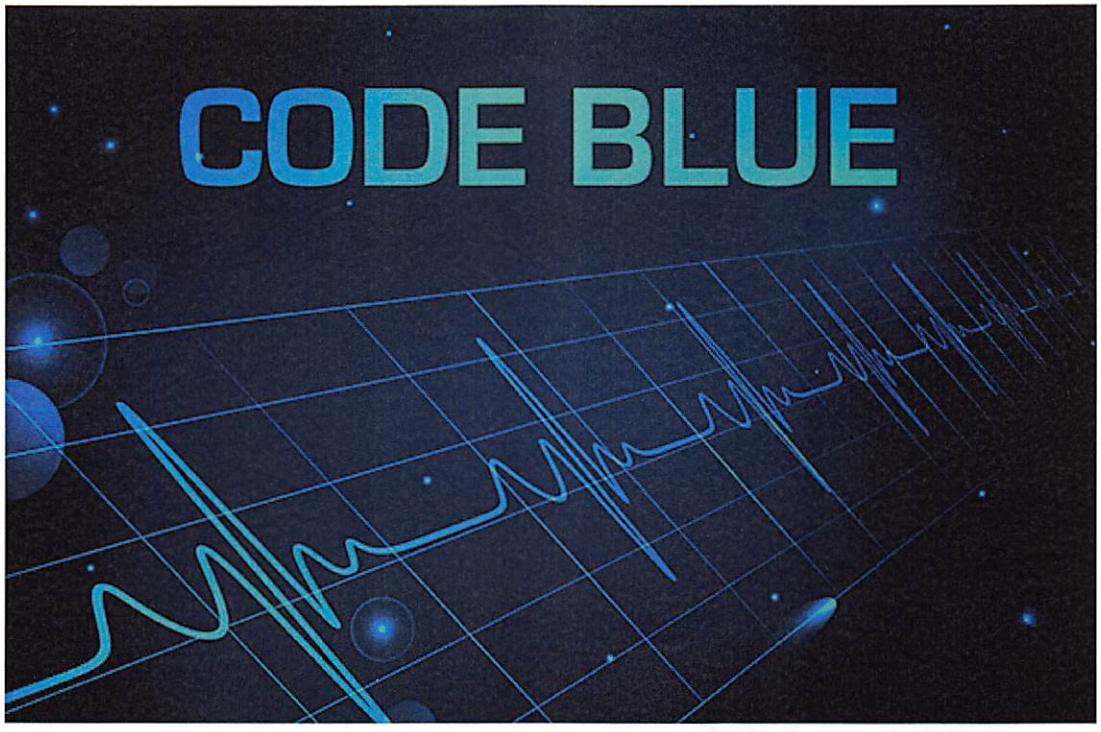
CODE BLUE

# NORTH MEMORIAL AMBULATORY SURGERY CENTER AT MAPLE GROVE
# CODE BLUE PROTOCOL

## Policy

To ensure an established and organized plan in the event of a cardiac/respiratory arrest. It is a requirement for employees providing direct patient care to be BLS certified.

**Definition:** Code Blue - An emergency code called for anyone who requires immediate resuscitation or impending loss of airway.

## Procedure

1. Emergency supplies and equipment are maintained in designated areas and are checked daily.
    a. Supplies are secured in a manner to ensue integrity of the contents and rapid access by personnel during an emergency code.
2. Initiate a code blue response by pushing the Code Blue button on the wall in the area the emergency is occurring in.
3. The following activities are authorized prior to physician arrival:
    a. BLS procedures according to current AHA protocols
    b. ACLS procedures initiated by a certified RN according to AHA protocols
    c. Initiating an IV of normal Saline
4. If available an **Anesthesiologist** will direct the code
5. If available a **Nurse Anesthetist** will direct the code until an **Anesthesiologist** is present
6. If no anesthesia personnel are on site a **certified RN** will be responsible for the code according to AHA standards.

## Team Member Responsibilities

Many of the following activities may be enacted simultaneously. The order does not mandate their exact sequence of occurrence in the code setting. The emergency crash cart has a binder on top of cart with crash cart contents/ a daily check list/ monthly outdate check list, plus Emergency Tape to use as a reference during pediatric cardiac/respiratory arrest situations. Algorithms for Adults and Pediatric patients can be found in this binder if needed to assist.

A. ***ALL*** personnel that are available shall respond!
    1. The PACU Supervisor/designee will obtain emergency cart, monitor-defibrillator, and cardiac board. Obtain portable O2 tank and portable suction if code is in an area where in-line equipment is not available.
    2. Place patient on cardiac board.
    3. Maintain patent airway.



K:\ASC Policy Manual\SECT 3000 EMERGENCY\3005 Code Blue Protocol.doc
Initiated 12/2007; Reviewed 3/2009krs; Reviewed 3/2010 kmo; Reviewed 11/2010tma; Revised 03/2011: Revised 6/14/11pcb:Reviewed 10/2012pb:Reviewed 1/31/2013pb;reviewed 6-15jw: Revised 9/26/15 pb; reviewed 8/2017 CH; Revised 2.2019 jc

4. Ventilate with 100% oxygen with bag-valve-mask unit or intubation by trained personnel.
5. Continue chest compressions.

B. Identify team leader to assume the following responsibilities.
   1. Record events on Code Blue flow sheet
   2. The primary RN will assess patient.
   3. The primary RN will direct and supervise team members until the anesthesiologist arrives.
   4. Anesthesiologist and/or anesthetist and/or ACLS trained RN will determine 9-911 call.
   5. The PACU Supervisor/designee will solve problems and assign a team member to the family.
   6. Report patient history and document information about events leading up to the code.

C. Rhythm Diagnosis.
   1. Connect chest leads to patient, but do not interrupt CPR.

D. Prompt defibrillation if indicated, by properly trained personnel.
   1. Use correct algorithms.
   2. Place pads in proper location.
   3. Select appropriate power (joules).

E. Administer medications per AHA protocol

F. Provide ongoing assessment of the patient's response to therapy during resuscitation.
   1. Assess frequently.
   2. Check if pulse is generated with CPR.
   3. Check adequacy of artificial ventilation.
   4. Check for spontaneous pulse after any intervention/rhythm change.
   5. Check for spontaneous breathing with return of pulse.
   6. Take blood pressure if pulse is present.

