

ICP EXPRESS[®] AND MICROSENSOR[®] Pocket Reference Guide



never stop moving™

Codman
a Johnson & Johnson company



Our Commitment to Developing Neuro Critical *Care Solutions*:

At Codman, we are committed to the physicians and nurses we serve and the patients they treat. We strive to make this commitment apparent in our dedicated service, the clinical education and resources we provide our clinicians, and in our full line of Neuro Critical Care Solutions (NCC) products. We are committed to developing comprehensive solutions for Neuro Critical Care. Codman NCC is an excellent choice in the ICU — and for your patients' well being. Our portfolio of Neuro Critical Care Solutions facilitates neurosurgery and neurointensive care, from the access and monitoring phase through post-op and therapy. Just as care has been inherent in the Codman name for more than a century, so it is today — and we will strive to continue this commitment into the next century.

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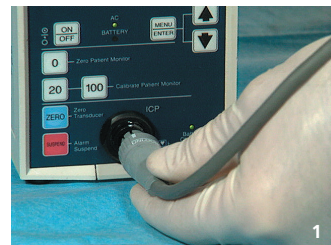


This instructional program has been prepared to assist you with the proper operation and maintenance of the CODMAN® ICP Monitoring System. This guide is not intended to replace the product inserts. Rather it is to be used along with the product inserts as a training aid. Please refer to the product inserts and read the sections on contraindications, warnings and cautions.



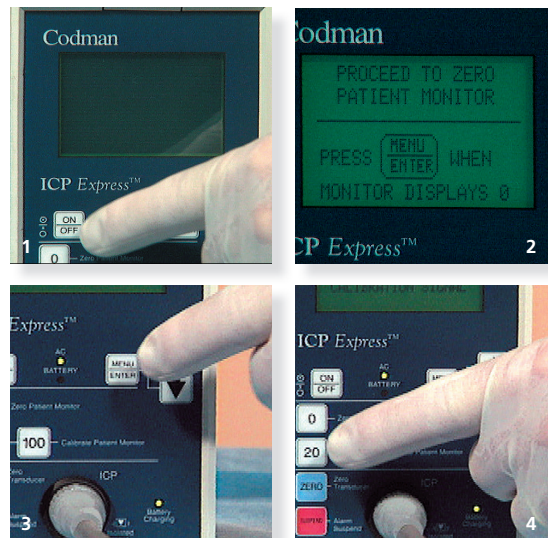
ICP EXPRESS

- 1 To operate the ICP EXPRESS Transducer, first make sure that all cables are connected. The power cable and the MICROSENSOR Transducer cables are supplied with the unit. Ensure that the white center line on the cable is aligned with the corresponding mark on the ICP EXPRESS connector and snapped into place.
- 2 If you are connecting to a bedside monitor, the monitor cable you use will depend on the type of patient monitors used in the hospital. They will have to be ordered separately through your Codman representative.





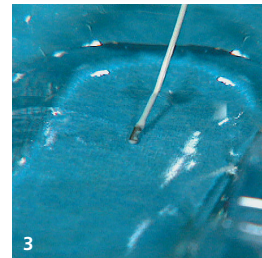
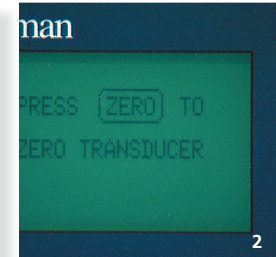
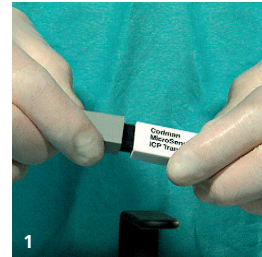
- 3 Begin by using the **ON/OFF** key to turn the unit on, and wait for the screen to prompt you with instructions.
- 4 If the ICP EXPRESS is connected to a patient monitor, the screen will prompt you to zero the monitor. Proceed to zero the monitor according to the manufacturer's instructions. Verify that the patient monitor displays a numeric mean ICP of zero and press the **MENU/ENTER** key.
- 5 Next you must calibrate the patient monitor by pressing the **20** or **100** key labeled *Calibrate Patient Monitor*. Press the **MENU/ENTER** key when calibration is complete.






