



# **Department of Veterans Affairs Office of Inspector General**

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## **Healthcare Inspection**

### **Post-Operative Care Case Review Lexington VA Medical Center Lexington, Kentucky**

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## Executive Summary

The VA Office of Inspector General, Office of Healthcare Inspections reviewed allegations that poor post-operative nursing care in the intensive care unit led to complications resulting in a patient's death at the Lexington VA Medical Center. The purpose of the inspection was to determine the validity of the allegations.

The complainant specifically alleged the following:

- Delay in obtaining a magnetic resonance imaging of lower extremities.
- Chronic hypotension led to renal failure and paraplegia.
- Intensive care unit and dialysis nurses not present while patient underwent dialysis with dangerous hypotension and dialysis alarm repeatedly active.
- Nursing staff failed to address restlessness and agitation which led to negative pressure pulmonary edema.
- Nursing staff assigned did not attend to the patient for 4 hours.
- Pulse oximeter alarm was turned off with oxygen saturation levels under 90 percent.
- Nursing staff prodded family to initiate a do not resuscitate order in the presence of the patient who was mentally intact.
- Nursing staff failed to keep atropine (a drug that increases and regulates the heart rate) at the bedside as per physician order.

This was a patient who had many complications during his post-operative course. We concluded the nursing care provided in the intensive care unit was appropriate.

We substantiated the allegation that the pulse oximeter alarm was turned off. However, during our review of the above allegations, we found it difficult to navigate through nursing care flow sheets and progress notes in the medical record.

We recommended that alarm systems in the intensive care unit remain activated and functional at all times. We also recommended the establishment of processes to improve medical record documentation of nursing care provided in the intensive care unit.



**DEPARTMENT OF VETERANS AFFAIRS**  
**Office of Inspector General**  
**Washington, DC 20420**

**TO:** Director, VA Midsouth Health Care Network (10N9)

**SUBJECT:** Healthcare Inspection – Post-Operative Care Case Review, Lexington  
VA Medical Center, Lexington, Kentucky

## **Purpose**

The VA Office of Inspector General (OIG), Office of Healthcare Inspections reviewed allegations that poor post-operative nursing care in the intensive care unit (ICU) led to complications resulting in a patient's death at the Lexington VA Medical Center (medical center). The purpose of the inspection was to determine the validity of the allegations.

## **Background**

The medical center consists of two divisions located in Lexington, Kentucky. The Cooper Division, adjacent to the University of Kentucky Medical Center (UKMC), provides acute medical, neurological, surgical, psychiatric, ICU, emergency care, ambulatory surgery, hemodialysis, and outpatient primary and specialty care. The Leestown Division offers inpatient post-traumatic stress disorder treatment, nursing home care, hospice and respite services, home based primary care, prosthetics and orthotics, geriatrics, optometry, mental health, and substance abuse treatment as well as primary care and women's health.

The complainant contacted the OIG hotline division with allegations that her father received poor nursing care in the ICU which led to post-operative complications resulting in her father's death. The complainant specifically alleged:

- Delay in obtaining magnetic resonance imaging (MRI) of lower extremities.
- Chronic hypotension led to renal failure and paraplegia.
- ICU and dialysis nurses not present while patient underwent dialysis with dangerous hypotension and dialysis alarm repeatedly active.
- Nursing staff failed to address restlessness and agitation which led to negative pressure pulmonary edema.

- Nursing staff assigned did not attend to the patient for 4 hours.
- Pulse oximeter alarm was turned off with oxygen saturation levels under 90 percent.
- Nursing staff prodded family to initiate do not resuscitate (DNR) order in the presence of the patient who was mentally intact.
- Nursing staff failed to keep atropine (a drug that increases and regulates the heart rate) at the bedside as per physician order.

## Scope and Methodology

The inspection included interviews with the complainant, medical center leaders, vascular surgeons, intensivist, nurse manager, nursing supervisor, and nursing staff involved in the case. We conducted a review of the patient's medical record, relevant policies and procedures, and other pertinent case related documents. We conducted a site visit on December 14-16, 2009.

We conducted the inspection in accordance with *Quality Standards for Inspections* published by the President's Council on Integrity and Efficiency.

## Case Summary

The patient, a man in his early 60's, had a history of hypertension, hyperlipidemia, single coronary artery bypass graft, and was a pack/day smoker for 30-40 years. In 2009, the patient was diagnosed with a 5.3 centimeter infrarenal (below the kidneys) abdominal aortic aneurysm (AAA) on a screening exam, which was then further assessed with a computerized tomography (CT) of the abdomen.