J. The PACU Supervisor or most senior department head available should make arrangements for transfer to a hospital.

NORTH MEMORIAL
Ambulatory Surgery Center
*Maple Grove*

# Code Blue Record

Patient Sticker



**Section 3000: Emergency Policy 3005 Attachment A Code Blue Record**

| Date/Time Event Recognized: | | Location: | | Witnessed: ☐ YES ☐ NO |
|---|---|---|---|---|
| Age: | Weight: | Height: | | Hospital-wide response activated? ☐ YES ☐ NO |

Illness Category: ☐Medical Cardiac ☐ Medical Noncardiac ☐Pediatric ☐Infant ☐Surgical Cardiac ☐Surgical Noncardiac ☐ Other

Condition when need for compressions/defibillations was identified? ☐ Pulseless ☐ Pulse (poor perfusion)

Did the patient with a pulse requiring compressions become pulseless? ☐ YES ☐ NO

Conscious at onset? ☐YES ☐ NO Monitoring at onset: ☐ ECG ☐ Pulse Oximeter ☐ Apnea ☐ None

| Airway/Ventilation | Circulation | Resuscitation |
|---|---|---|
| Breathing: ☐Spontaneous ☐Apneic ☐Agonal ☐Assisted | 1st Rhythm Requiring Compressions: _____ | Time Resuscitation Event Ended: _____ |
| Time of first assisted ventilation: _____ | 1st PULSELESS Rhythm: _____ | |
| Ventilation: ☐ Bag-Valve Mask ☐ Endotracheal Tube ☐ Tracheostomy ☐ Other | Time chest compressions started: _____ | Reason Resuscitation Ended: |
| | ResQPod Used? ☐ YES ☐ NO | ☐ Survived: Return of Circulation (ROC) > 20 min |
| Intubation: Time: _____ Size: _____ | Patient Defibrillated? ☐ YES ☐ NO | ☐ Died: Efforts Terminated (No Sustained ROC) |
| By Whom: _____ | *If yes, time of first shock:* _____ | ☐ Died: Medical Futility |
| Confirmation: ☐ Auscultation ☐Exhaled CO2 ☐ Other | AED Applied: ☐ YES ☐ NO | ☐ Died: Advance Directives |
| | Pacemaker On: ☐ YES ☐ NO | |

**Anesthesia Staff Present:**

| | Breathing | | Pulse | | Vital Signs | | | | Circle Route (IV or IO | | | | | Write in Other Meds (dose/route) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | Spontaneous | Assisted ( ) | Spontaneous | Assisted ( ) | BP | Ryhthm | Defibrillator Type AED/Manual | Joules | Amiodarone Dose/ IV or IO | Atropine Dose/ IV or IO | Epinephrine Dose/ IV or IO | Lidocaine Dose/ IV or IO | Vasopressin Dose/ IV or IO | | | | | | Comments: e.g., Peripheral Line Placement, IO, Vital Signs, Response to Interventions |
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NORTH MEMORIAL
Ambulatory Surgery Center
*Maple Grove*

# Code Blue Record

Patient Sticker



**Section 3000: Emergency Policy 3005 Attachment A Code Blue Record**

| | Breathing | | Pulse | | Vital Signs | | | | Circle Route (IV or IO | | | | | Write in Other Meds (dose/route) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | Spontaneous | Assisted ( ) | Spontaneous | Assisted ( ) | BP | Ryhthm | Defibrillator Type AED/Manual | Joules | Amiodarone Dose/ IV or IO | Atropine Dose/ IV or IO | Epinephrine Dose/ IV or IO | Lidocaine Dose/ IV or IO | Vasopressin Dose/ IV or IO | | | | | | Comments: e.g., Peripheral Line Placement, IO, Vital Signs, Response to Interventions |
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**Provider Printed Name:** _____ **Provider Signature:** _____ **Date/Time:** _____

**Participant List:**

| *Name and Department* | *Name and Department* |
|---|---|
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# NORTH MEMORIAL AMBULATORY SURGERY CENTER AT MAPLE GROVE
# CRASH CART MEDICATIONS AND SUPPLIES

## Policy

To insure the immediate availability of emergency drugs and supplies. The emergency cart is checked every day, Monday through Friday, and/or after each use. An itemized list of the contents of each drawer of the crash cart is kept on the clipboard on the cart.

## Procedure

1. The integrity of the lock must be verified. If the seal is not intact, all contents must be checked and items replaced as necessary before the cart is resealed.

2. Documentation Monday through Friday regarding the examination of the crash cart and the verification of the integrity of the cart is the responsibility of the Pre and Post-Op personnel.

3. The portable oxygen tank is checked to make sure the tank is 1/2 full or greater, and there is an ambu bag present on the crash cart.

4. The crash cart items and emergency drugs should be checked for outdates on a monthly basis, utilizing the itemized list and replacing outdates. This is the responsibility of the Pre- and Post-Op RN's.

5. The monitor and defibrillator on the crash cart are checked and tested daily during hours of operation. This is the responsibility of the Perioperative nurses.

_____ _____

Medical Director Date

# NORTH MEMORIAL AMBULATORY SURGERY CENTER AT MAPLE GROVE
# CRASH CART CONTENTS

## *Top of Cart*

Defibrillator
Portable Suction Canister with Suction tubing,2 suction catheters(14Fr)
3 Ring Binder with CPR/Code forms
Handbook of Emergency Cardiovascular Care (ACLS)
ACLS/PALS current Algorithms
Broselow tape
Yankauers (2)
NRB/Ped masks
Quick Combo pads, Adult, x4
Quick Combo pads, Peds, x4
Second-line Med Request sheets
Electrodes
Calculator

## *Sides of Cart*

O2 tank
Peds Ambu Bag and 2 masks w/oral airways size 5,6,7
Adult Ambu Bag and mask w/oral airways size 8,9
Backboard
Pediatric Rebreather
Adult Rebreather

## *Drawer One: Crash Cart Medications*

Medications, alcohol preps and labels (**SEE attachment 3008 for med list**)
Anaphylaxis Kit (Epi 1mg/ml, 30 ml vial, 3 TB siringes, 3 IM needles)

## *Drawer Two: IV supplies/Needles*

See attachment 3008 for supplies
Micro drip tubing (1)
Secodary Tubing (2)
Primary Tubing (2)
IV Start Needles: 18g, 20g, 22g, 24g (5 of each size)
Control a flo Regulator Ext. Tubing
Extension Tubing