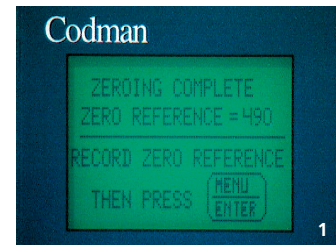
- 6** Connect the MICROSENSOR and wait for the message “Press Zero to Zero Transducer.”
NOTE: If the screen display prompts you to accept a zero reference number prior to zeroing, turn off the monitor and return to step 3.

- 7** Place the MICROSENSOR tip in sterile water and press the blue key **ZERO** labeled “Zero Transducer.” The MICROSENSOR’s zero offset number will be displayed on the ICP EXPRESS screen.





- 8 This offset number is frequently called the reference number and is specific to the transducer that you have just zeroed. It is also recorded electronically onto the E-Prom memory chip in-line with the transducer cable.
- 9 Care must be taken to record this zero offset reference number in the patient chart and on the MICROSENSOR connector. Press the  key. The MICROSENSOR ICP Transducer is now ready for implantation.





Cranial Access Kit

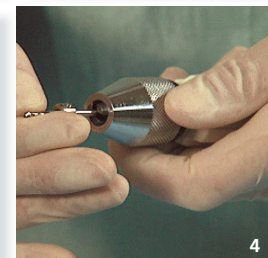
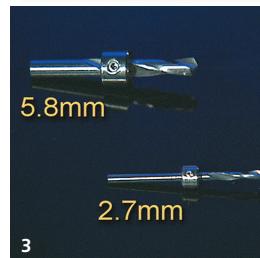
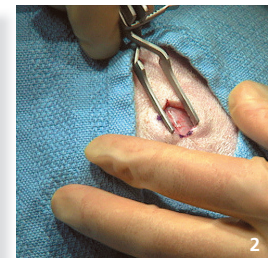
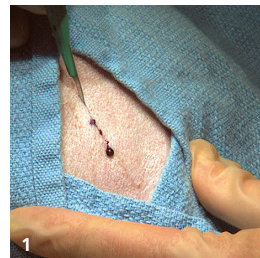
The Codman® Cranial Access Kits contain medical devices with sharp injury prevention features to help minimize occupational exposure to blood borne pathogens.

- 1 Codman's Cranial Access Kit includes all the necessary components to create the initial access hole for ICP monitoring and CSF drainage procedures.
- 2 When making the initial access hole, begin by shaving, prepping, and draping the patient.



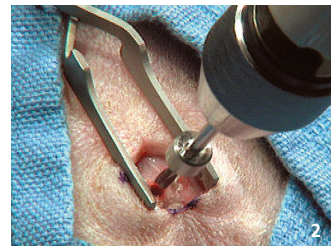
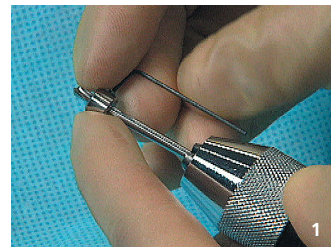


- 3 Make the necessary incision and retract the scalp to expose the skull.
- 4 Now select the appropriate drill bit. The 5.8 mm bit should be used for ventriculostomy procedures or with the Plastic Skull Bolt Kit, 82-6632. The 2.7 mm bit should be used for subdural and intraparenchymal procedures or with the Metal Skull Bolt Kit, 82-6638.
- 5 Place the bit into the chuck, then hold the drill handle in place and turn the chuck counterclockwise to tighten the bit.





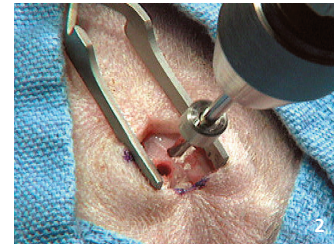
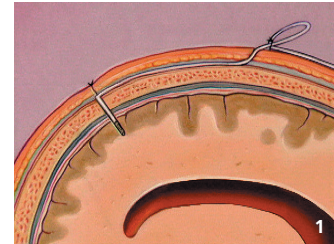
- 6 Next, loosen the drill guide with the appropriate hex wrench, and carefully slide the drill guide towards the tip of the bit until the desired skull depth is reached. It is important to note that the drill guide will not stop the drill. It is designed only to provide the neurosurgeon with a marker for drilling depth.
- 7 Finally, tighten the drill guide in place with a hex wrench, and begin drilling.





