

# Putting Patients in Charge of Their Oral Pain Medication Delivery in Today's Hospitals

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## Summary

Pain management in today's hospitals is influenced by a variety of factors. The trend for more patient involvement in their care, i.e., patient-centered care, a new transparency of hospital quality of care indices and competition between facilities has stimulated more interest in improving the patient experience. The concept of multimodal pain management involving a variety of approaches has revealed a weak link in the process – and that is the inefficient manual delivery of as-needed (PRN) oral pain medication – a key ingredient in multimodal therapy. The manual delivery of PRN pain medication is flawed by the usual nursing tasks overload causing an inherent delivery delay which exacerbates the perception of pain for the patient. The present-day approach to dose PRN oral pain medication by the pain score or pain level has many drawbacks as discussed here. The first oral PCA device to come to market, called the MOD<sup>®</sup> for Medication on Demand, removes the acknowledged weak link in pain management by putting patients in charge of their PRN oral pain medication delivery.

CMS mandated surveys for patient satisfaction (Hospital Consumer Assessment of Healthcare Providers – HCAHPS from [www.medicare.gov/hospitalcompare](http://www.medicare.gov/hospitalcompare)) include a question regarding patient satisfaction with pain management during a recent hospital stay. These results now found on the CMS website provide data for the general public, as well as healthcare professionals for comparing different hospital facilities' quality of care in each community. Because these results impact financial returns to the hospital, an additional incentive to improve pain management has been added to the already known focus for better patient-centered care and pain management for hospitals nationwide.

Multimodal pain management providing a combination of medications and techniques is improving how pain is managed in healthcare facilities (Gandhi & Viscusi, 2009). Both medical and surgical patients require pain management – some with ongoing pain prior to hospitalization and others with acute pain after surgery or trauma. A key factor in pain management is the delivery of oral pain medications that are frequently delivered on an as-needed basis (PRN).

The manual delivery of PRN oral (tablets) pain medication by nursing is an inefficient use of valuable nursing time and frequently results in delivery delays because of the many other demands and interruptions of nursing staff. Delays invoke patient frustration and stress, which further escalate the perception of pain and reduce patient satisfaction with pain management (MOD-02 Clinical Trial). Nursing labor time to manually deliver a single dose of oral pain medication in an inpatient orthopedic post-operative unit has been measured at 10.9 minutes (Pizzi, Chelly & Marlin, 2014). A nurse with four to five patients on PRN oral pain medication can potentially spend three hours during a 12-hour shift to deliver PRN pain medication.

PRN pain medication delivery has changed because of the ongoing debate regarding the ambiguity of range orders and whether nursing staff can adequately judge the appropriate dose for patient administration. A range order for example for oxycodone would be written as “5-10mg oral dose every four hours PRN pain.” This clinician order would rely upon an experienced nurse to judge the appropriate dose of medication according to their assessment of the patient’s pain status upon the patient’s request for medication. The American Society of Pain Management Nursing consensus statement has supported this approach by stating that such an order provides flexibility for nursing staff competent in pain assessment to manage a patient’s pain using appropriate range orders (Drew et al., 2014). However, nursing competency in assessing and managing pain may vary as documented in the results of a survey of six hundred two nurses from an academic center and a multihospital system (Gordon et al., 2008).

Many assume that The Joint Commission (TJC) for hospital accreditation does not approve of range orders for pain management. Yet, the current medication standards cite range orders as a possible order approach provided appropriate policies and procedures are in place for their use (Hospital Accreditation Standards, 2014). This approach relies upon nursing interpretation of policies and orders, which risks hospital accreditation survey citations, a possibility most hospitals aim to avoid. As a means to avoid this hazard, the end result is a change in the way hospitals are scripting their PRN orders for pain. Now, a commonly used dosing regimen for PRN oral pain medication delivery depends upon the level of pain reported by the patient – either in general terms such as low, moderate, or severe or by the numeric pain scale (NPS) usually with low defined as a score of 0-3, moderate 4-6, and severe pain as 7-10.

Although in theory this seems to be a logical, well-defined approach, its rigid application may often be an inadequate way to manage patients’ pain. Consider, for example, a post-operative orthopedic patient with known acute pain transitioned onto oral pain medication from an IV-patient controlled analgesia (PCA) pump. The patient is still experiencing significant pain and will require sizeable dosing of oral opioids for adequate pain management. Patients changing from intravenous to oral pain medication may be reminded to request their pain medication when their numeric pain scale (NPS) number is low to allow adequate time for analgesia to take effect from the oral medication. However, if a patient reports a low score of 2-4, many facilities will not offer sufficient medication to manage the patient’s pain. Instead, the patient may be given acetaminophen or a nonsteroidal anti-inflammatory medication (NSAID) for that pain score. Some facilities actually have no orders for pain management below a numeric pain score of 4.