Three-way stopcock (3)
Durapore tape
Tourniquet (3)
19g x 1.5 inch needles (5)
25g x 1.5 inch needles (5)
25g x 5/8 inch needles (5)
Filter needles (2)
Spinal needle, 22g (1)
Microclave adapters (saline locks) (2)
Needleless vial adapters (5)
Syringes: 60cc (1)
20cc (3)
10cc (5)
6cc (5)
3cc (5)
Insulin syringes (3)
IV Start Kits
TB syringes

## ***Drawer Three: Airway Supplies***

Stylets:14F (2)
NRB masks (2)
Surgical Lube
Oral Airways: sizes 7, 8, 9, 10
Nasal Aiways: sizes 6, 7, 8, 9
Cuffed ET tubes : sizes 6, 6.5, 7, 7.5, 8
Suction handles (2)
Suction tubing 10 Fr (2)
Suction tubing 14 Fr (2)
Salem Sump tubing (1)
Syringe 60cc (1)
ETT blades (3) with light source
Colorimetric

## ***Drawer Four: IV fluids and IV medications***

IV medications (**SEE attachment 3008**)
Intralipid 500 ml (for Local Anesthetic Toxicity) (5)
Lipid Start Kit: IV start kit
60 ml syringes (3)
18g needles (3)
IV tubing: primary (1), secondary (2)
Luer tip valves (2)

Extension set catheter
Tourniquet (1)
Tape

## ***Inside Doors***

IV Pressure Bag
LMA's sizes 2, 2.5, 3, 4, 5
I/O needle sets 3-39kg (5)
I/O Stabilizers for 3-39kg sets (5)
I/O needle sets >40kg with stabilizers (5)
Intraosseous Drill
Flashlight and 2 extra D batteries
EKG paper
Scissors

# ***Drawer Five: Pediatric Emergency Kits***

| | Red/Pink | Purple | Yellow | White | Blue | Orange | Green |
|---|---|---|---|---|---|---|---|
| **ETT** | 3.5 | 4.0 | 4.5 | 5.0 | 5.5 | 6.0 | 6.5 |
| **Stylet** | yes | 10fr | 10fr | 10fr | 10fr | 10fr | 10fr |
| **Laryngoscope Blade** | Miller #1 | Miller#1 | Miller#2 | Miller#2 | Miller / Mac #2 | Miller / Mac #2 | Miller / Mac #3 |
| **Oral Airway** | 5 | 6 | 6 | 6 | 7 | 8 | 8 |
| **NG** | 8fr | 8fr | 10fr | 10fr | 14fr | 14fr | 14fr |
| **Suction Cath** | 10fr | 10fr | 10fr | 10fr | 10fr | 10fr | 12fr |
| **O2 Mask** | Peds NRB | Peds NRB | Peds NRB | Peds NRB | Peds NRB | Peds NRB | Peds NRB |

Braselow Tape

North Memorial Ambulatory Surgery Center
Crash cart medication list / Expiration Monitoring Form

| ASC Crash Cart Medications/Supplies – ITEMS THAT EXPIRE | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| YEAR: MONTH: | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| INITIALS (FILLED/CHECKED): | | | | | | | | | | | | | | |
| MEDICATIONS/SUPPLIES (Drawer 1) | FORM | QTY | | | | | | | | | | | | |
| adenosine 6mg/2ml | VIAL | 4 | | | | | | | | | | | | |
| amiodarone INJ 150mg/3ml | VIAL OR AMP | 9 | | | | | | | | | | | | |
| atropine 1mg/10ml | SYRINGE | 3 | | | | | | | | | | | | |
| calcium chloride 1g/10ml | SYRINGE | 3 | | | | | | | | | | | | |
| dextrose 50%, 50ml | SYRINGE | 1 | | | | | | | | | | | | |
| EPINEPHrine 1mg/10ml (1:10,000) | SYRINGE | 7 | | | | | | | | | | | | |
| EPINEPHrine 1mg/ml (1:1,000) | vial | 1 | | | | | | | | | | | | |
| lidocaine 100mg/5ml | SYRINGE | 2 | | | | | | | | | | | | |
| magnesium sulfate 1g/2ml | 2 ML VIAL | 2 | | | | | | | | | | | | |
| nitroglycerin tabs 0.4mg | 1 bottle | 1 | | | | | | | | | | | | |
| Narcan 0.4mg/ml (naloxone) | SYR OR AMP | 2 | | | | | | | | | | | | |
| Levophed 4mg/4ml (norepinephrine) | AMPUL | 7 | | | | | | | | | | | | |
| sodium bicarbonate 50meq/50ml (4.2g, 8.4%) | SYRINGE | 2 | | | | | | | | | | | | |
| normal saline 0.9% flushes | SYRINGE | 5 | | | | | | | | | | | | |
| 3ml syringes | N/A | 5 | | | | | | | | | | | | |
| Aspirin 81 mg | N/A | 1 bot #36 | | | | | | | | | | | | |
| SUPPLIES w/EXPIRATIONS (Drawer 2) | FORM | QTY | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| IV needles (18g, 20g, 22g, 24g) | N/A | 5ea | | | | | | | | | | | | |
| Filter needles | N/A | 2 | | | | | | | | | | | | |
| Microclave adapters | N/A | 2 | | | | | | | | | | | | |

K:/ASC Policy Manual/SECT 3000 EMERGENCY/3008b Attachment Crash Cart medication list; Revised 01/02/2014 bas, Revised 12/4/14 bas; reviewed 3-19-2015 jw; Revised 4/20/15 LC;reviewed6-2015JW; Revised 12/2015 LC; REVISED7/19/2016JMW; reviewed 8/17 CH; revised10/19/2017ML&JW; Reviewed 2.2019 jc/Reviewed 7/19 JC