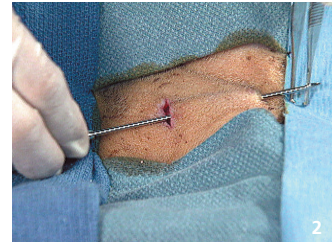
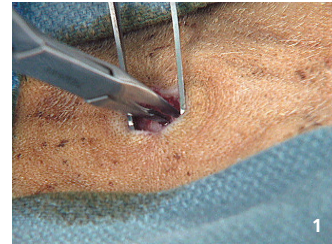
Basic Kit

- 1 To measure ICP via the Intraparenchymal approach, begin with the MICROSENSOR already zeroed and connected to the required cables and monitor.
- 2 Create the Burr Hole through which the MICROSENSOR will be placed, with the 2.7 mm drill bit which is included in the drill kit.



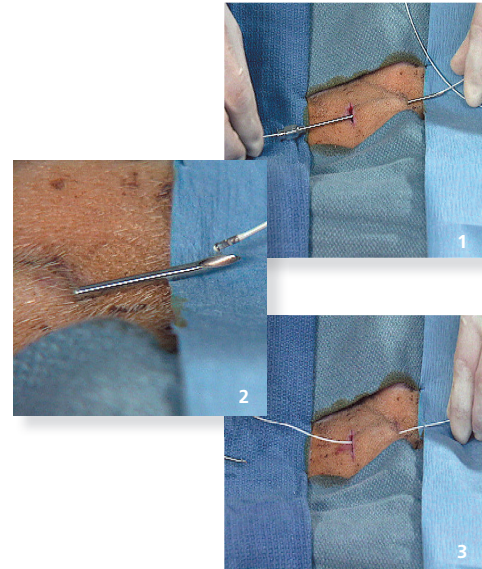


- 3 Bevel the Burr Hole edge on the side where the MICROSENSOR will exit. This will facilitate removal of the MICROSENSOR.
- 4 Use the Touhy needle to tunnel under the scalp from the Burr Hole site to the desired MICROSENSOR exit site.



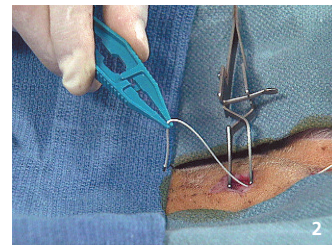
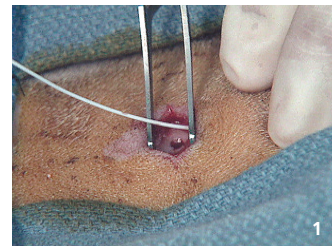


- 5 Remove the Touhy needle stylet and thread the MICROSENSOR from the tip of the needle until the appropriate length for placement exits from the hub. The inner edges of the Touhy needle are sharp, so exercise caution while threading the MICROSENSOR through.
- 6 Gently remove the needle and estimate the length of the MICROSENSOR from the tip to the first kink.



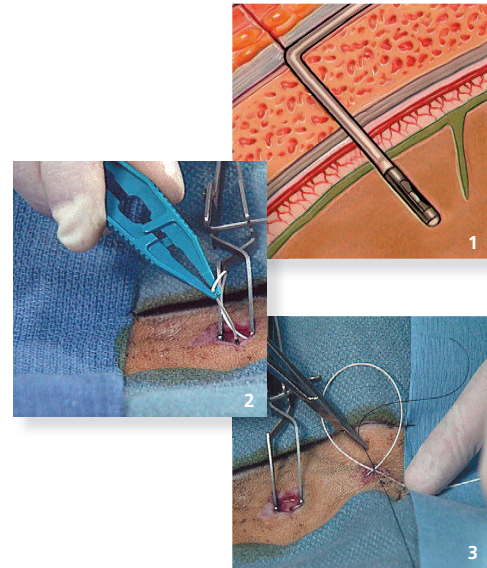


- 7 Once again, retract the Burr Hole site.
- 8 Fold the MICROSENSOR forward once at the desired bend site to leave a kink in it. Avoid touching the sensor diaphragm.





