Researchers identify predictors for inpatient pain

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Researchers from Mount Sinai School of Medicine have identified reliable predictors of pain by surveying patients throughout their hospital stays about the severity of their pain and their levels of satisfaction with how their pain was managed by hospital staff. Using this data, interdisciplinary teams treating patients were able to identify patients at higher risk for pain prior to, or immediately upon, their admission to the hospital, and create and implement intervention plans resulting in patients reporting lower levels of pain and higher levels of satisfaction with their pain management. The study is published online in the *American Journal of Medical Quality*.

"To our knowledge, this is the first time hospital-wide data on pain severity and levels of satisfaction with pain management have been reported. While the factors that predict patients likely to experience higher levels of pain may not be surprising, we were able to show that awareness of and targeted responses to those factors decrease pain and increase patient satisfaction," said David L. Reich, MD, Professor and Chair of Mount Sinai's Department of Anesthesiology and lead author of the study. "The important point here is that institutions that use their available data and take an interdisciplinary approach to pain management can be successful in improving the patient experience."

Researchers found patients who identified their pain during their hospital admission as moderate or severe were more likely to be younger, female, admitted for longer hospital stays, or using psychoactive medications. Level of pain was also found to vary

depending on the department of the treating physician.

Patients treated by surgical services reported greater pain severity. Prior to identifying the predictors, patients undergoing lower extremity joint replacement in the Department of Orthopaedics reported an average pain level of 5, on a scale of 0 – 10, on the first day after surgery. After analyzing the predictive data, the interdisciplinary team introduced new protocols that altered the types of oral and intravenous medications given, and allowed use of epidural morphine outside of intensive care settings. The average reported pain level decreased to 3.

"The involvement of our nurses and doctors at the bedside in this study is a strength and demonstrates our commitment to understanding and improving pain management, said Carol Porter, DNP, RN, Chief Nursing Officer and a participating author of the study.

For the initial phases of the study, the researchers evaluated clinical and administrative data stored at Mount Sinai on 38,544 adult inpatients from January 2008 through April 2009, to identify a numeric scale of pain severity associated with patient satisfaction. They then developed a model to predict that metric of pain prior to or immediately upon admission to the hospital.

Using the results of the predictive model, an interdisciplinary pain management team developed and implemented practice-based and evidence-based intervention. The researchers then analyzed the responses to those interventions from January 2009 through March 2011, to determine the effect on pain severity and patient satisfaction.

Overall, reported pain levels decreased by 3.6 percent per quarter in 2010 compared with 2009, and patient satisfaction increased. In five of 11 departments, the decrease in pain severity was statistically significant in 2010 compared with 2009. No department reported that their patients

experienced increased pain during that time.

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