| MONTH: | - | - | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Needleless vial access | N/A | 5 | | | | | | | | | | | | |
| Spinal needle | N/A | 1 | | | | | | | | | | | | |
| 25g 5/8" needles | N/A | 5 | | | | | | | | | | | | |
| IV start kits | | 2 | | | | | | | | | | | | |
| ***SYRINGES THAT EXPIRE:*** | **FORM** | **QTY** | | | | | | | | | | | | |
| 20ml | N/A | 3 | | | | | | | | | | | | |
| 10ml | N/A | 5 | | | | | | | | | | | | |
| 6ml | N/A | 5 | | | | | | | | | | | | |
| 3ml | N/A | 5 | | | | | | | | | | | | |
| insulin syringes | N/A | 3 | | | | | | | | | | | | |
| 3-way stopcock | N/A | 3 | | | | | | | | | | | | |
| TB syringes | | 3 | | | | | | | | | | | | |
| **DRAWER 3**<br>Check lights and 3 blades | N/A | 3 | | | | | | | | | | | | |
| Surgilube (2nd Drawer)<br>(topical emollient) | N/A | 1 | | | | | | | | | | | | |
| Colorimetric | | | | | | | | | | | | | | |
| **IV MEDs (Drawer 4)** | **FORM** | **QTY** | | | | | | | | | | | | |
| dextrose 5% water, 100ML | BAG | 1 | | | | | | | | | | | | |
| dextrose 5% water, 250 ML | BAG | 1 | | | | | | | | | | | | |
| dextrose 5% ½ NS, 1000ML | BAG | 1 | | | | | | | | | | | | |
| sodium chloride 0.9%, 1000ML | BAG | 1 | | | | | | | | | | | | |
| lactated ringers, 1000ML | BAG | 2 | | | | | | | | | | | | |
| Intralipid 20% IV emulsion | BAG | 5 | | | | | | | | | | | | |
| Lipid Start Kit (Local Anesthesia Toxicity) | KIT | 1 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| **PEDIATRIC KITS (Drawer 5)** | **FORM** | **QTY** | | | | | | | | | | | | |
| Green | KIT | 1 | | | | | | | | | | | | |
| Orange | KIT | 1 | | | | | | | | | | | | |

K:/ASC Policy Manual/SECT 3000 EMERGENCY/3008b Attachment Crash Cart medication list; Revised 01/02/2014 bas, Revised 12/4/14 bas; reviewed 3-19-2015 jw; Revised 4/20/15 LC;reviewed6-2015JW; Revised 12/2015 LC; REVISED7/19/2016JMW; reviewed 8/17 CH; revised10/19/2017ML&JW; Reviewed 2.2019 jc/Reviewed 7/19 JC

| MONTH: | - | - | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Blue | KIT | 1 | | | | | | | | | | | | |
| White | KIT | 1 | | | | | | | | | | | | |
| Purple | KIT | 1 | | | | | | | | | | | | |
| Yellow | KIT | 1 | | | | | | | | | | | | |
| Red/Pink | KIT | 1 | | | | | | | | | | | | |
| **INSIDE DOORS** | **FORM** | **QTY** | | | | | | | | | | | | |
| Intraosseous power driver | BOX | 1 | | | | | | | | | | | | |
| I/O needle sets (3-39kg) | PKG | 4 | | | | | | | | | | | | |
| I/O stabilizers (for 3-39kg sets) | BOX | 4 | | | | | | | | | | | | |
| I/O needle sets (>40kg) with stabilizers | PKG | 5 | | | | | | | | | | | | |
| Flashlight with 2 batteries in it | N/A | 1 | | | | | | | | | | | | |
| LMA's: 2, 2.5, 3, 4, 5 | N/A | 5 | | | | | | | | | | | | |
| Sterile Gloves 6,7,8 | | | | | | | | | | | | | | |
| **TOP OF CART** | **FORM** | **QTY** | | | | | | | | | | | | |
| Electrodes | 1 pack | 1 | | | | | | | | | | | | |
| PediPads | 2 packs | 4 | | | | | | | | | | | | |
| Adult | 3 packs | 4 | | | | | | | | | | | | |
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ARROW EZ-IO
INTRAOSSEOUS VASCULAR ACCESS

ARROW EZ-IO
INTRAOSSEOUS VASCULAR ACCESS

## PRODUCT INFORMATION


**DESCRIPTION:**
- The EZ-IO® Power Driver is a sealed, hand-held, lithium battery powered medical device.

**PRODUCT INFORMATION:**
- Driver Ref. numbers: 9040 (Tactical); 9058 (Chiltan).
- Applied Parts: EZ-IO® Intraosseous Vascular Access Needles – 15 mm; 25 mm; 45 mm.

**SAFETY INFORMATION:**
- Indications, contraindications, warnings, precautions, and other safety information are contained in the Instructions for Use for the EZ-IO® Intraosseous Vascular Access System.
- Please consult the Instructions for Use for the EZ-IO® Intraosseous Vascular Access System before applying. If there are questions, or if this information sheet is missing, immediately contact your local Teleflex sales representative.
- Additional product information can be found at ArrowEZIO.com.
- As with any emergency medical device carrying a backup is a strongly advised protocol.

**IMPORTANT INFORMATION FOR USERS:**
In order for EZ-IO® Intraosseous Vascular Access System products to perform properly, the following conditions are recommended. Failure to comply with these conditions will void any applicable warranties.
- Use this product only in accordance with this manual and applicable product labeling.
- Adjustments, modifications, technical maintenance or repairs are not allowed.
- Do not connect this product or its components to products not recommended by Teleflex.
- Use only EZ-IO® Intraosseous Vascular Access needle sets with this product.
- Visually inspect driver for cracks and sharp corners before use.
- Avoid spilling fluids on any part of this product.
- Do not use excessive force during insertion. Let the EZ-IO® Power Driver do the work.

**STORAGE:**
- The EZ-IO® Power Driver and accessories may be stored at temperatures between -20°C to 50°C (-4°F to 122°F).
- Expected shelf life for the EZ-IO® Power Driver is 10 years or approximately 500 insertions.
- Life expectancy is dependent on actual usage (bone density and average insertion time), storage, and frequency of testing.
- When storing the Vascular Access Pak (VAP) remove the trigger guard to prevent accidental activation of the EZ-IO® Power Driver.

**BATTERY INFORMATION:**
- Drivers are sealed and not intended to be opened.
- Batteries are not replaceable.

**INDICATORS & ALERTS:**
- EZ-IO® Power Driver LED will be solid green when trigger is activated and has sufficient power.
- EZ-IO® Power Driver LED will blink red when the trigger is activated and has only 10% of battery life remaining.
- Purchase and replace the EZ-IO® Power Driver when the red LED begins blinking.