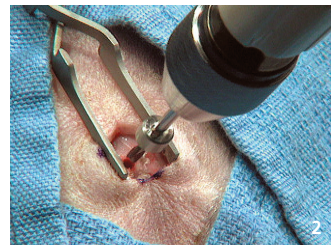
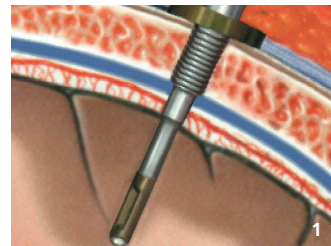
- 9 Place the tip of the MICROSENSOR in the Parenchyma through the puncture in the Dura until the kink is at the top edge of the hole.
- 10 Carefully pull back the excess slack and secure the MICROSENSOR to the scalp. For additional strain relief, make a small loop with the line and suture it down.





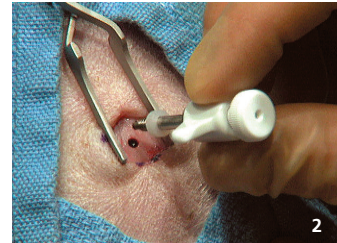
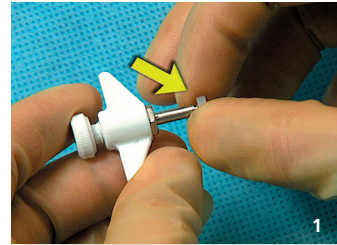
Skull Bolt Kit

- 1 To measure ICP utilizing the Intraparenchymal approach, begin with the MICROSENSOR already zeroed and connected to the required cables and monitor.
- 2 Use the drill bit included in the MICROSENSOR Skull Bolt Kit to perform a craniostomy. Remember that the MICROSENSOR Skull Bolt Kit is contraindicated for children of one year or less.



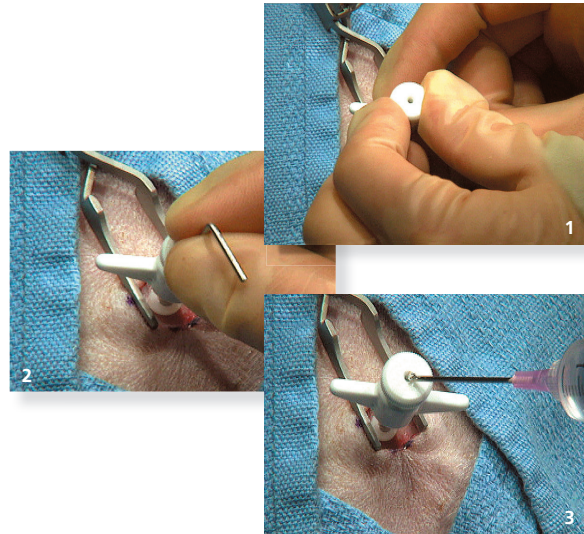


- 3 The MICROSENSOR Skull Bolt comes pre-assembled with a spacing washer which may be discarded if not required.
- 4 Put the Skull Bolt in position, and turn it clockwise until the spacing washer rests against the outer table of the skull.



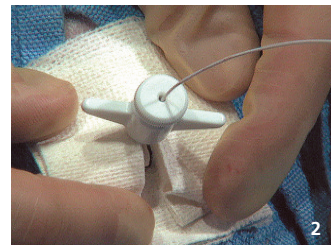
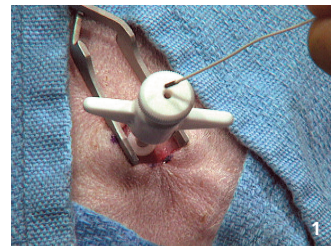


- 5 Loosen the cap adapter on top of the Bolt by turning it counterclockwise.
- 6 Make a puncture in the Dura to establish an assured path between the bolt and the intraparenchymal area. Irrigate the channel with non-bacteriostatic, preservative-free, sterile saline.





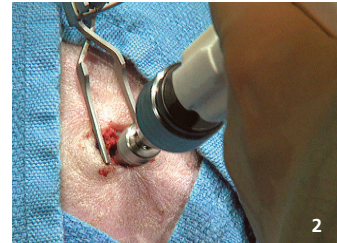
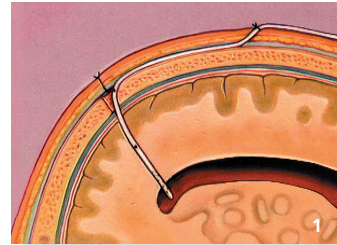
- 7 Insert the MICROSENSOR through the Bolt to the desired depth.
Secure the MICROSENSOR to the Bolt by turning the adapter clockwise.
- 8 Close the incision and dress the wound site.





