NEW!

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bringing technology to life

CADD®-Solis Ambulatory Pain Management System with Programmed Intermittent Bolus (PIB)

Your solution to better pain management for labor analgesia

CADD®

AVOBUS EQUIPMENT

Programmed Intermittent Bolus (PIB)

An innovative technique for labor analgesia

The Past...

Traditional Pain Management

Until now, labor analgesia has been delivered by several methods:

- **Single, manual injections** – Immediate pain relief but inconsistent and short-lived
- **Continuous infusions** – Better pain relief, but often too much medication delivered resulting in motor blocks or longer recovery time
- **Clinician boluses** – Immediate pain relief but did not address breakthrough pain
- **Patient Controlled Analgesia (PCA)** – Breakthrough pain relieved but overall pain management was still hard to control

The Present...

Programmed Intermittent Bolus (PIB) delivery

PIB delivery is designed to effectively counter pain before it rises:

- Bolus pressure provides more efficient drug distribution and more effective pain relief [1,2]
- Better distribution results in less drug consumption [1,2]
- Less medication = faster recovery and higher patient satisfaction [1, 2]

Clinicians can program an intermittent bolus schedule that provides better coverage and less drug consumption

PIB = Better distribution of medication

Clinical research and practice has shown that bolus volume and delivery pressure can increase the spread of fluid in the epidural space compared to a continuous infusion.[3,4]

Continuous infusions result in the medication staying in one area of the epidural space.

Intermittent boluses allow the medication to spread laterally along the space and cover a broader area.

Labor Analgesia and the CADD®-Solis Ambulatory

An innovative delivery solution for patient satisfaction and safety

The Future...

CADD®-Solis Infusion System

The CADD®-Solis system combines PCEA/PCA and PIB deliveries for an effective, innovative labor analgesia pain management solution.

- Supports latest clinical research findings for Programmed Intermittent Bolus deliveries[1, 2, 3, 4, 5]
- PCEA/PCA and PIB deliveries combine to create more effective drug delivery duration and block density

The CADD®-Solis system combines PCEA/PCA and PIB deliveries with best practice protocols and programmable limits for better pain management

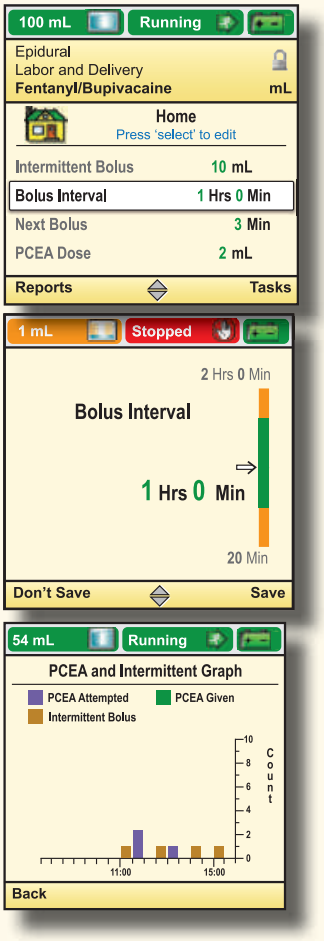
Safe. Simple. Smart.

Smart pump technology promotes patient safety.

- Programming limits, clinical advisory notes and best practice protocols
- Large color screen differentiates therapies and displays infusion settings
- CADD™ medication cassette reservoirs are designed to keep medications safe and secure
- Scroll keys help prevent double key press errors
- Compact, lightweight pump designed for patient mobility

Pain Management System

Advanced programming simplicity to tailor, titrate and track therapy



Tailor

- Tailor patient and procedure-specific protocols with intermittent bolus volumes and intervals as well as patient-controlled dosing
- Tailor distribution of the drug with the intermittent bolus volume and bolus delivery rate
- Tailor drug delivery duration with the intermittent bolus interval

Titrate

- Titrate dosing without stopping the pump
- Titrate dosing within user-defined programming limits

Track

- Track therapy progress with trend and log reports that are easy-to-access and interpret

Effective pain management is pain relief without motor blocks, higher patient satisfaction and faster recovery time[1,2]

A valuable investment, a smart choice

The versatile, adaptable next generation CADD®-Solis pain management system can be used for neuraxial, perineural and IV therapies for labor and delivery and adult and pediatric pain management patients. The system is designed to advance your program today and in the future by satisfying current and emerging clinical and technical needs.

Advancing Labor Analgesia

The Challenge

To provide enough pain relief for childbirth labor and delivery without partial or motor blocks

Ineffective pain management

Partial Blocks – anesthesia delivery is not effective at stopping pain

Motor Blocks – anesthesia goes beyond the target and interferes with needed patient movement, respiration and function

Clinician Intervention – Inefficient anesthesia delivery causes patient discomfort, often requiring clinician boluses

The Solution

The CADD®-Solis System with PIB delivery, along with PCEA/PCA: a state-of-the-art, **smart** pain management system for better pain management for labor analgesia

The CADD®-Solis System with PIB

Provides targeted distribution that knocks out the pain, not the patient

Lets you program a bolus schedule designed to stop pain before it escalates

Allows flexible program options for combined PCEA/PCA, PIB and continuous infusion

CADD®-Solis Pain Management System with Programmed Intermittent Bolus (PIB)

