Development of an Outcome Measure to Monitor the Effectiveness of Pain Management

Patricia Mantell, MSN, RN, NE-BC, CPHQ, Lauren P. Hartwell, BS, and Patricia A. Branowicki, MS, RN, NEA-BC

Attention to the pain that occurs during treatments and procedures for pediatric patients with cancer continues to be a priority. This article describes the development of a pain effectiveness outcome measure at an academic pediatric medical center in order to inform about the implementation of quality improvement strategies and evaluate the effect of these pain interventions within the hospital setting.

Patricia Mantell, MSN, RN, NE-BC, CPHQ, is a nurse manager in Medicine Patient Services, Lauren P. Hartwell, BS, is an analyst in Medicine Quality Improvement, and Patricia A. Branowicki, MS, RN, NEA-BC, is the associate chief nurse of Medicine Patient Services, all at Boston Children's Hospital in Massachusetts. The authors take full responsibility for the content of the article. The authors did not receive honoraria for this work. No financial relationships relevant to the content of this article have been disclosed by the authors or editorial staff. Mantell can be reached at patricia.mantell@childrens.harvard.edu, with copy to editor at CJONEditor@ons.org.

Key words: quality improvement; pain

Digital Object Identifier: 10.1188/14.CJON.30-32

The Joint Commission (2012) estimated in 2001 that more than 76 million people in the United States suffered from pain. This finding was instrumental in prompting new standards for pain management from the Institute of Medicine ([IOM], 2011). The estimated number of Americans suffering from pain currently exceeds 100 million, with an associated cost of at least $635 billion in medical treatment and lost productivity (IOM, 2011). The number of individuals suffering from pain underscores that alleviating pain is a national imperative (IOM, 2011). The purpose of the current article is to describe the development of a nurse-sensitive pain effectiveness measure, and to extend knowledge derived from the evaluation of pediatric pain management performance using existing process measures.

Two million children younger than age 18 years are hospitalized in the United States each year (Price, Stranges, & Elixhauser, 2012). Exactly how many of those children will experience pain is unknown, but pain in children is common and may go unrecognized (Taylor, Boyer, & Campbell, 2008). With 5% of pediatric hospitalizations associated with cancer-related treatment (Price et al., 2012) and with pain identified as one of the top four symptoms in pediatric patients with cancer, treatment of pain in children with cancer must remain a top priority (Baggott, Dodd, Kennedy, Marina, & Miaskowski, 2009; Hockenberry & Hooke, 2007).

Published strategies to improve pain management have focused on evaluation of staff education (McNamara, Harmon, & Saunders, 2012), use of pain assessment protocols (Treadwell, Franck, & Vichinsky, 2002), timeliness of medication administration (Corwin, Kessler, Aurbach, Liang, & Kristinsson, 2012), and enhancement of the assessment process (Kim et al., 2012). Methods for evaluation in those studies included time to intervention, reassessment rates, comparison of patient and staff assessment of pain level, as well as satisfaction with pain management. Process measures commonly are used to evaluate pain management practices because of the many variables that may impact effectiveness of pain-reduction strategies.

Developing a valid and reliable measure for evaluating pain effectiveness is laden with complexity. Determining the effectiveness of a pain management strategy can be confounded by disease state, comorbid conditions, and other variables affecting the perception of pain. Because of this complexity, pain effectiveness rarely is found as a nurse-sensitive outcome measure. Boston Children's Hospital is one of 65 pediatric hospitals submitting pain management data to the National Database of Nursing Quality Indicators (NDNQI), which provides the ability to benchmark performance across institutions (Montalvo, 2007). Critically evaluating results of the NDNQI measures prompted interest in the development of an outcome measure to assess the percent reduction in documented pain scores postintervention. The creation of the measure would provide a means to evaluate the effect of pain interventions across geographic units or diagnostic groups.

The Model for Improvement (Langley et al., 2009) was used as a framework for building and applying knowledge. This model incorporates plan-do-study-act cycles and defines what will be accomplished, how change will be assessed, and what changes will result in improvement (Langley et al., 2009). The goal of this project was to improve the effectiveness of pain management and evaluate whether pain management strategies reduced pain. The primary focus of the project involved (a) determining the feasibility of developing and executing a standardized measure to monitor pain effectiveness, (b) testing the use