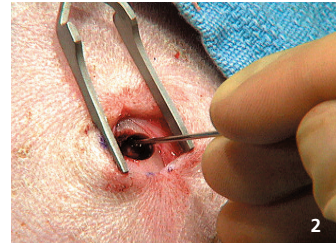
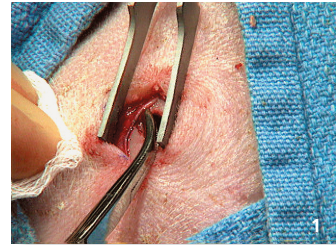
Ventricular Catheter Kit

- 1 To measure intraventricular pressure, begin with the MICROSENSOR already zeroed and connected to the required cables and monitor.
- 2 Perform the craniostomy using the 5.8 mm drill bit which is included in the Codman Cranial Access Kit.



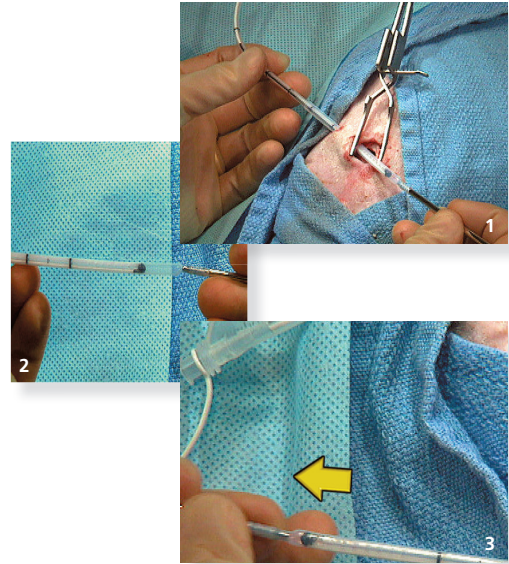


- 3 Gently bevel the Burr Hole on the side where the catheter exit site will be.
- 4 Make a cruciate puncture in the Dura.



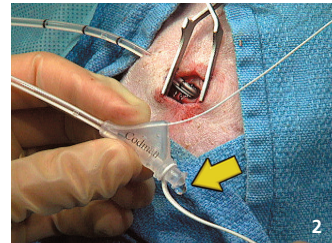
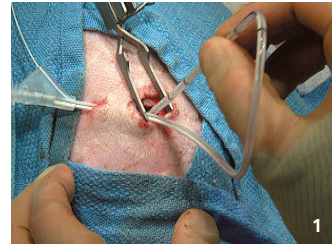


- 5 Place the Ventricular Catheter in the trocar tube and tunnel it under the scalp from the desired exit site towards the Burr Hole.
- 6 Remove the trocar.



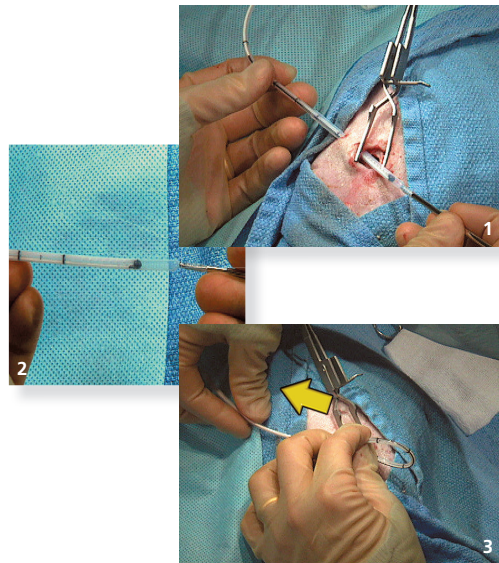


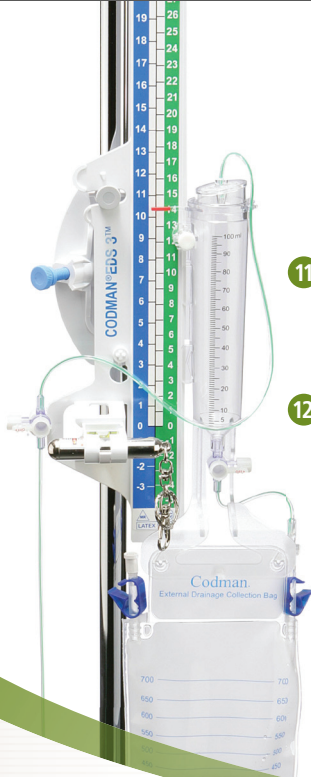
- 7 Depending on surgeon preference, the 10 gauge ventricular needle may first be used to locate the ventricle. Advance the catheter into the lateral ventricle, making sure to enter the skull at a right angle.
- 8 Verify that the tip of the ventricular catheter is situated in the ventricle by removing the cap on the drain port and allowing CSF to flow out and then recap the drain port.