Specifications

On-board Protocol Library	Stores up to 500 therapy/qualifier/drug protocols
Program Security	Cassette/keypad lock and three customizable security access levels by protocol: keypad code, clinician code, administrator code
Clinical Advisory Note	User-defined per protocol
Delivery Limit Method	Delivery limit, Max doses per hour or not in use
Max Doses Per Hour	1 to 60
Delivery Limit Amount	0.1 to 1,900 mL (or the mg or mcg equivalent) in increments of: 0.01 mL from 0.01 to 0.5 mL 0.5 mL from 0.5 mL to 100 mL 1.0 mL from 100 to 1,000 mL 10 mL from 1,000 to 1,900 mL
Delivery Limit Period	1 to 12 hours in increments of 1 hour
Pump Size	1.6 in. x 4 in. x 5 in. excluding cassette or other accessories
Weight	21 oz. including 4 AA alkaline batteries, excluding other accessories
Power Sources	4 AA (IEC LR6) alkaline batteries; AC adapter; rechargeable battery pack
Battery Life Alkaline	Approximately 113 hours at 10 mL/hr
Delivery methods	Continuous rate, PCA dose, Clinician bolus, Programmed intermittent bolus
Continuous Rate	0 to 100 mL/hr (or the mg or mcg equivalent)
PCA Dose	0 to 50 mL (or mg or mcg equivalent)
PCA Dose Lockout	1 minute to 24 hours in the following increments: 1 minute for values between 1 and 20 minutes 5 minutes for values between 20 minutes and 24 hours
PCA/PCEA Configurability	User can configure PCA/PCEA nomenclature per protocol
Intermittent Bolus	The amount of drug to be infused with each intermittent bolus – 0 to 50 mLs (or the mg or mcg equivalent)
Intermittent Bolus Interval	The amount of time from the start of one intermittent bolus to the start of the next intermittent bolus – 0 to 4 hours
Next Bolus	The length of time from when the pump starts until the next intermittent bolus is delivered; 0 to 4 hours
Bolus Interval Type	The timing of intermittent bolus delivery after PCA with the Bolus Interval Type feature, PCA Lockout or Bolus Interval
Clinician Bolus	0 to 50 mL (or the mg or mcg equivalent)
Maximum Delivery Rate	Intermittent Bolus, Clinician Bolus, and PCA Dose: with standard volume tubing: 40-250 mL/hr with high volume tubing: 40-500 mL/hr (high volume tubing compatible with Model 2110 pumps only)
Units	Milliliters (mL), milligrams (mg), micrograms (mcg)
Concentration	mg/mL: 0.1 to 0.5 mg/mL in increments of 0.1 mg/mL 0.5 to 1 mg/mL in increments of 0.5 mg/mL 1 to 15 mg/mL in increments of 1 mg/mL 15 to 100 mg/mL in increments of 5 mg/mL mcg/mL: 1 to 15 mcg/mL in increments of 1 mcg/mL 15 to 100 mcg/mL in increments of 5 mcg/mL 100 to 500 mcg/mL in increments of 100 mcg/mL
Reservoir Volume	0 to 9999 mL; programmable in 1 mL increments, displayed in 0.1 mL increments
Delivery Mechanism	Linear peristaltic
Occlusion Pressure	18 +/- 9 psi
Accuracy	+/- 6% (nominal)
Event Log	5,000 events
Reports	Intermittent Bolus Status, given and PCEA/PCA dose counters, Delivery Log, Event Log, Protocol Library Summary, Device Information
Graphs	PCEA/PCA Dose Graph, Intermittent Bolus Graph, PCEA/PCA and Intermittent Graph, Delivery History and Pie Chart

Order Information

CADD®-Solis Ambulatory Infusion System	
CADD®-Solis Ambulatory Infusion Pump – Grey keypad	21-2111-0300-01
CADD®-Solis Pump - Yellow keypad	21-2112-0300-01
CADD®-Solis Pump Software Upgrade	67-2470-030001-01
SureLink™ Remote Support Software	21-2136-0200-25
CADD™-Solis Medication Safety Software – Administrator CD	21-2194-0301-01
CADD™-Solis Medication Safety Software – Point of Care CD	21-2193-0301-01
CADD™-Solis Medication Safety Software v3.1 – Administrator License	21-2199-0301-01
CADD™-Solis Software Maintenance	21-2198-01

CADD®-Solis System Accessories	
Remote Dose Cord	21-2186-25
Lockbox Clear	21-2188-25
Lockbox Yellow	21-2189-25
Polemount Adapter	21-2135-25
Polemount Adapter Swivel	21-2183-25
Lockable Polemount Bracket	21-6120-51
Battery Door Replacement	21-2184-51
Pump Key	21-2185-51
AC Adapter	21-2140-25
Power Cord for use with AC Adapter	21-2145-01
Rechargeable Battery	21-2160-51

1. Wong, Cynthia, A., et al. *A Randomized Comparison of Programmed Intermittent Epidural Bolus with Continuous Epidural Infusion for Labor Analgesia*. Anesth. Analg. 2006; 102:904-9.
2. Leo, S., Ocampo, C.E., Lim, Y., Sia, A.T., *A randomized comparison of automated intermittent mandatory boluses with a basal infusion in combination with patient-controlled epidural analgesia for labor and delivery*. International Journal of Obstetric Anesthesia (2010) 19, 357-364.
3. Capogna, Giorgio, M.D., et al. *Programmed Intermittent Epidural Bolus Versus Continuous Epidural Infusion for Labor Analgesia : The Effects on Maternal Motor Function and Labor Outcome. A Randomized Double-Blind Study in Nulliparous Women*. International Anesthesia Research Society, October 2011, Volume 113, Number 4.
4. Hogan, Quinn, M.D., *Distribution of Solution in the Epidural Space: Examination by Cryomicrotome Section*. Regional Anesthesia and Pain Medicine, Vol. 27, No. 2 (March-April), 2002: pp. 150-156.
5. McAtamney, D., O'Hare, C., and Fee, J.P.H. *An in vitro evaluation of flow from multihole epidural catheters during continuous infusion with four different infusion pumps*. Anasethesia, 1999, 54, pages 664-669.

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