

# PREVENTING CATHETER OCCLUSION: THE CLOT TOOL

Key patient, provider and device factors have been identified as being associated with catheter occlusion in HMS hospitals. Some factors are modifiable in the clinical setting (i.e. number of lumens) versus some that cannot (i.e. advanced age, elevated BMI, and severe liver disease).

While not all risk factors are clinically actionable, there are clinically modifiable factors that are most associated with catheter occlusion.

These should be targeted to prevent occlusion and are summarized below:

FOUR FACTORS OF THE CLOT TOOL	
<b>C</b>	<b><u>Catheter Flush – Flush the PICC catheter(s) using the SASH method</u></b> Flushing the PICC catheter(s) using the SASH (Saline, Administer medication, Saline, Heparin) method is associated with a decrease in PICC occlusion
<b>L</b>	<b><u>Lumens – Use the least number of lumens necessary</u></b> Double and triple lumen PICCs are associated with an increase in PICC occlusions. Depending on the clinical situation, single lumens should be preferred when placing PICCs.
<b>O</b>	<b><u>Optimal Access— Insert the PICC catheter in the right arm, if possible</u></b> Left arm access is associated with an increase in PICC occlusions. Depending on the clinical situation, right arm access is preferred for reducing PICC occlusion.
<b>T</b>	<b><u>Tip – Verification of appropriate catheter tip position upon insertion and prevention of malposition</u></b> Confirming the PICC tip is in the appropriate location* upon insertion has been associated with a decrease in PICC occlusions. Conversely, tip malposition has shown an increase in catheter occlusion.

\*Appropriate PICC Tip Locations = Lower 1/3<sup>rd</sup> of the superior vena cava (SVC), cavo-atrial junction (CAJ), superior vena cava (SVC), or in the right atrium

For more information about the CLOT Tool, scan the QR code or view the full tool on the [HMS website](#)



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