The patient had undergone preoperative evaluation including a stress test and was deemed an appropriate candidate for AAA repair. The resident physician discussed risks and benefits in detail with the patient and his family, who elected to proceed.

In early June 2009, the patient was admitted for elective open AAA repair. He remained stable throughout the surgery without immediate complications. The patient was transferred to the surgical ICU and remained on a ventilator (machine that assists breathing) overnight. On postoperative day (POD) 1, the patient reported some bilateral lower extremity numbness and had decreased urinary output.

The morning of POD 1, the patient was placed on continuous positive airway pressure ventilation. On POD 2, the patient was suffering atelectasis (partial or total collapse of a lung) of the left lung and increasing dyspnea (difficulty breathing). Renal function continued to steadily decline and bilateral lower extremity numbness increased. The

patient required re-intubation in order to secure an airway prior to transporting him to the UKMC. An MRI of the spine was completed which ruled out an epidural hematoma.<sup>1</sup>

On POD 3, anuria (inability to form urine) and acute tubular necrosis were assessed by the renal service and dialysis was initiated. The patient developed systemic inflammatory response syndrome with subsequent respiratory failure and hepatic decline evident by anemia, hypoglycemia, and abnormal blood chemistries. On POD 4 the patient required a transfusion of two units of red blood cells. On POD 13 he was diagnosed with bilateral lower lobe pneumonia and on POD 16 he underwent a tracheostomy.<sup>2</sup>

Approximately 3 weeks into the hospital course the patient developed bright red blood per rectum. On POD 22 he underwent an exploratory colonoscopy and was found to have a fecal impaction with mild ulceration in the rectum. The patient's renal, respiratory, and hepatic function continued to decline, and tube feedings were initiated.

The patient remained on intravenous (IV) dopamine (drug used to stimulate the heart muscle) and Levophed® (drug used to treat hypotension) throughout most of the hospital course. The patient was slowly being weaned off the ventilator and IV medications and a stomach tube was inserted for feeding.

On POD 39, the patient received a CT scan of the abdomen and pelvis with an incidental finding of free air in the abdomen and ascites (accumulation of fluid). He underwent an exploratory laparotomy<sup>3</sup> and was diagnosed with a perforated rectum. The following day a primary rectal repair and ileostomy<sup>4</sup> were performed without initial complications.

The patient's overall status continued to decline with worsening hepatic function and a non-healing laparotomy incision exuding copious amounts of brown, foul-smelling drainage. The patient was not tolerating the tube feedings and remained dependent on cardiovascular support IV medications as well as the ventilator.

On POD 45, in light of the patient's declining respiratory, cardiovascular, renal, and hepatic status, the family decided to limit invasive procedures. On POD 47, the patient could no longer receive tube feedings and the family agreed to a DNR order. The patient was removed from ventilator support, dopamine was discontinued, and the patient was placed on IV morphine (drug for pain relief) and Versed® (a sedative drug) to alleviate any pain or discomfort. The patient's heart rate continued to gradually decrease until death was imminent, and on POD 48, the patient expired.

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<sup>1</sup> A semisolid mass of blood in the tissue outside the membrane covering the brain and spinal cord.

<sup>2</sup> A hole cut in the trachea to ensure the airway is unblocked or to suck out secretions.

<sup>3</sup> A surgical incision through the abdominal wall made to allow investigation of an abdominal organ or diagnosis of an abdominal disorder.

<sup>4</sup> A surgical operation in which an opening is made through the abdominal wall into the lowest portion of the small intestine (ileum) so that waste can be discharged out of the body without passing through the colon.

## **Inspection Results**

### **Issue 1: Delay in Obtaining an MRI of Lower Extremities**

We did not substantiate the allegation that there was a delay in obtaining an MRI ordered by the attending physician.

The MRI was ordered and completed on POD 2 to rule out an epidural hematoma. The patient's respiratory status was compromised and he required re-intubation in order to secure an airway. A CT scan followed to confirm correct breathing tube placement. He was then transported to the UKMC where the MRI was completed and the epidural hematoma was ruled out.

### **Issue 2: Chronic Hypotension Led to Renal Failure and Paraplegia**

We did not substantiate the allegation that the patient suffered chronic hypotension leading to renal failure and paraplegia.

A review of the medical record, physician orders, and medication administration records indicated episodes of severe hypotension were addressed appropriately. The patient was diagnosed with acute tubular necrosis (death of cells in the tubes of the kidneys) and dialysis was initiated.

Documentation indicates the paraplegia was likely caused by spinal cord ischemia at the time of the AAA repair. Kidney failure and nerve or spinal cord injuries with paralysis are known risks of the AAA repair procedure and were disclosed in the signed consent form.