**CARE AND CLEANING:**
1. Maintain ESI or PPE precautions.
2. Wipe entire exterior surface of EZ-IO® Power Driver with soft, clean moistened cloth. Use soft bristled brush to remove any visible soil.
3. Spray exterior surface with anti-microbial solution following the solution manufacturer's specific recommendations.
4. Gently wipe exterior surfaces with gauze pads until visible debris is removed.
5. Clean and manipulate trigger using cloth moistened with anti-microbial solution.
6. Using sterile swabs, moisten with anti-microbial solution, gently clean inside opening around metal drive shaft.
7. After cleaning, inspect to ensure no visible debris remains, and no damage has occurred.
8. Dry driver with a soft, clean cloth and return to appropriate location.

Do not immerse or use excessive amount of liquid when performing cleaning and disinfecting. In the unlikely event of a driver failure, remove the EZ-IO® Power Driver, grasp the needle set by hand, and advance the needle set into the medullary space while twisting the needle set.

If your clinical environment requires sterilization, the EZ-IO® Power Driver can be sterilized using the STERRAD® 100S System. STERRAD® Systems are products of ADVANCED STERILIZATION PRODUCTS, Division of Ethicon Inc., a Johnson & Johnson company.

**WARNING:** No modification of this equipment is allowed.

**ArrowEZIO.com**

**EMERGENCY NUMBER:**

**1.800.680.4911**

Teleflex®

Customer Service: 1.866.479.8500

Manufactured for:
Teleflex Medical
IDA Business & Technology Park,
Dublin Rd, Athlone,
Co. Westmeath, Ireland

At the completion of the Power Driver's useful life, proper disposal is the responsibility of the institution or service (Directive 2012/19/EU).

Intertek
4001839

This device is restricted for sale by or on order of a physician.

Serial Number

Degree of protection against electric shock BF Applied part.

CE
0086

The Splash Guidance in the Medical Device Directive (93/42/EEC).

Consult Instructions For Use



8047 Rev 15 (06/2015)

# ARROW® EZ-IO®

INTRAOSSEOUS VASCULAR ACCESS

## EZ-IO® POWER DRIVER

Instructions for Use

Teleflex

## Declaration-Electromagnetic Emissions

The EZ-10® Power Driver is intended for use in the electromagnetic environment specified below. The customer or the user of the EZ-10® Power Driver should assure that it is issued in such an environment.

| Emission Test | Compliance | Compliance |
|---|---|---|
| RF Emissions CISPR 11 | Group 1 | The EZ-10™ Power Driver uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause interference in nearby electronic equipment. |
| RF Emissions CISPR 11 | Class B | The EZ-10™ Power Driver is suitable for use in all establishments, including domestic establishments and those directly connected to the public low voltage power supply network that supplies buildings used for domestic purposes. |
| Harmonic emissions IEC 61000-3-2 | Not applicable | |
| Voltage fluctuations/flicker emissions IEC 61000-3-3 | Not applicable | |

## Declarations – Electromagnetic Immunity

The EZ-10® Power Driver is intended for use in the electromagnetic environment specified below. The customer or the user of the EZ-10® Power Driver should assure that it is issued in such an environment.

| Immunity test | IEC 60601 test level | Compliance Level | Electromagnetic Environment-Guidance |
|---|---|---|---|
| Electrostatic discharge (ESD) IEC 61000-4-2 | +/- 6 kV Contact<br>+/- 8 kV air | +/- 6 kV Contact<br>+/- 8 kV air | Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material the relative humidity should be at least 30%. |
| Electrical fast Transient/burst IEC 61000-4-4 | +/- 2 kV for power supply lines<br>+/- 1 kV for input, output lines | Not applicable (battery powered)<br>Not applicable (no I/O lines) | Mains power quality should be that of a typical commercial or hospital environment. |
| Surge IEC 61000-4-5 | +/- 1 kV differential mode<br>+/- 2 kV common mode | Not applicable (battery powered) | Mains power quality should be that of a typical commercial or hospital environment. |
| Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11 | < 5% Ur (>95% dip in Ur) for 0.5 cycles<br>40% Ur (60% dip in Ur) for 5 cycles<br>70% Ur (30% dip in Ur) for 25 cycles<br><5% Ur (95% dip in Ur) for 5 sec | Not applicable (battery powered) | Mains power quality should be that of a typical commercial or hospital environment. If the user of the EZ-10™ Power Driver requires continued operation during power mains interruptions, it is recommended that the power driver be powered from an uninterruptible power supply or a battery. |
| Power frequency (50/60Hz) magnetic field IEC 61000-4-8 | 3 A/m | 3 A/m | Power frequency magnetic fields should be at levels characteristic of typical location in typical commercial or hospital environment. |

NOTE: Ur is the a.c. mains voltage prior to application of the test level.

## Guidance and Manufacturer's Declaration — Electromagnetic Immunity

The EZ-10® Power Driver is intended for use in the electromagnetic environment specified below. The customer or the user of the EZ-10® Power Driver should assure that it is used in such an environment.

| Immunity test | IEC 60601 test level | Compliance Level | Electromagnetic environment — guidance |
|---|---|---|---|
| Conducted RF<br>IEC 61000-4-6<br>Radiated RF<br>IEC 61000-4-3 | 3 Vrms<br>150 kHz to 80 MHz<br>3 V/m<br>80 MHz to 2.5 GHz | Not applicable (battery powered)<br>3 V/m | Portable and mobile RF communications equipment should be used no closer to any part of the driver including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance<br>$d = \left[\frac{3.5}{V_1}\right]\sqrt{P}$<br>$d = \left[\frac{3.5}{E_1}\right]\sqrt{P}$<br>$d = \left[\frac{7}{E_1}\right]\sqrt{P}$<br>where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m).<br>Field strengths from fixed RF transmitters as determined by an electromagnetic site survey, a should be less than the compliance level in each frequency range.b<br>Interference may occur in the vicinity of equipment marked with the following symbol: |

NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.
NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.

a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters an electromagnetic site survey should be considered. If the measured field strength in the location in which the EZ-10™ Power Driver is used exceeds the applicable RF compliance level above, the EZ-10™ Power Driver should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the EZ-10® Power Driver. b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

## Recommended separation distances between portable and mobile RF communications equipment and the EZ-10® Power Driver

The EZ-10® Power Driver is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the EZ-10® Power Driver can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the EZ-10® Power Driver as recommended below, according to the maximum output power of the communications equipment.

| Rated maximum output power of transmitter W | Separation distance according to frequency of transmitter m | | |
|---|---|---|---|
| | 150 kHz to 80 MHz $d = \left[\frac{3.5}{V_1}\right]\sqrt{P}$ | 80 MHz to 800 MHz $d = \left[\frac{3.5}{E_1}\right]\sqrt{P}$ | 800 MHz to 2.5 GHz $d = \left[\frac{7}{E_1}\right]\sqrt{P}$ |
| .01 | 0.12 | 0.12 | 0.23 |
| .1 | 0.38 | 0.38 | 0.73 |
| 1 | 1.2 | 1.2 | 2.3 |
| 10 | 3.8 | 3.8 | 7.3 |
| 100 | 12 | 12 | 23 |

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter; where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.
NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.

