Emergency Medicine Pocket Guide
Intraosseous Access and Airway Management Products
1. Place the blade in the notch on the back side of the blade. 
2. Grasp blade with the tip facing away from you. Place the palpable lamina in a slightly ‘sniffing’ position. Hold the distal end of the mask in the mouth with thumb and index finger. Apply the gel with the distal tip of the mask making contact with the upper lip. Use clinical judgment to replace a mask that may be too big. If the taping tab is not secured and inflated, diagnostic tests #1 and #2 are optional.

#1 - Fixation Tab Test 
(Recommended to confirm correct size and esophageal seal) 
Diagnostic Test #1: Fixation Tab Test

- The gel should remain covered across the top of the drain tube. This indicates that the esophageal seal has been achieved by ensuring the tip of the mask is against the upper lip. Use clinical judgment to replace a mask that may be too big. 

- The OG tube should be well lubricated and suctioned at any time during the procedure. 

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**Rüsch® Airtraq™ System**

- 3. Position the mask, and place your thumb on the back side of the blade.
- 4. Pull the blade up away from the glottis.
- 5. Place the patient's head in a neutral or the LMA® Supreme™ Airway insertion position.

**Training Blades**

- 1. Insert midline between the vocal cords.
- 2. Center vocal cords.

**Sizing Guide**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Size 1</th>
<th>Size 2</th>
<th>QtY</th>
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<tr>
<td>A-031</td>
<td>4.0 - 5.5 11.5 mm</td>
<td></td>
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<td>2</td>
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<tr>
<td>A-041</td>
<td>2.5 - 3.5 11.0 mm</td>
<td></td>
<td></td>
<td>2</td>
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<tr>
<td>ATQ-831</td>
<td>4.0 - 5.5 11.5 mm</td>
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<td>ATQ-841</td>
<td>2.5 - 3.5 11.0 mm</td>
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**Diagnostic Tests**

- 1. **Fixation Tab Test**
  - After the LMA® Supreme™ Airway is inserted, confirm the fixation tab is in place, in the unlikely event of active regurgitation, the drain tube was passed slowly and carefully. Suction should be applied directly to the end of the drain tube. The gel should remain covered across the top of the drain tube.
  - Ensure the drain tube is inserted and the cuff sealed.

- 2. **OG Tube Placement**

**Alternative Sizing Method**

- 1. Use the LMA® Supreme™ Airway sizing chart to determine the appropriate size LMA® Supreme™ Airway.
  - In case of difficulty, rotate the patient’s head and neck to the side where the LMA® Supreme™ Airway is being placed.

**References:**


3. Michael Horn, MD,++ Roxanne Hertzog, MD++

**Figure Credits:**


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### Arrow EZ-IO® System

**Advantages of proximal Arrow™ EZ-IO® System**

- **Less medication**
- **3 seconds to heart**
- **Associated with percutaneous insertion of sterile devices.**
- **Infection, hematoma, extravasations, or other complications medically necessary cases.**

The Arrow™ EZ-IO® Intraosseous Vascular Access System offers multiple sites for proven2, fast3 and required for pain & infusion pain5,7-9 management.2

**24-Hour Clinical Support** 888-413-3104

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**Dosage of lidocaine**

For IO Infusion Pain Management Using 2% Lidocaine (preservative-free and epinephrine-free)

1. With the stabilizer in place, carefully attach syringe to luer-lock hub, without extension set in place.
2. Slowly infuse initial dose of lidocaine over 120 seconds.
   - **INFANT/CHILD:** initial dose 0.5mg/kg (NOT to exceed 40 mg)
   - **ADULT** flush: 5-10 mL
   - **INFANT/CHILD** flush: 2-5 mL
3. Attach extension set to luer-lock hub with clamp open.
4. Slowly infuse lidocaine (half of initial dose) over 60 seconds.
5. Attach extension set to luer-lock hub with clamp open.

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**Removal**

- **With the stabilizer in place,** pull straight up. Avoid rocking the alignment and rotate clockwise while pulling straight up.
- **Remove adhesive from back of EZ-Stabilizer® Dressing.**
- **Apply to skin.**
- **Dispose of catheter needle on removal.**

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**Disclaimer:**

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 serve as a replacement for medical advice or treatment. 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. For additional information please visit www.eziocomfort.com.

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**Reference Information**

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<tr>
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<tr>
<td>9018P-VC-005</td>
<td>EZ-IO® 15 mm Needle Set*</td>
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<tr>
<td>9066-VC-005</td>
<td>EZ-Stabilizer® Dressing</td>
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<tr>
<td>9018-VC-005</td>
<td>EZ-IO® 15 mm Needle Set*</td>
</tr>
<tr>
<td>9079-VC-005</td>
<td>EZ-IO® 45 mm Needle Set*</td>
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<tr>
<td>9079P-VC-005</td>
<td>EZ-IO® 45 mm Needle Set* + Access Driver</td>
</tr>
<tr>
<td>9058</td>
<td>NeedleVISE® Sharps Block</td>
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<tr>
<td>9079</td>
<td>EZ-IO® 45 mm Needle Set*</td>
</tr>
<tr>
<td>9058-VC-005</td>
<td>EZ-Connect® Extension Set, Patient Wrist Band and Dressing</td>
</tr>
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**EZ-IO® App**

Download the EZ-IO® System App from the App Store or Google Play.