In this scenario, the patient will not likely receive adequate medication for pain since the patient may experience a continued escalation of inadequately treated pain over the next few hours. Usually, the patient must again request medication when their pain score has climbed up into a higher range to

obtain adequate analgesia, and depending upon the PRN orders, they may need to wait until the next time interval has passed (usually four hours) until they can obtain another dose of pain medication from nursing. From this misadventure, patients quickly learn that they must report a higher numeric pain score number with each request for medication, in order to obtain adequate pain medication that will sufficiently manage their pain. This cycle does not adequately manage the patient's pain and negates a true reporting of the pain score, because it may not result in the delivery of adequate oral medication.

PCA is an acknowledged effective approach for pain management. Multiple applications are available, such as IV PCA, epidural PCA, and regional nerve block PCA (Pasero & McCaffery, 2011). Evidence-based studies have repeatedly shown that putting the patient in charge provides not only better pain management but avoids the delay, frustration, and anxiety when a patient must wait on a busy nurse to deliver each dose of medication (Hudcova, McNicol, Quah, Lau & Carr, 2012). PCA does not eliminate the obvious need for the careful selection and monitoring of those using this modality in any form. Healthcare professionals strive to provide this option only to patients who are mentally capable and responsible, as well as medically eligible to safely self-administer pain medication.



Enter the first oral PCA device to come to market – the MOD<sup>®</sup>, which stands for Medication on Demand. With the MOD<sup>®</sup> device, patients can obtain their own oral pain medication themselves within reach at the bedside safely and securely (Conley, 2015). The need to fabricate an unrealistic pain score in order to obtain adequate pain medication is no longer necessary. The patient is encouraged to honestly report their pain score and press the appropriate pain number button on the device to obtain a dose of medication. Regardless of the pain number entered, the same dose of medication is provided similar to the IV PCA. If the patient needs medication earlier than the programmed lockout time interval in hours, the interval can be reduced to allow more frequent dosing, or a bolus dose can be given from the device.

The current manual delivery is usually one or two tabs of medication every four hours depending upon the reported pain level or numeric pain number. The MOD<sup>®</sup> can deliver a single dose every two hours if needed, thereby allowing the same milligram dose of opioid within a four-hour time frame but in a more continuous fashion. This approach achieves a more steady state analgesic blood level of pain medication and more consistent pain relief (Conley & Cassano, 2015).

The wireless MOD<sup>®</sup> device is programmed by nursing for the clinician-ordered lockout time interval in hours between allowed doses and loaded with a MOD<sup>®</sup> tray of eight doses of oral (tablets) medication. The patient wears a radio frequency identification (RFID) wristband registered only to the patient's device. When the appropriate lockout interval in hours has passed, a green light on the device informs the patient of the medication availability when needed. To obtain a dose of medication, the patient pushes the appropriate pain score button on the device to activate the RFID reader. When the patient holds the wristband near the device and the RFID reader recognizes the registered patient to that device, the dispenser wheel turns to expose a single dose of the medication that the patient can remove and self-administer. The device database accumulates the time, date, and pain score entered by the patient at the time of self-administration of the medication. The reassessment mode provides an audible reminder to the patient to re-enter the pain score one hour after each medication

administration to capture reassessment pain score data to monitor the level of pain control achieved by the patient.

The MOD<sup>®</sup> pain database from the patient reflects not only the pain control data from the MOD<sup>®</sup>, but the overall results of the multimodal pain management plan of the patient in table and graphic form (See Figure 1). This data is available from the wireless device in use by each patient within a facility and can be viewed from any computer workstation in the facility. Even further, the data can be uploaded into the electronic medical record to populate the medication delivery times and pain scores for each patient, thereby saving additional nursing time over and above that with the simple wireless MOD<sup>®</sup> deployment. No current electronic medical record vendor provides the snapshot of pain management in a database and graphic form provided from the MODtrac<sup>™</sup> enterprise database. Such data in real time can be a key factor in adjusting and achieving optimal pain management for each patient.

Since the MOD<sup>®</sup> is a PCA device, it is compliant with Joint Commission rulings regarding patient self-administration of medication as per the device adopted protocol, which includes patient selection criteria and appropriate management and documentation.