- Medical electrical equipment needs special precautions regarding EMC and needs to be installed and put into service accordingly to the EMC information provided in this manual.
- Portable and mobile RF communications can affect medical electrical equipment.
- The use of accessories, transducers, and cables other than those specified by the manufacturer, may result in increased emissions or decreased immunity of the EZ-10® Power Driver.
- The EZ-10® Power Driver should be observed to verify normal operation in the configuration it will be used.
- The EZ-10® Power Driver is designed and tested to run intermittently with a duty cycle of 30 seconds on, 1 minute off for 5 consecutive cycles. Allow 1 hour cool down time.

## Equipment Classification

| | |
|---|---|
| Type of protection against electric shock | NA internal powered equipment |
| Degree of protection against electric shock | Type BF applied part |
| Degree of protection against ingress of water | IPX0 Ordinary protection |
| Degree of safety or application in the presence of a flammable anesthetic mixture | Equipment not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide |

ARROW EZ-IO

## WARRANTY INFORMATION

### TELEFLEX LIMITED EXPRESS WARRANTY AND DISCLAIMERS

Teleflex warrants to the original end user of the Products only ("**End User**") that during the applicable Warranty Period: (a) the hardware Products will conform with Teleflex's written product specifications for such Products in all material respects for the shorter of (i) one year after shipment to End User or (ii) the number of uses of such hardware Product as are specified by Teleflex in its written product specifications, and (b) the disposable Products will conform with Teleflex's written product specifications for such Products in all material respects until the expiration date designated therefor on such disposable Products (collectively, the "**Warranty Period**"), unless the Products have been subjected to physical abuse, misuse, abnormal use, use not consistent with Teleflex's published directions and instructions for use, fraud, tampering, unusual physical stress, negligence or accidents ("**Express Warranty**"). Teleflex does not guarantee that the operation of a hardware Product will be uninterrupted or error-free. Teleflex will, in its discretion, repair, replace or refund the purchase price to End User for Product determined by Teleflex to be non-conforming ("**Remedies**"), provided that End User returns the nonconforming Product to Teleflex during the applicable Warranty Period, at End User's expense and first gives prompt written notice to Teleflex so that Teleflex can issue a Return Material Authorization ("**RMA**") number. Products sent to Teleflex for warranty replacement without a valid RMA number displayed on the outside of the shipping container may, in Teleflex's discretion, be returned to End User at End User's expense. All returned nonconforming Product become the property of Teleflex. To the extent permitted by law, Teleflex may repair or replace nonconforming hardware Products (a) with new or previously used Products or parts equivalent to new in performance and reliability, or (b) with equivalent Products to an original Product that has been discontinued. Replacement Products (or parts thereof) are warranted for the remainder of the Warranty Period of the Product they are replacing. THE REMEDIES DESCRIBED HEREIN SHALL BE END USER'S SOLE AND EXCLUSIVE REMEDY FOR A FAILURE OF A PRODUCT TO CONFORM TO THE EXPRESS WARRANTY. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, THE EXPRESS WARRANTY IS THE SOLE AND EXCLUSIVE WARRANTY AND GIVEN IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT, FITNESS FOR A PARTICULAR PURPOSE, SATISFACTORY QUALITY OR SUITABILITY. IF THE DISCLAIMER OF ANY IMPLIED WARRANTY IS NOT PERMITTED BY APPLICABLE LAW, SUCH EXPRESS WARRANTY IS LIMITED TO NINETY (90) DAYS FROM THE DATE OF ORIGINAL PURCHASE. OTHER THAN THE EXPRESS WARRANTY, THE PRODUCTS ARE PROVIDED "AS IS" AND ARE DESIGNED FOR USE SOLELY BY QUALIFIED HEALTHCARE PERSONNEL USING REASONABLE MEDICAL DISCRETION IN MEDICALLY NECESSARY SITUATIONS. TELEFLEX DISCLAIMS ALL LIABILITY WITH RESPECT TO THE PRODUCTS ARISING FROM ANY USE OF THE PRODUCTS THAT IS INCONSISTENT WITH TELEFLEX'S PUBLISHED DIRECTIONS AND INSTRUCTIONS FOR USE. IN NO EVENT SHALL TELEFLEX BE LIABLE TO END USER, ANY CUSTOMER OR ANY OTHER THIRD PARTY ("CLAIMANT") IN ANY MANNER FOR ANY SPECIAL, NON-COMPENSATORY, CONSEQUENTIAL, INDIRECT, INCIDENTAL, STATUTORY OR PUNITIVE DAMAGES OF ANY KIND, WHETHER ARISING UNDER CONTRACT OR TORT LAW (INCLUDING NEGLIGENCE AND STRICT PRODUCT LIABILITY), REGARDLESS OF THE FORM OF LEGAL ACTION EVEN IF TELEFLEX IS AWARE OF THE POSSIBILITY OF ANY SUCH DAMAGES IN ADVANCE. TELEFLEX'S TOTAL AGGREGATE LIABILITY IN CONNECTION WITH THE PURCHASE OR USE OF THE PRODUCTS SHALL NOT EXCEED THE SUM OF THE AMOUNTS PAID BY CLAIMANT TO TELEFLEX DURING THE TWELVE (12) MONTHS IMMEDIATELY PRECEDING THE DATE OF THE EVENT GIVING RISE TO A CLAIM AGAINST TELEFLEX.

Teleflex®

# Arrow® EZ-IO® Intraosseous Vascular Access System
# Procedure and Competency Validation Template

**Please refer to Instructions for Use (IFU) on all products prior to use.**

## I. PURPOSE:

To provide procedural guidance and skills validation for establishment of intraosseous vascular access using the Arrow® EZ-IO® Intraosseous Vascular Access System.

