



# Raising the standard for safer PCA therapy

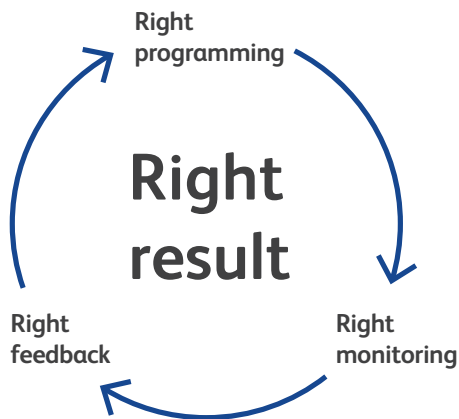
Through the BD Alaris™ System with Guardrails™ Suite MX Software and the Alaris™ EtCO<sub>2</sub> Monitoring Module



The BD Alaris™ System with Guardrails™ Suite MX Software is the only modular infusion system that includes patient-controlled analgesia (PCA) delivery, integrated continuous patient monitoring via the Alaris™ EtCO<sub>2</sub> Module and barcoding capability with the Alaris™ Auto-ID Module.

## Complete patient protection

The BD Alaris™ System takes advantage of a fully integrated single platform and allows the clinician to view real-time PCA infusion dosing plus EtCO<sub>2</sub> monitoring trend data on the same screen. This fully integrated platform provides an additional tool to help the clinician assess the patient's physiological response to PCA therapy. The single-user interface used for multiple devices (*pump, syringe, PCA, EtCO<sub>2</sub> and Auto-ID modules*) reduces complexity and simplifies caregiver training due to the decreased number of devices the caregiver must learn to program.



**Before:** The right programming

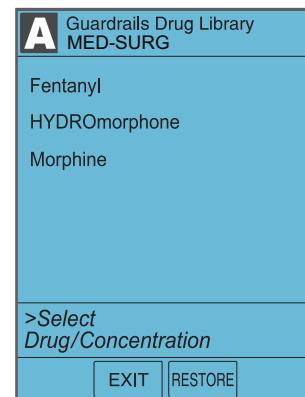
- Streamline clinical workflow with one common user interface.
- Robust DERS protection with the Guardrails™ Safety Software helps to prevent programming errors.
- Add an extra layer of safety by allowing the nurse to prepopulate confirming the right patient, drug, concentration and clinician with the Alaris™ Auto-ID Module.

**During:** The right monitoring

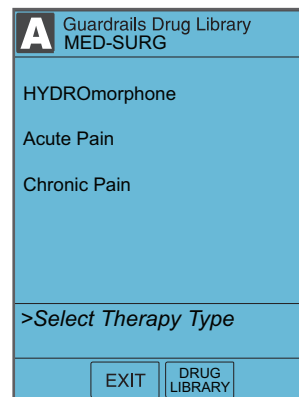
- Get early indications of potentially serious respiratory events with real-time patient EtCO<sub>2</sub> monitoring.
- Increase patient safety by pausing PCA infusions if the patient's respiratory parameter falls below hospital-defined EtCO<sub>2</sub> limits.

**After:** The right feedback

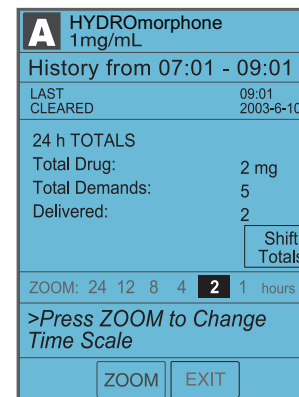
- Capture patient PCA dose history with corresponding EtCO<sub>2</sub> value and respiratory levels throughout the postoperative stay.
- Wirelessly download infusion data for retrospective quality improvement analysis while uploading new device settings and drug data set parameters in maintenance mode.



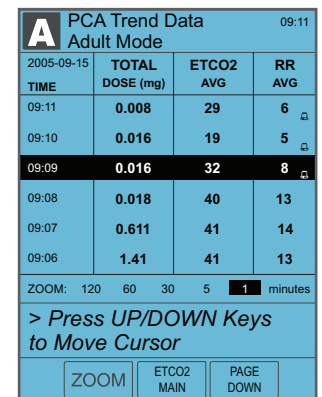
The Guardrails™ Drug Library can customize PCA drugs and concentration limits specific to each patient care area.