### Shift Change Report (MOD: MOD 1017)

Patient ID: Sample, Patient  
Report Run Date: 2/11/2015 6:55:28 PM

Date/Time	Event	Order ID	Drug (Dose)	Dose Start Delay	Dose Interval	Pain Value	Verifier	User Name
2/11/2015 18:31	RE	546890000	Oxycodone (5mg)			4		Sample, Patient
2/11/2015 17:16	DS	546890000	Oxycodone (5mg)			5		Sample, Patient
2/11/2015 16:11	RE	546890000	Oxycodone (5mg)			4		Sample, Patient
2/11/2015 15:11	DS	546890000	Oxycodone (5mg)			8		Sample, Patient
2/11/2015 13:36	RE	546890000	Oxycodone (5mg)			3		Sample, Patient
2/11/2015 12:34	DS	546890000	Oxycodone (5mg)			7		Sample, Patient
2/11/2015 12:32	PR	546890000	Oxycodone (5mg)	2:00	0:00		sc	avancen

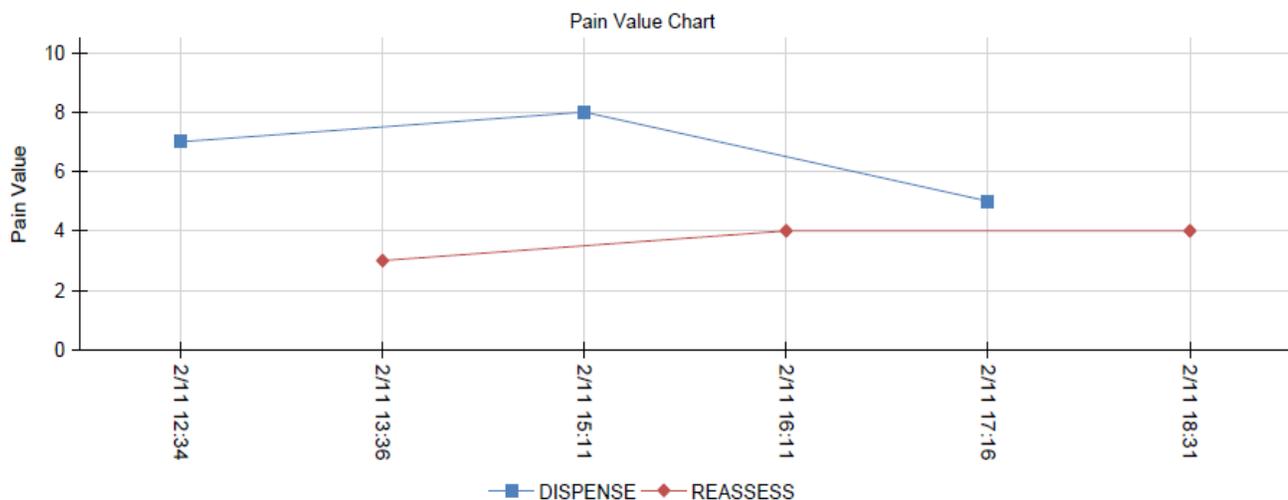


Figure 1 – A MOD<sup>®</sup> Shift Report Sample – Event Abbreviations are DS = Dispense, RE = Reassess, and PR = Program identifier regarding which staff member programmed the device. Verifier is the initial of the second staff nurse that would verify and witness the MOD<sup>®</sup> medication tray loading process.

Evidence-based data is accumulating showing that the use of the MOD<sup>®</sup> as compared to the manual delivery of oral pain medication provides better pain management for hospitalized patients. Rosati et al. (2007) demonstrated that MOD<sup>®</sup> devices were well received for better pain management by patients and nursing staff in an oncology inpatient unit. Lambert and Cata (2014) compared MOD<sup>®</sup> use to a control group of patients receiving oral pain medication from the nursing staff after total knee arthroplasty. The MOD<sup>®</sup> group reported statistically significant lower pain scores and less interference from pain for sleep, appetite, mood, physical therapy, and general activity compared to the control group.

Putting patients in charge of their pain management always proves to be the best approach. Evidence is rapidly accumulating to validate once again as with all other PCA modalities that patient-controlled analgesia with oral pain medications is the best approach for patient satisfaction with pain management.

## References

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6. Hospital Accreditation Standards, The Joint Commission (July, 2014), MM-13 Elements of Performance for MM.04.01.01:
  - A. The hospital has a written policy that identifies the specific types of medication orders it deems acceptable for use. Medication orders commonly used include the following:
    - As-needed (PRN) orders: Orders acted on based on the occurrence of a specific indication or symptom.
    - Range orders: Orders in which the dose or dosing interval varies over a prescribed range, depending on the situation or patient's status.
    - Orders for medication-related devices (for example, nebulizers, catheters).
  - B. The hospital has a written policy that defines the following:
    - The required elements of a complete medication order.
    - When indication for use is required on a medication order.
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