Practice Standard: Electronic Mechanical Pump Selection for Home Administration of Infusion Medications

Introduction

The practice standards of NHIA represent a consensus of professional judgment, expert opinion, and documented evidence. They provide guidance and direction to NHIA members and other audiences who affect the home infusion industry, and the patients served. Their use may help to comply with federal and state laws and regulations, meet accreditation requirements, and improve patient care. They are written to establish reasonable goals, to be progressive and challenging, yet attainable as best practices in applicable home or alternate site settings. They should not be viewed as NHIA requirements. The use of NHIA's practice standards by members and other practitioners should be assessed and adapted based on independent judgment.

Purpose

The purpose of infusion device selection is to ensure patient safety and minimize adverse events, avoid unplanned hospitalizations and emergency room visits, and prevent disruptions in treatment. The Pharmacist and Nurse are responsible for participating in the selection of an appropriate method of administration to be used in delivering parenteral medications to patients infusing medications at home. NHIA has developed a practice standard to help clinicians assess situations and determine when an electronic mechanical pump is recommended to administer an infusion medication.

Practice Standard Development Procedure

An area of practice was identified where information and direction are necessary to promote general standards and quality. The topic of appropriate selection of infusion device has generated a need among practitioners for authoritative advice. There was sufficient experience upon which to base a practice standard and it was relevant to the practice of a significant portion of NHIA's members. The NHIA Quality and Standards Committee, comprised of home infusion professionals, performed a comprehensive review of available evidence. Committee members who are clinical and research experts collaborated on the topic, reviewing industry trends and other data sources such as membership, community, best practices, industry research, review of published literature, or other practice guidelines. A draft practice standard was developed and reviewed by the committee members, and revisions to the draft were incorporated based on consensus. A formal draft of the practice standard was presented for public comment. At the close of the comment period, the committee reviewed the commentary and proposed revisions. The committee made recommendations prior to being finalized and approved.

Target Audience

The target audience includes clinicians, regulatory agencies, reimbursement professionals, and industry stakeholders.

Practice Standard for Electronic Mechanical Pump Selection

Situations where the use of an electronic mechanical pump is strongly recommended to infuse medications in the home:

- Continuously infused medications with a narrow therapeutic index requiring a strictly controlled infusion rate to avoid toxicity and achieve the desired response
    - Example situation: Infusions of inotropic medications
    - Example situation: Certain chemotherapy medications
    - Example situation: Narcotic/opioid patient-controlled analgesia infusions
- Continuous or extended infusions (≥ 3 hours) for patients who self-administer infused medications where dose titration or rate adjustments are required to achieve a clinical response or to avoid an adverse drug reaction.
    - Example situation: Parenteral nutrition formulas with titration/ramping parameters
- Continuous or extended subcutaneous medication infusions.

Situations where a clinician should consider the use of an electronic mechanical pump for medication administration:

- For self-administration of infused medications prescribed on a dosing frequency where adherence to the prescribed dosing schedule may be difficult or interfere with daily activities.
    - Example situation: An antibiotic administered intermittently 3 or more times per day.
- For infusion of medications where the administration period or self-administration are not otherwise easily achieved.
    - Example situation: An extended infusion of a beta-lactam antibiotic over 3 or more hours
- For administration of infusion solutions that require an infusion rate > 250 mL/hr
    - Example situation: Hydration solution with electrolytes administered at 500 mL/hr x 1000 mL
- To facilitate administration through a ‘small bore catheter’
    - Example situation: 3 Fr or smaller

Comments/Contact: NHIA welcomes feedback and suggestions for content to incorporate into future revisions and editions. Contact: standards@nhia.org.

December 2023