Central Venous Access
Can We Do Better?

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Objectives

Discuss Indications for Central Lines
Discuss the downsides to Central lines
Discuss Alternatives to Central Lines
Why Central Lines?
Volume resuscitation.

Emergency venous access

Vasopressor Therapy

Jugular > Subclavian > Femoral
Femoral > Subclavian > Jugular

Still the Right Thing to Do?
# Flow Rates in IV/IO Access

<table>
<thead>
<tr>
<th>Gauge</th>
<th>Approximate Flow Rate to Gravity (mL/min)</th>
<th>Time to Infuse IL (min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14G</td>
<td>250</td>
<td>4</td>
</tr>
<tr>
<td>16G</td>
<td>150</td>
<td>7</td>
</tr>
<tr>
<td>Cordis</td>
<td>130</td>
<td>8</td>
</tr>
<tr>
<td>18G</td>
<td>100</td>
<td>10</td>
</tr>
<tr>
<td>15G Humeral IO</td>
<td>80</td>
<td>13</td>
</tr>
<tr>
<td>16G Distal Port Triple Lumen</td>
<td>70</td>
<td>15</td>
</tr>
<tr>
<td>15G Tibial IO</td>
<td>70</td>
<td>15</td>
</tr>
<tr>
<td>20G</td>
<td>60</td>
<td>17</td>
</tr>
<tr>
<td>22G</td>
<td>35</td>
<td>29</td>
</tr>
<tr>
<td>18G Prox Port Triple Lumen</td>
<td>30</td>
<td>34</td>
</tr>
</tbody>
</table>

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Better Alternatives

Intraosseous Lines
Humeral Head

Tibial Plateau

Large Bore P.I.V
Midline Catheters
E-Z IJ

EASY IJ: US guided Placement of a Catheter into the IJ
Superior sagittal sinus
Inferior sagittal sinus
Straight sinus
Occipital
Right transverse sinus
Occipital sinus
Sigmoid sinus
Petrosal sinus
External jugular
Vertebral
Temporal
Cavernous sinus
Maxillary
Facial
Internal jugular
Right subclavian
Axillary
Superior vena cava

18 ga 60mm from CVC Kit
**Indications:**

- Unable to get peripheral access
- Want a “bridge” to a CVC
Why Central Lines?

Consider Other Options

- When am I placing this line?
- Why am I placing this line?
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