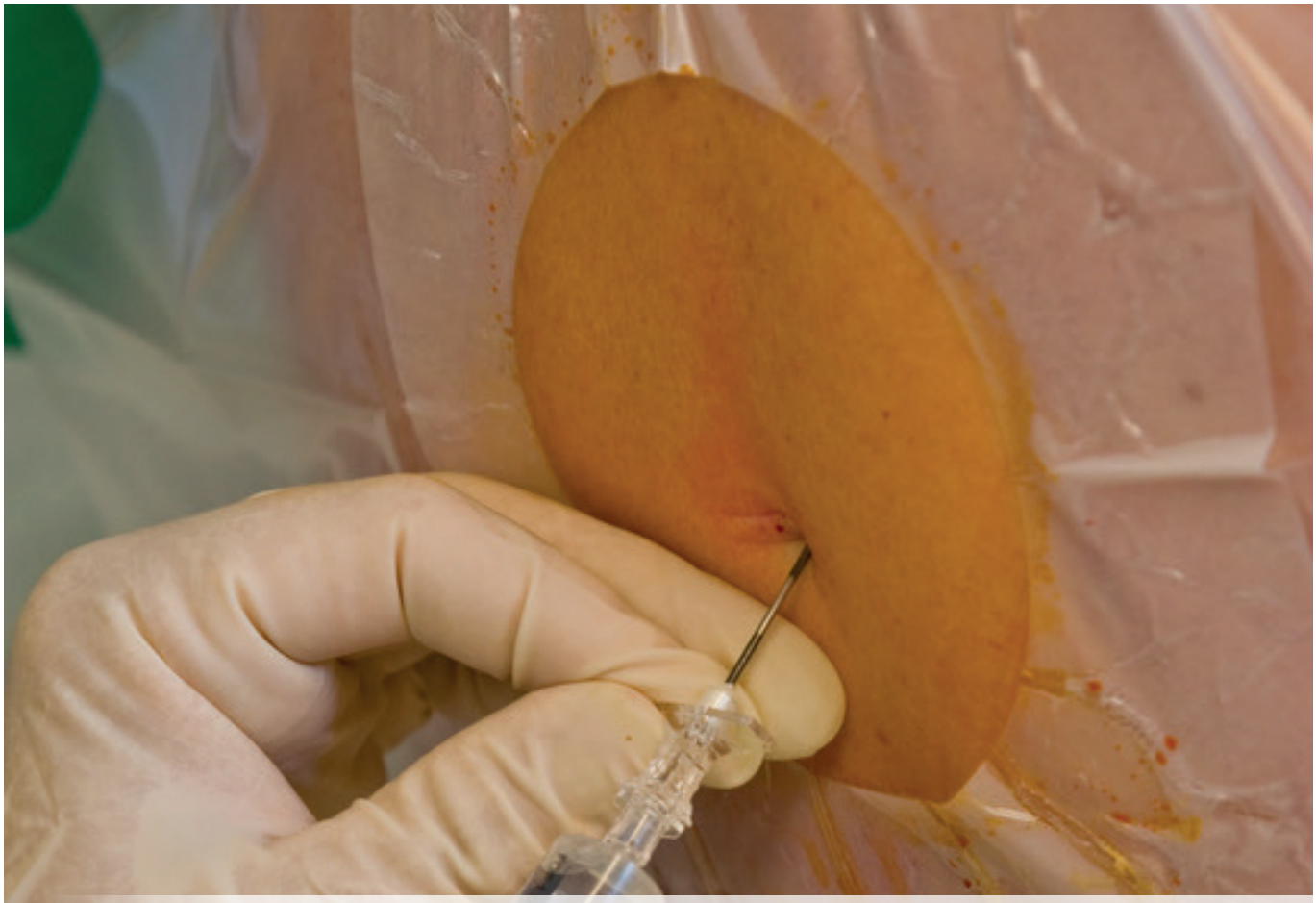

CONFLICT BETWEEN TWO COLLEAGUES

A patient wrote a letter to the anaesthesiology staff about her medical experience after her baby was born. On the Friday, she asked for an epidural analgesia. After many attempts and numerous punctures, the epidural catheter was finally inserted but the patient experienced right leg paraesthesia. Her husband had a vasovagal reaction during the needle insertion and fell on his wife. Moreover, the analgesia wasn't effective. In her room, in the evening, the woman reported some positional headaches. The nurse on the ward mentioned the possibility of a post-dural puncture (PDM) that could be treated with a blood patch. The headache persisted all of the weekend, but the patient didn't see any medical doctor. On the Monday, she was given a blood patch before her discharge from the hospital. The anaesthetist on duty declared that post-dural puncture wasn't noted on the epidural report so he refused to perform a blood patch despite the persistent demands of the nurse. Despite being discharged earlier, she went back to the emergency room at midnight complaining of severe headache. She was treated with benzodiazepine and then returned to her home. On the fourth day, she called fifteen mobile emergency services and was taken to another hospital. The brain scan performed was normal and she was healed with this "famous" blood patch. She recovered completely the same day.

Good points : *outcome / diagnosis suspected by the nurse*
Ways for improvement: *ineffective communication with patient / poor information / no physical examination to eliminate differential diagnosis / Desire to get back at his colleague through the patient*
KEY WORDS: conflict / communication / ethical purpose

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TRANSURETHRAL BLADDER RESECTION IN THE LATE EVENING

The last patient (sort of a VIP recommended to the surgeon by a colleague) arrived into the OR according to the surgeon a "short and easy" transurethral bladder resection. It was 6:30 p.m. and all the stakeholders were exhausted (long work shift of about 12 hours with stressful surgeries). The surgeon was angry, and he was uncomfortable and stressed. He wanted to treat this patient quickly, but he discovered a radiation cystitis. This case was difficult and a few minutes later, the anaesthetist was informed that the bladder wall had been perforated. The surgeon stopped the procedure and called for an assistant. A laparotomy was performed, and the hole was closed surgically. Then the patient was admitted into PACU at 9:30 p.m. He returned the next day into the OR for a bladder haemorrhage, which needed a blood transfusion.