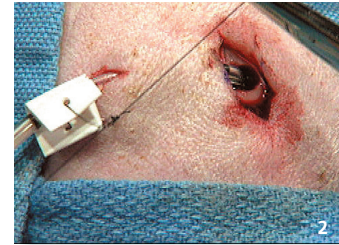
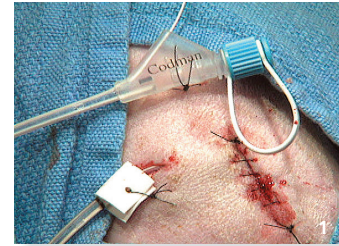


- 9 Bend the catheter in place and gently withdraw the preloaded stylet.
- 10 Hold the ventricular catheter in place, securely, and pull any slack on the catheter away from the incision site.





- 11 Secure the catheter to the scalp at the exit site. A removable suture clip is provided. Close and dress the incision site.
- 12 If you so choose, you may attach the drain port of the ventricular catheter to a ventricular drain system such as Codman's EDS3. This configuration will allow you to drain CSF and monitor ICP through a single catheter.





Contact Information

For any questions, please contact your local Codman representative or visit www.depu.com. For USA customers, Codman Customer Service is available at 800-225-0460.

Codman Neurospecialist Information:



Neuro Essentials

Pupil size gauge

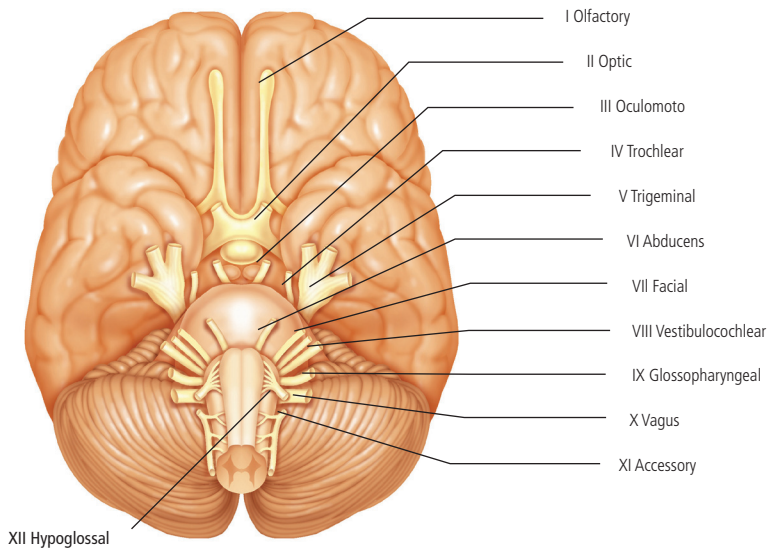


Glasgow Coma Scale

	1	2	3	4	5	6
EYES	Does not open eyes	Opens eyes in response to painful stimuli	Opens eyes in response to voice	Opens eyes spontaneously	N/A	N/A
VERBAL	Makes no sounds	Incomprehensible sounds	Utters inappropriate words	Confused, disoriented	Oriented, converses normally	N/A
MOTOR	Makes no movements	Extension to painful stimuli	Abnormal flexion to painful stimuli	Flexion/Withdrawal to painful stimuli	Localizes painful stimuli	Obeys commands



Cranial Nerves





Additional Tools

- **EDS³ SYSTEM with BACTISEAL[®] EVD CATHETER** Pocket Reference Guide
- **NCC Solutions In-Service DVD**
- **Nursing Matters Education Days**



Committed to Advancing Patient Care

CODMAN ICP EXPRESS | BACTISEAL EVD Catheters
EDS3 CSF External Drainage Cranial Access Kits





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