

Investigation into Potential Bloodborne Pathogen Transmission Following an Infection Prevention Breach at Neosho Memorial Regional Medical Center – Neosho County, July 2013 - March 2014



Background

On July 10, 2013, Neosho Memorial Regional Medical Center (NMRMC) contacted the Kansas Department of Health and Environment (KDHE) to report an infection prevention breach in colonoscopy reprocessing. On January 3, 2013, the hospital introduced a new model of colonoscopy with an auxiliary water channel that was not present on previous models in use at the hospital. The manufacturer's protocol states to clean and disinfect this channel between patients; however, following the introduction of the new colonoscopy model until the notification of KDHE, this channel was neither cleaned nor disinfected during reprocessing. Patients undergoing colonoscopies during this time period were notified by the hospital, in coordination with KDHE, and an investigation into the potential for bloodborne pathogen (BBP) transmission was immediately initiated.

Methods

Patients receiving colonoscopies between January 3 and July 18 were identified; patients were cross-matched with KDHE's infectious disease surveillance system to identify those who had previously been reported with hepatitis B virus (HBV), hepatitis C virus (HCV), or human immunodeficiency virus (HIV) infections. Patients were notified via mail of the infection prevention breach and the possible exposure to BBPs. In the letter, testing was recommended for HCV [total antibody with reflex to HCV nucleic acid testing via polymerase chain reaction (PCR)], HIV (total antibody), and HBV surface antigen (HBsAg) and core immunoglobulin M antibody (anti-HBc IgM)). For patient procedures less than six months before their initial blood test, repeat testing six months post-procedure date was recommended. The KDHE laboratory and a contract reference laboratory performed testing. Due to the small patient population, detailed HIV results will not be presented.

Key Findings

- Two hundred and seventy-seven patients received colonoscopies from January 3 and July 18, 2013.
- Prior to notification by mail, two patients expired due to unrelated causes of death.
- Through cross-matching, three patients were identified as being previously infected with a BBP.
- Patients resided in nine Kansas counties and three other states.

- Patient ages ranged from less than 18 to greater than 75 years (median age, 62 years), and 50% were male.
- Of the 275 patients available for testing, 248 (90%) completed testing, 22 (8%) were tested initially, but did not complete their six month follow-up blood test, and five (2%) declined testing.
- Of the 22 patients who did not complete their testing, four (18%) expired due to unrelated causes of death prior to their second blood collection date.
- Five (1.8%) patients were identified as having past hepatitis C infections (total antibody positive, PCR negative).
- There is no evidence that BBP transmission occurred as a result of this infection prevention breach.

Conclusions

The risk of BBP transmission following inadequate colonoscope reprocessing is believed to be low; however, the potential for transmission does exist. During this investigation, 98% of patients who underwent a colonoscopy from January 3 and July 18, 2013 at NMRMC were tested at least once for BBPs, and 90% completed testing 6 months after their procedure date. Despite patients infected with BBPs undergoing procedures on the same days as uninfected patients, no evidence of transmission was found.

There have been numerous reports of lapses in the reprocessing of gastrointestinal endoscopes, including colonoscopes¹. These have resulted in the recommendation for thousands of patients to receive BBP testing. Adherence to the reprocessing guidelines is imperative to protect patients from BBPs as well as other microbial diseases. Furthermore, when new colonoscopes are introduced, hospitals must be vigilant in providing adequate training on cleaning and disinfection.

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¹ Dirlam Langlay AM, Ofstead CL, Mueller NJ, Tosh PK, Baron TH, Wezler HP. Reported gastrointestinal endoscope reprocessing lapses: The tip of the iceberg. Am J Infect Control 2013. 41: 1188-94.