Good points : *diagnosis and treatment*
Ways for improvement: *pressure to proceed / wrong planning of interventions (late arrival in the OR of a complex case) / No briefing – No checklist performed / impact of fatigue on performance / cognitive overload / delusion of performance / overconfidence*
KEY WORDS: fatigue / check-list / briefing

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ASPIRATION DURING COLONOSCOPY

On the second day as an interim professional in this hospital, a anaesthetist was in charge of the colonoscopy program with a CRNA. The second patient was overweight, and the venous catheter despite four attempts was difficult to insert and delayed the procedure. The gastroenterologist was impatient and nervously shaking her head. She asked her assistant to press the abdomen of the patient to pass the left colonic angle. After three minutes, the patient began to throw up and the interim anaesthetist decided to intubate the patient to protect her from pulmonary aspiration. The gastroenterologist yelled: ''it isn't useful! ... It's crazy! ...you're unfit'' After the tracheal intubation using crush induction procedure, the colonoscopy ended and the patient was transferred into the PACU. The chest radiography confirmed pulmonary aspiration and antibiotics were administered for 7 days. The patient was informed, and she was discharged the next day.

Good points : *call for help / treatment*
Ways for improvement: *ravoid fixation errors / teamwork / positive attitude toward all the stakeholders / no blame / no shame culture / goodwill*
KEY WORDS: pressure to proceed / pulmonary aspiration / colonoscopy

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TAKE HOME MESSAGES

- **Doubts have to be voiced to the team**
- **Fatigue awareness is reduced when you're exhausted**
- **Fatigue impact on performance**
- **Common goal: patient outcome**

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OUTSTANDING WEBSITES

The Trick To Surviving A High-Stakes, High-Pressure Job ? Try A Checklist at https://www.npr.org/2017/10/30/559996276/the-trick-to-surviving-a-high-stakes-high-pressure-job-try-a-checklis

AHRQ (Agency for Healthcare Research and Quality) - TeamSTEPPS® 2.0 : https://www.ahrq.gov/teamstepps/index.html

COMING SOON

· JEPU Anesthésie et Réanimation – Paris – Porte Maillot – 23 au 24 Mars 2018

· Euroanaesthesia 2018 – Copenhague – Danemark - 2 au 4 Juin 2018

· International Forum on Patient Safety and Quality – Copenhague – Danemark – 1 Juin 2018

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