Dosing limits are customized by therapy, based on patient opioid tolerance (*acute or chronic*) or weight range.



The patient history view provides a concise, time-specific dosing information review for shift documentation.



Trending data helps assess patient response to pain management.

### Main advantages of PCA use:

- **High** patient satisfaction and **low** pain intensity is achieved with use of PCA therapy<sup>1,4</sup>
- Empowering patients with control over their pain<sup>1,3,4</sup>
- Lessens anxiety and reduces pain level<sup>1,3</sup>
- Patient does not have to wait for analgesia to be administered<sup>1,3</sup>
- Improved quality and recovery of care<sup>3</sup>
- Decreased bed occupancy time<sup>1,3</sup>
- More positive perception of hospital stay<sup>1,3</sup>

### The value of the Alaris™ PCA Module

- Alaris™ PCA Module provides analgesia dosing tailored to the individual patient
- PCA module is approved for delivering IV, subcutaneous and epidural medications
- Can be used in adult, pediatric and neonatal patient populations
- Uses compatible standard or prefilled disposable syringes from 20 mL to 60 mL
- Administration sets include:
  - Integrated antisiphon/antireflux valve
  - Yellow-striped tubing for epidural use

### Key recommendations for continuous EtCO<sub>2</sub> monitoring of patients using opioids:

- The Anesthesia Patient Safety Foundation (APSF) recommends that to help reduce the likelihood of unrecognized, clinically significant opioid-induced respiratory depression, monitoring of ventilation and oxygenation be used.<sup>5</sup>
- The Association for the Advancement of Medical Instrumentation (AAMI) recommends patients receiving parenteral opioids have ongoing assessment of sedation, including continuous respiratory monitoring.<sup>6</sup>
- Joint Commission-Sentinel Event 49 recommends use of ventilation monitoring when a patient has a higher risk of respiratory depression and supplemental oxygen is in use.<sup>2</sup>
- The Joint Commission's Sentinel Event database (2004–2011) found that 29% of opioid-related adverse drug events, including death, were related to improper monitoring of the patient.<sup>2</sup>

### PCA with integrated EtCO<sub>2</sub> monitoring featuring PCA Pause

By allowing integration and communication between the PCA module and the EtCO<sub>2</sub> module on the same platform, the BD Alaris™ System provides the clinician with the ability to continuously monitor the patient's respiratory status in response to PCA therapy.

The unique PCA Pause Protocol using the integrated Alaris™ EtCO<sub>2</sub> Module promotes early detection of respiratory depression and pauses the infusion when the patient's respiratory rate falls below the hospital's preset limits.

To provide an additional safety mechanism, the PCA Pause Protocol is available when:

- The hospital enables the PCA Pause Protocol in the data set.
- A PCA module and EtCO<sub>2</sub> module are attached to the same PCU.



#### References

1 Macintyre PE. Safety and efficacy of patient-controlled analgesia. *Br J Anaesth*. 2001;87(1):36-46. 2 The Joint Commission. Sentinel Event Policy database 2004-2001. [https://www.jointcommission.org/sentinel\\_event.aspx](https://www.jointcommission.org/sentinel_event.aspx). Accessed February 14, 2019. 3 PCA: The indications for and the advantages and disadvantages of patient controlled analgesia. Pain Community Centre Website. <http://www.paincommunitycentre.org/article/pca-indications-and-advantages-and-disadvantages-patient-controlled-analgesia>. Accessed August 22, 2018. 4 PCA clinical advantages. Open Anesthesia Web site. <https://www.openanesthesia.org/pca-clinical-advantages>. Accessed August 22, 2018. 5 Steling RK, Overdyke FJ. Essential monitoring strategies to detect clinically significant drug induced respiratory depression in the postoperative period conclusions and recommendations. <http://www.apsf.org/announcements.php?id=7>. Updated September 9, 2015. Accessed August 22, 2018. 6 AAMI Foundation. National Coalition to Promote Continuous Monitoring of Patients on Opioids. November 14, 2014. Opioid Safety & Patient Monitoring Conference Compendium. Author: Jill Schlabig Williams, JSW Communications.

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