### **Issue 3: ICU and Dialysis Nurses Not Present During Dialysis**

We could not substantiate or refute the allegation that the ICU and dialysis nurses were not present while the patient underwent dialysis with dangerous hypotension and the dialysis alarm repeatedly active.

The dialysis nurse initiated dialysis treatment for this patient in the ICU and reported to the ICU nurse for his care. Local policy indicates when dialysis is initiated, the nephrologists assess the patient, dialysis nursing staff coordinates nursing care with ICU nursing staff, and vital signs are monitored hourly.

During our interview the dialysis nurse told us she left the unit and was paged about 10 minutes later. The machine was alarming, therefore the dialysis nurse returned to troubleshoot, reset the machine, and re-start dialysis. The dialysis nurse called the unit to check on the patient about 10 minutes later and the machine was alarming again. The dialysis nurse returned to the ICU again to troubleshoot and reset the machine, and re-started dialysis without further issues.

A review of the medical record indicates the attending nephrologist assessed the patient when dialysis was initiated and that the dialysis nursing staff coordinated nursing care with ICU nursing staff. However, we could not clearly establish the frequency of the vital signs obtained or the re-setting of the dialysis machine. No complications were noted with dialysis based on the documentation reviewed.

#### **Issue 4: Nursing Staff Failed to Address Restlessness and Agitation**

We could not substantiate or refute the allegation that nursing staff failed to address restlessness and agitation which led to negative pressure pulmonary edema.

Interviews with the vascular surgeon and the Acting Chief of Surgery indicated restlessness and agitation were not likely to cause negative pressure pulmonary edema. The patient was in acute adult respiratory distress syndrome documented on POD 2 and suffered multiple pulmonary complications throughout his admission to ICU.

Documentation in the medical record does not address restlessness and agitation on the date of the above allegation.

#### **Issue 5: Nursing Staff Did Not Attend to Patient**

We did not substantiate the allegation that nursing staff failed to attend to the patient for four hours.

A review of the medical record indicates the nurse provided tracheostomy care during the time frame in question. The nurse also obtained a consent form for an invasive line from a family member which was scanned into the medical record during the alleged timeframe. In addition, the patient had a portable abdominal x-ray completed by a technician during the nurse's shift.

#### **Issue 6: Pulse Oximeter Alarm Turned Off**

We substantiated the allegation that the pulse oximeter alarm was turned off and the patient's oxygen saturation was under 90 percent at various intervals.

The ICU nurse assigned to the patient on the date and time of the allegation admitted to being unaware of the pulse oximeter alarm being off during the shift. We reviewed 22 pulse oximeter readings recorded during the shift and 7 readings were between 86-89 percent oxygen saturation. The renal specialist examined the patient during this time frame and documented the patient was breathing comfortably with the tracheostomy collar. We found no documentation of respiratory distress in the progress notes for the period in question.



The nurse took full responsibility for not checking the alarm prior to starting the shift. Other alarms were on and working properly. The nurse manager had been made aware of the issue and documented discussing the incident with the nurse at that time.

### **Issue 7: Nursing Staff Prodded for DNR Order in Patient's Presence**

We could not substantiate or refute that nursing staff prodded family to initiate a DNR order in the presence of the patient who was mentally intact.

Documentation by the physician in the medical record indicates DNR instructions were addressed by the family three days prior to the patient's death. Additional instructions and a DNR order were documented by another physician the following day (date of the allegation). The nursing note that day indicates the patient was obtunded and lethargic. The palliative care team documented the patient was unable to communicate.

### **Issue 8: Nursing Staff Failed to Keep Atropine at the Bedside**

We substantiated the allegation that nursing staff failed to keep atropine at the bedside per physician orders.

In order to ensure safe storage of medication, local policy and The Joint Commission standards require locked area carts on the units. Atropine is available inside various carts in close proximity throughout the ICU.

A cardiology note in the medical record recommends keeping atropine at the bedside; however, this is against local policy. While not at the bedside, atropine is readily available at all times in the ICU.

## **Conclusions**

This was a patient who had many complications during his post-operative course. We concluded the ICU nursing care provided was appropriate.

We substantiated the allegation that the pulse oximeter alarm was turned off. However, during our review of the above allegations, we found it difficult to navigate through nursing care flow sheets and progress notes within the medical record. In view of the documentation issues identified, the ICU charge nurses are completing daily random medical record audits. We also substantiated that atropine was not kept at the patient's bedside, however because keeping medication at patients' bedside is against local policy and The Joint Commission standards, the medication was accessible in a locked cart on the unit.

## Recommendations

**Recommendation 1:** The VISN Director ensures that the Medical Center Director and nursing leadership require that alarm systems in the ICU are activated and functional at all times when in use.