☐ **Indications for Use:**

For intraosseous access anytime in which vascular access is difficult to obtain in emergent, urgent or medically necessary cases for up to 24 hours. For patients ≥ 12 years old, the device may be extended for up to 48 hours when alternate intravenous access is not available or reliably established.

| ☐ **Adults** | ☐ **Pediatrics** |
|---|---|
| Proximal humerus<br>Proximal tibia<br>Distal tibia | Distal Femur<br>Proximal humerus<br>Proximal tibia<br>Distal tibia |

☐ **Contraindications:**

- Fracture in target bone
- Previous, significant orthopedic procedures at insertion site, prosthetic limb or joint
- IO access (or attempted IO access) in the targeted bone within the past 48 hours
- Infection at area of insertion
- Excessive tissue (severe obesity) and/or absence of adequate anatomical landmarks

☐ **EZ-IO® System equipment/supplies:**

- EZ-IO® Power Driver
- EZ-IO® Needle Set
- EZ-Connect® Extension Set
- EZ-Stabilizer® Dressing (plus pack inclusion)
- NeedleVISE® Sharps Block for sharps containment

☐ **Additional equipment/supplies needed:**

- Non-sterile gloves
- Insertion site cleanser (per institutional protocol/policy)
- Luer lock syringe with sterile normal saline flush (5-10 mL for adults, 2-5 mL for infant/child)

☐ **Additional equipment/supplies if indicated/ordered:**

- 2% preservative-free and epinephrine-free lidocaine (intravenous lidocaine), following physician order, institutional protocols and policy
- Intravenous fluid
- Infusion pressure pump or pressure bag, tubing, 3-way stop cock
- Supplies for lab samples

☐ **Preparation:**

- Explain procedure to patient/family when possible
- Obtain assistance as needed
- Wash hands in preparation for aseptic technique

☐ **Insertion site identification:**

Palpate site to locate appropriate anatomical landmarks for needle set placement and to estimate soft tissue depth overlying the insertion site. Utilize the correct technique below based on patient and site selected:

☐ Proximal Humerus (Adult/Pediatric)

Internally rotate and adduct the arm using one of the following methods: 1) Place the hand over the abdomen with the arm tight to the body, or 2) place the arm tight against the body and rotate the hand so the palm is facing outward, thumb pointing down. Palpate the surgical neck of the proximal humerus. The insertion site is on the anterolateral part of the arm, 1-2 cm above the surgical neck, in the most prominent aspect of the greater tubercle. Insert needle set into the greater tubercle at an approximately 45-degree angle, as if aiming toward the opposite hip.

☐ Distal Femur (Neonate/Infant/Child)

Secure site with leg outstretched to ensure knee does not bend. The insertion site is approximately 1-2 cm proximal to the superior border of the patella and approximately 1 cm medial to the mid-line (depending on patient anatomy). Aim the needle set tip at a 90-degree angle to the bone for insertion.

☐ Proximal Tibia (Adult/Older Child)

Extend the leg. Insertion site is approximately 3 cm below the inferior border of the patella and approximately 2 cm medial to the tibial tuberosity along the flat aspect of the tibia (depending on patient anatomy). Aim the needle set tip at a 90-degree angle to the bone for insertion.

☐ Proximal Tibia (Neonate/Young Child)

If the tibial tuberosity can be palpated the insertion site is approximately 1 cm medial to the tibial tuberosity. If the tibial tuberosity cannot be palpated, the insertion site is approximately 1-2 cm below the patella and approximately 1 cm medial, along the flat aspect of the tibia (depending on patient anatomy). Aim the needle set tip at a 90-degree angle to the bone for insertion.

☐ Distal Tibia (Adult/Older Child)

Insertion site is approximately 3 cm proximal to the most prominent aspect of the medial malleolus (depending on patient anatomy). Palpate the anterior and posterior borders of the tibia to ensure that your insertion site is on the flat center aspect of the bone. Aim the needle set tip at a 90-degree angle to the bone for insertion.

☐ Distal Tibia (Neonate/Young Child)

Insertion site is approximately 1-2 cm proximal to the most prominent aspect of the medial malleolus (depending on patient anatomy). Palpate the anterior and posterior borders of the tibia to ensure that your insertion site is on the flat center aspect of the bone. Aim the needle set tip at a 90-degree angle to the bone for insertion.

☐ **EZ-IO® Needle Set selection:**

Select EZ-IO® Needle Set based on patient weight (kg), anatomy, and clinical judgment. The EZ-IO® Needle Set is marked with black lines. Prior to drilling, with the EZ-IO® Needle Set inserted through the soft tissue and the needle tip touching bone, adequate needle length is determined by the ability to see at least one black line outside the skin.

- EZ-IO® 45 mm Needle Set (yellow hub) is indicated for patients ≥40 kg. This needle length should be considered for proximal humerus site in most patients weighing ≥40 kg, to accommodate for any inadvertent movement of the extremity after insertion. This needle length should also be considered for patients with excessive tissue over any insertion site.
- EZ-IO® 25 mm Needle Set (blue hub) is indicated for patients ≥3 kg
- EZ-IO® 15 mm Needle Set (pink hub) is indicated for patients 3-39 kg

☐ **Insertion:**

- Use aseptic technique
- Clean insertion site per institutional protocol/policy
- Prepare supplies
  - Unlock clamp on EZ-Connect® Extension Set
  - Prime EZ-Connect® Extension Set, purge air
  - Attach EZ-IO® Needle Set to EZ-IO® Power Driver and remove safety cap

## II. ADULT INSERTION TECHNIQUE

☐ Proximal Humerus - Adult

1. Aim the needle set at a 45-degree angle as if aiming toward the opposite hip
2. Push the needle set tip through the skin until the tip rests against the bone
   - The 5-mm mark must be visible outside the skin for confirmation of adequate needle set length
3. Squeeze trigger and apply gentle, steady pressure
4. Gently drill. In the proximal humerus for most adults the needle set should be advanced until the hub is flush or against the skin (this may be more than approximately 1 cm)

☐ Tibia - Adult

1. Aim the needle set at a 90-degree angle to the bone
2. Push the needle set tip through the skin until the tip rests against the bone
   - The 5-mm mark must be visible outside the skin for confirmation of adequate needle set length
3. Squeeze trigger and apply gentle, steady pressure
4. Continue advancing the needle set approximately 1 cm after entry into the medullary space

