Harbor-UCLA MEDICAL CENTER

LOS ANGELES COUNTY DEPARTMENT OF HEALTH SERVICES
HARBOR-UCLA MEDICAL CENTER

SUBJECT: SMART PUMP ADMINISTRATION AND MAINTENANCE PROCEDURE **POLICY NO.** 331

CATEGORY: Provision of Care	**EFFECTIVE DATE:** 9/14
POLICY CONTACT: Jennie Ung, PharmD	**UPDATE/REVISION DATE:** 12/21
REVIEWED BY COMMITTEE(S): Medication Safety Committee	

PURPOSE:
To establish standard medication safety practices when using infusion pumps.

POLICY:
Harbor-UCLA Medical Center nursing staff shall use infusion pumps (smart pump technology) for administration of intermittent intravenous piggyback (IVPB) and continuous drips, including Patient Controlled Analgesia (PCA), Patient Controlled Epidural Analgesia (PCEA), parenteral nutrition, and blood products. Appropriate profile and Master Drug Library (MDL) with predetermined guardrails must be used to ensure safe delivery of intravenous medications. The use of Basic Mode is only allowed if the medication is not available in the MDL.

In emergent medical situations, certain intravenous infusions and blood products may be administered by gravity as ordered by a licensed provider.

DEFINITIONS:
A. BASIC Mode:
BASIC mode is an infusion mode that is used when an ordered drug is not listed in the MDL. BASIC mode does not have a drug error prevention system that detects human errors that could cause adverse drug events.

B. Clinical Advisory:
Clinical advisories are clinically important reminder messages which will be displayed on the infusion pump for specific drugs.

C. Continuous Quality Improvement (CQI) log:
A program that records whenever the infusion pump is used outside the drug error prevention system, such as entering a dose/rate that exceeds soft and hard limits and the frequency of using BASIC mode infusion. Event analysis reports will be created from the CQI log in pump software.

REVISED: 9/15, 4/16, 10/18, 11/18
REVIEWED: 9/14, 10/15, 4/16, 11/18, 12/21

APPROVED BY:

Anish Mahajan, MD
Chief Executive Officer

Anish Mahajan, MD
Chief Medical Officer

Jason Black, MBA, DNP, RN
Chief Nursing Officer

D. Dose Rate Limits:
   1. Soft dose rate limits may be exceeded by the user override function.
   2. Hard dose rate limits cannot be exceeded. Reset rates within the hard limits to start the pump.

E. Master Drug Library (MDL):
   A software tool used by Pharmacy to list every injectable drug found in the hospital formulary and to document associated profile and infusion safe delivery parameters for each drug entry. Each drug entry includes the profile, drug name, concentration, dose rate mode, bolus mode, starting dose rate, soft and hard dose rate and bolus limits, volume to be infused (VTBI), and primary or secondary IV container.

F. Profiles:
   A profile represents a specific patient population. Each profile lists drugs and pump software configurations appropriate to the patient population.

G. Temper-Resistance Button:
   The temper-resistance button is a round black button located on the backside of the Alaris PC unit. The temper-resistance button can be activated when the pump is in the run mode to prevent unauthorized activation of specific key entries.

PROCEDURE:

A. Profiles
1. Standardized drug library will be built to meet patient care needs.
2. A profile must be selected at the time the device is placed on a patient.
3. The receiving nurse is responsible for assuring the proper profile is selected. The selected profile reflects the type of care that is being provided.
4. Only one profile can be used at a time.
5. Hold down the temper-resistance button for 3 seconds to lock or unlock the front panel keypad.

B. Drug Error Prevention System
1. Proper use of the MDL is required. All drug library IV medications will be infused using the drug error prevention system. The use of BASIC mode should only be allowed for medications that are not available in the MDL or in emergent situations.
2. Alerts are based on the drug error prevention system configuration for drug-dosing limits.
   a. Soft limits allow adjustment of rate or dose delivery and are captured on the event analysis report. Soft limits reflect maximum/minimum infusion limits that could be overridden. All the soft limits are determined by physician specialists from each discipline based on their clinical experience/expertise.
   b. Hard limits cannot be adjusted. All the hard limits are determined by physician specialists from each discipline based on their clinical experience. In the rare event that a formulary IV medication is required to be delivered outside of the hard-limit programming, a pharmacist consult, and physician order are required to bypass the use of the MDL to administer the drug via BASIC mode.
3. Clinical advisories will be displayed on the pump screen after certain medication name is selected. The user must acknowledge the message in order to proceed to select an appropriate concentration or infusion rate.
4. The user must check and ensure the name of medication, concentration of the medication, infusion rate

on the medication label match those of the medication chosen in MDL and the order.

5. CQI logs are the quality control portion of this safety system. Pharmacy and nursing managers/designees in consultation with Quality Assessment Department will review CQI data in wireless pumps on a yearly basis and as needed. CQI Data will be reviewed by Medication Safety Committee.
6. CQI logs data from non-wireless pumps will be uploaded by Biomedical Electronics when requested. In order to obtain complete CQI data, all non-wireless pumps must be collected and connected to the designated workstation in Biomedical Department.

C. Equipment Management

1. The infusion pump software will be maintained by personnel from Biomedical Electronics. Biomedical Electronics staff will complete regularly scheduled preventive maintenance and will be responsible for uploading the most current pharmacy-approved MDL into non-wireless pumps.
2. Equipment inventory will be maintained by Biomedical Electronics.
3. All rented/new infusion pumps are to be inventoried, and program activated by Biomedical Electronics.
4. After patient use, the infusion pump must be cleaned by nursing department personnel with appropriate cleaning before use on next patient.
5. The pump will be kept plugged-in when in use, unless being used during patient transportation. When the pump is not in use, the pump should be plugged-in to ensure a fully charged battery whenever possible.

D. Drug Profile, Data Set, and Configuration Updates

1. Comprehensive MDL review and update will be conducted at a minimum of once a year.
2. MDL modification/revision must be approved by the DHS pharmacy smart pump taskforce MDL will be maintained by Pharmacy Department.
3. Pharmacy will verify that the drug information between the IV labels and the MDL is consistent.
4. Changes to the drug library are communicated to the clinical staff via respective departmental managers.

E. Pump Operations & Pump Failure Mode Procedures

Refer to user manuals available on intranet.

Revised and Approved by:
Medical Executive Committee on 12/2021

Beverley A. Petrie

Beverley A. Petrie, M.D.
President, Professional Staff Association