**Recommendation 2:** The VISN Director ensures that the Medical Center Director require processes be established to improve medical record documentation for nursing care in the ICU.

## Comments

The VISN and Medical Center Directors concurred with the inspection results (see Appendixes A and B, pages 8–11, for the full text of their comments and completed actions). The actions taken are acceptable and we consider the recommendations closed.

*(original signed by:)*

JOHN D. DAIGH, JR., M.D.  
Assistant Inspector General for  
Healthcare Inspections

## VISN Director Comments

**Department of  
Veterans Affairs**

**Memorandum**

**Date:** April 13, 2010

**From:** Network Director (10N9), VA Mid South Health Care Network  
(VISN 9)

**Subject:** **Healthcare Inspection – Post-Operative Care Case Review  
Lexington VA Medical Center, Lexington, Kentucky**

**To:** Director (54DA), Dallas Office of Healthcare Inspections

1. I concur with the findings and recommendations of the Office of Inspector General review of this individual case from the Lexington VA Medical Center as well as with the actions implemented by the facility.

2. If you have questions or require additional information from the Network, please do not hesitate to contact Pamela Kelly, Staff Assistant to the Network Director, at 615-695-2205.

*(original signed by:)*  
John Dandridge, Jr.

## Medical Center Director Comments

**Department of  
Veterans Affairs**

**Memorandum**

**Date:** April 13, 2010

**From:** Director (596/00), Lexington VA Medical Center

**Subject:** **Healthcare Inspection – Post-Operative Care Case Review  
Lexington VA Medical Center, Lexington, Kentucky**

**To:** Network Director (10N9), VA Mid South Healthcare  
Network (VISN 9)

1. The complaints outlined in this case had been reviewed extensively at the medical center as well as by outside nursing reviewers at the facility's request. In December 2009, arrangements were made for the family to meet with key medical center staff to discuss in person their concerns and the results of the reviews of this case.

2. This additional comprehensive on-site review by the Office of Inspector General staff helped validate the previous findings. Actions in response to the identified improvement opportunities have been completed with ongoing monitoring in place. Full implementation of the new CliO CPRS software once available will further enhance and improve nursing documentation in CPRS.

*(original signed by:)*  
Sandy J. Nielsen, FACHE

## **Director's Comments to Office of Inspector General's Report**

The following Director's comments are submitted in response to the recommendations in the Office of Inspector General's report:

### **OIG Recommendations**

**Recommendation 1: The VISN Director ensure that the Medical Center Director and nursing leadership require that alarm systems in the ICU are activated and functional at all times when in use.**

**Concur**

**Target Completion Date: Complete**

The facility acknowledges the importance of ensuring that alarm systems in the intensive care unit are activated and functional at all times when in use. As noted in the report, the Nurse Manager did discuss this incident with the nurse involved as soon as that problem was identified. This case has been extensively reviewed at numerous levels since the complaint first surfaced to the facility. In early November 2009, the Associate Director for Patient Care Services (ADPCS) requested the Nurse Manager to implement a new system of ongoing monitoring of alarm management. Charge nurses check daily to ensure that all required alarms are on and that parameters are appropriate. These results are reported to the Nurse Manager and are now being aggregated for weekly reporting to the ADPCS. To reinforce the importance of this, the ADPCS and Nurse Manager have recently developed a statement of expectations relative to alarm management, which has been signed by all individual nurses working in the ICU. In pursuit of a hard-wired fix, the facility has also been in communication with the equipment manufacturer (Phillips) and has recommended future equipment modifications that would prevent the alarms from being disabled.

## **Director's Comments to Office of Inspector General's Report**

**Recommendation 2: The VISN Director ensures that the Medical Center Director require processes be established to improve medical record documentation for nursing care in the ICU.**

**Concur**

**Target Completion Date: Complete**

A new system for auditing nursing charting practices in the intensive care unit was also implemented in early November. Charge nurses are doing daily concurrent monitoring with individual feedback and next day follow up to ensure that any noted documentation deficiencies have been corrected. Actions including written counseling have been taken as needed to improve individual performance. Implementation of the new VA CPRS CliO charting system is on the horizon (anticipated within 1-3 months) and will also facilitate better documentation via direct entry of flow sheet and other nursing information directly into CPRS.

## **OIG Contact and Staff Acknowledgments**

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OIG Contact	Linda G. DeLong, Director Dallas Office of Healthcare Inspections 214-253-3331
Acknowledgments	Wilma I. Reyes, Team Leader Marilyn Walls Michael Shepherd, MD Laura Dulcie, Program Support Assistant Misti Kincaid, Program Support Assistant

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