

Manitoba Health, Healthy Living & Seniors (MHLS) supports reporting and learning from patient safety events. The focus of a patient safety review is to closely look at the health care system that surrounds and interacts with those giving and receiving care. The goal is to identify risks to patient safety and recommend the most effective ways to minimize risk and improve the delivery of healthcare.

Patient Safety Learning Advisory

Deteriorating Patient Condition Associated with Medical Gas System Dysfunction

Summary:

An elderly patient with few medical conditions or health issues presented to an Emergency Department with a three day history of nausea, vomiting and upper abdominal pain. At the time, influenza was known to be in the community. The patient did not have any signs or symptoms of an acute condition except for an elevated white blood count. Vital signs were recorded within normal limits for their age. The patient was admitted to hospital where he/she received therapy to correct dehydration. It was noted that the patient had previously indicated in an advance care plan the desire to not be resuscitated.

Approximately 32 hours later, the patient began to exhibit behaviour that was described as “strange” by their family in addition to being upset and confused regarding where they were. When health care providers were summoned by family members to assess the patient, they found the patient’s oxygen levels low, the patient short of breath and confused about their whereabouts.

Following the administration of high concentration oxygen, diagnostic tests showed right lower lobe pneumonia, possibly related to aspiration. Aspiration pneumonia is an inflammation (usually due to an infection) of your lungs and bronchial tubes that occur after you inhale foreign matter.

Challenges were noted during attempts to provide high concentration oxygen with the medical gas equipment; there were difficulties with getting adequate pressure from the medical gas system despite attempts using a number of different oxygen regulators. During this time, the patient did not receive supplemental oxygen to treat his/her oxygen deficiency.

Despite aggressive treatment, the patient’s condition continued to decline. Medications/ treatments were administered for distressing symptoms. Despite this, their condition continued to deteriorate and the patient died approximately seven hours later.

Keywords: medical gas system safety

Drug/Name/Fluid Name: (if applicable): Oxygen

Type of Analysis: single event

Topic: Device

Findings of the Review:

- The wall oxygen outlet near the bed was damaged.
- The condition of the medical gas system located behind the wall may have been disturbed by the bed frame with a monkey bar apparatus attachment.
- No standardized regional process for medical gas system functioning checks was in place.
- The patient may not have been receiving adequate oxygen flow potentially further compromising his/her respiratory status.
- The patient's respiratory status declined rapidly that changed the main focus of the healthcare providers at the time of the event. The healthcare providers respected the patient's advanced healthcare directive and wishes of no CPR or mechanical interventions/life support.
- The patient's diagnostic blood work results were received at the facility post patient demise supported that the patient had experienced a cardiac event.
- Documentation regarding the clinical condition of the patient receiving oxygen therapy and their response to therapy was inconsistent.

System Learning:

- Facilities need to be made aware and mitigate the risk when apparatuses (e.g. monkey bars) are applied to a bed, for proximity to wall fixtures for safety clearances taking into consideration but not limited to medical gas outlets, regulators, lights, suction canisters etc.
- Develop a regional standard process for Medical Gas System Checks.
- Harmonize the regional policy and procedure for Oxygen Therapy, including the use and documentation of portable oxygen tanks/concentrators.
- Educate all healthcare providers on oxygen therapy policy and procedure specific to portable oxygen tank usage.

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