## III. INFANT/CHILD INSERTION TECHNIQUE

☐ Proximal Humerus – Infant/Child

1. Aim the needle set tip at a 45-degree angle as if aiming toward the opposite hip
2. Push the needle set tip through the skin until the tip rests against the bone
   a. The 5-mm mark must be visible outside the skin for confirmation of adequate needle set length
3. Squeeze trigger and apply gentle, steady pressure, immediately release the trigger when you feel a sudden "give" or "pop" as the needle set enters the medullary space
   a. Avoid recoil – do NOT pull back on the driver when releasing the trigger

☐ Femur and Tibia – Infant/Child

1. Aim the needle set at a 90-degree angle to the bone
2. Push the needle set tip through the skin until the tip rests against the bone
   a. The 5-mm mark must be visible outside the skin for confirmation of adequate needle set length
3. Squeeze trigger and apply gentle, steady pressure, immediately release the trigger when you feel a sudden "give" or "pop" as the needle set enters the medullary space
   a. Avoid recoil – do NOT pull back on the driver when releasing the trigger

## IV. INSERTION COMPLETION

1. Stabilize Needle Set Hub, disconnect EZ-IO® Power Driver, and remove stylet
2. Place stylet into NeedleVISE® Sharps Block for sharps containment
   a. Place the NeedleVISE® Block on a flat stable surface. Immediately following use of a needle, use a one-handed technique holding the stylet hub, firmly insert the sharp pointed tip straight down into the opening in the NeedleVISE® Block until it stops. Do not hold NeedleVISE® Block with free hand. Dispose of opened sharp into NeedleVISE® Block whether or not it has been used
3. Obtain samples for lab analysis, if needed (stabilize cannula)
   a. Only attach a syringe directly to the EZ-IO® Cannula Hub when drawing blood for laboratory analysis, administering anesthetic or removal
4. Place EZ-Stabilizer® Dressing over cannula hub

5. For patients responsive to pain, consider 2% preservative-free and epinephrine-free lidocaine (intravenous lidocaine), follow institutional protocols/policy*
6. Attach a primed EZ-Connect® Extension Set to the hub, firmly secure to cannula hub by twisting clockwise, ensure clamp is open
7. Pull the tabs off the dressing to expose the adhesive and adhere to the skin
8. Flush the EZ-IO® Cannula with normal saline (0.9% Sodium Chloride; 5-10 ml for adults, 2-5 ml infant/child)
    a. Prior to flush, aspirate for blood/bone marrow (2nd confirmation of placement)
    b. Inability to withdraw/aspirate blood from the cannula hub does not mean the insertion was unsuccessful
9. Administer medications and fluids as ordered and pressurize fluids up to 300 mmHg for maximum flow
10. Verify placement/patency prior to all infusions. Use caution when infusing hypertonic solutions, chemotherapeutic agents, or vesicant drugs
11. Stabilize the affected limb and monitor site for extravasation or other complications.
    a. For proximal humerus insertions, apply arm immobilizer or another securement device
    b. For distal femur insertions, maintain securement of the leg to ensure the knee does not bend
12. Document date and time on pink wristband and place on patient

## V. IO INFUSION PAIN MANAGEMENT USING 2% LIDOCAINE (preservative-free and epinephrine-free)*

*Review lidocaine manufacturer's IFU prior to administration and observe recommended cautions/contraindications.*

With the stabilizer in place, carefully attach syringe directly to IO catheter luer-lock hub, without extension set in place.

1. Slowly infuse initial dose of lidocaine over 120 seconds and allow to dwell for 60 seconds
    - Adult: initial dose 40 mg
    - Infant/Child: initial dose 0.5mg/kg (NOT to exceed 40 mg)
1. Flush IO catheter with normal saline
    - Adult flush: 5-10 mL
    - Infant/Child flush: 2-5 mL
2. Slowly infuse lidocaine (half of initial dose) over 60 seconds
3. Attach extension set primed with normal saline and flush

Repeat PRN. Consider systemic pain control for patients not responding to IO lidocaine.

## VI. REMOVAL TECHNIQUE

1. Remove EZ-Connect® Extension Set
2. Lift and remove EZ-Stabilizer® Dressing
3. Stabilize cannula hub and attach a Luer lock syringe to the hub
4. Maintaining axial alignment, twist clockwise and pull straight out. Do not rock or bend the cannula.
5. Dispose of cannula with syringe attached into sharps container
6. Dress site per institutional protocol/policy

*DISCLAIMER: Observe cautions/contraindications for lidocaine, confirm dose per institution. Selection and use of any medication, including lidocaine, given IV or IO is the responsibility of the treating physician, medical director, or qualified prescriber and is not an official recommendation of Teleflex Incorporated. The information provided is a summary of information found in the cited reference materials. This information is not intended to be a substitute for sound clinical judgment or your institution's treatment protocols. Teleflex Incorporated is not the manufacturer of lidocaine. Users should review the manufacturer's instructions or directions for use and be familiar with all indications, side effects, contraindications, precautions and warnings prior to administration of lidocaine or any other medication. Teleflex Incorporated disclaims all liability for the application or interpretation of this information in the medical treatment of any patient. Any health care provider using this material assumes full responsibility for the medical care and treatment of their patients. For additional information please visit www.eziocomfort.com.

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For additional information please visit www.teleflex.com.

Rx Only.
CAUTION: Federal (USA) law restricts this device to sale by or on the order of a physician.
The Arrow® EZ-IO® Needle Set is Sterile, Single Use: Do not reuse, reprocess or re-sterilize. Reuse of device creates a potential risk of serious injury and/or infection which may lead to death. Refer to Instructions for Use for complete warnings, indications, contraindications, precautions, and potential complications.

This material is not intended to replace standard clinical education and training by Teleflex Incorporated, and should be utilized as an adjunct to more detailed information which is available about the proper use of the product. View educational resources at Teleflex.com or contact a Teleflex clinical professional with any detailed questions related to product insertion, maintenance, removal, and other clinical education information.

Selection and use of any medication, including lidocaine, given IV or IO is the responsibility of the treating physician, medical director, or qualified prescriber and is not an official recommendation of Teleflex Incorporated. The information provided is a summary of information found in the cited reference materials. This information is not intended to be a substitute for sound clinical judgment or your institution's treatment protocols.