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**Teleflex.com/ezio**

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**Dialysis**

- Using a sterile kit,我心里系 volunteering as a dialysis staff. In dialysis, I will perform a thorough physical exam and ensure all medications are administered. I will also provide education to the patient and assist with the dialysis procedure. This can be very intense work, but I am eager to learn and help those in need.
Do NOT use the powered EZ-IO® System in the sternum site as this may cause iatrogenic injury and excessive bleeding.

Advantages of proximal humerus site include:

- Less medication/fluids
- Lower insertion
- Flow rates average 6.3 L/hr

The Arrow® EZ-IO® System is effective vascular access in emergent, urgent, or associated with percutaneous insertion of sterile devices.

**Landmarking**

- You should be able to feel the surgical neck if the shoulder is facing down.
- The area that feels like a "ball" under your patient's shoulder anteriorly.
- Place your palm on the patient's hand over the axilla. Place the ulnar aspect of the opposite hand along the midline of the upper arm and rotate clockwise.
- The insertion site is on the humerus to the surgical neck.
- It will feel like a golf ball over the arm.
- Palpate deeply as you climb up the line of insertion on the humerus.
- The surgical neck is the surgical neck on a tee – the spot where the humerus meets the lower arm.
- This identifies the vertical plane and posteromedial.

2

- With the stabilizer in place, carefully attach syringe directly to IO catheter luer-lock hub, without stabilizer set in place.
- 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 0.5 mg/kg (NOT to exceed 40 mg)

3

- Series lidocaine (half of initial dose) over 60 seconds
- Attach extension set primed with normal saline and flush

4

- Slowly infuse lidocaine (half of initial dose) over 60 seconds
- Attach extension set primed with normal saline and flush

**Consider Using Anesthetic for Patients Responsive to Pain**

**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.
- IO infusion is a method for providing analgesia as a method of pain management in IO catheter insertion.
- Prior to flush, consider flushing catheter with clamp open.
- If adequate IO flow rates cannot be achieved, protocols/policy.
- Stabilize extremity.
- If adequate IO flow rates cannot be achieved, consider systemic pain control for patients not responding to IO lidocaine.

**ADULT**

- Initial dose 40 mg

**INFANT/CHILD**

- Initial dose 0.5 mg/kg (NOT to exceed 40 mg)

**Repeat PRN**

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

**Cautions/contraindications**

- When using lidocaine, you 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.
- Tireless 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.
**Arrow EZ-IO® System**

**Key Information**
- **Hand Positioning Options**
- **Hand-Positioning Options**
  - To ensure proper insertion, palpate bony landmarks as described.
- **Tibia**
- **Tibia (Pediatrics Only)**
- **Femur**
- **Femur (Pediatrics Only)**
- **Distal Femur**
- **Plate**
- **Growth Plate**
- **Removal**
- **Consider Using Anesthetic for Patients Responsive to Pain**
- **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.
  - **Slowly infuse initial dose of lidocaine over 120 seconds and allow to dwell for 60 seconds**.
  - **Attach extension set primed with normal saline and flush ≥ 4 min total time.**

**Consider Using Anesthetic for Patients Responsive to Pain**

**IO Infusion Pain Management Using 2% Lidocaine**

1. **ADULT**: initial dose 40 mg
2. **INFANT/CHILD**: initial dose 0.5 mg/kg (NOT to exceed 40 mg)

**Consider the following**
- **with syringe attached in an approved sharps container.**
- **Firmly secure to catheter EZ-Connect® Extension Set.**
- **Attach primed needle on removal. Dispose of catheter hub with clamp open.**

**FAQ**
- **Do NOT use the powered EZ-IO® System in the sternum.**
- **Potential complications may result in a subcutaneous infection, hematoma, hemorrhage, or other complications associated with this site. In addition, the site has a number of important nerves and blood vessels.**

**Download the EZ-IO® System App**

**teleflex.com/em**
References:
1. Evaluation of the LMA Supreme: a sizing and troubleshooting study. Allan J. Goldman, MD,* Daniel Langille, CRNA,* Michael Flacco, MD,** Michael Horn, MD,** Roxanne Hertzog, MD**
5. Based on Adult Proximal Humerus data.
9. Based on adult proximal tibia data.
10. Compared to EZ-IO® System tibial insertions.

*Based on Adult Proximal Humerus EZ-IO® System insertion data.
+The University of Washington Medical Center (Seattle, WA)
++Outpatient Anesthesia Services (Seattle, WA) (presented at the 2008 Society for Airway Management Annual Meeting)