

The chart below is intended as a guideline and is not intended to replace clinical judgment.

		AV FISTULAS AND GRAFTS			
		INDICATED TIME TO INTERVENTION			
Findings		<24 hrs	<48 hrs	<4 weeks	<6 weeks
Flow/ Hemodynamics	Access flow: AV fistula		<300 mL/min or > 50% drop from baseline	300 - 500 mL/min or > 20% drop from baseline	
	Access flow: AV graft		<500 mL/min or > 50% drop from baseline	500 - 650 mL/min or > 20% drop from baseline	
	Blood pump speed (BPS)		Suspect fistula clotting. BPS <200 mL/min with 15g needle or >50% drop from baseline	<300 mL/min by week 3 of initiating HD or <350 mL/min for established HD (on 2 consecutive HD runs) without other obvious cause	25-50% drop from baseline without other obvious cause
	Venous pressure			>125 -150 mmHg using 15-16g needles @ BPS 200 mL/min (3 consecutive runs) or >80% above baseline (3 consecutive runs) without other obvious cause	25-80% above baseline (3 consecutive runs) without other obvious cause
	Arterial pressure			Less than -220 (e.g., -240) mmHg using 15-16g needles @ BPS 200 mL/min (3 consecutive runs)	
Dialysis Adequacy	Urea reduction ratio			<66% without other obvious cause	
	KT/V			<1.2 without other obvious cause	
	Uremic symptoms			Present without other obvious cause	
Physical Findings	Cannulation	Suspect fistula clotted. Unable to cannulate		Difficult to cannulate	Prolonged bleeding post needle removal
	Arm swelling				AVF or AVG
	Facial swelling		Evidence of SVC syndrome (e.g., acute facial swelling with respiratory compromise)		Non-urgent central vein stenosis
	Pulse/thrill	Suspect fistula clotted. Loss of pulse/thrill in AVF.		<ul style="list-style-type: none"> <li>Suspect graft clotted (recommend &lt;5 days)</li> <li>Significant decrease in thrill/pulse in AVF</li> </ul>	
Clinical Scenario	Post-op thrombectomy			Fistulogram +/- transonic measure	
	Pre AVF/AVG creation				Urgency is based on surgery date.
	Failure to mature				Fistulogram
	Steal syndrome		Stage 4 (severe) Arm or leg arteriogram or CT angiogram based on VA Clinic assessment	Stage 3 Arm or leg arteriogram or CT angiogram based on VA clinic assessment	Stage 2 Arm or leg arteriogram or CT angiogram based on VA Clinic assessment

## HD Catheters:

Urgency criteria for diagnostic catheter studies are best determined locally and depend on multiple factors (e.g., impact of access problem on the patient receiving adequate dialysis, capacity for catheter line changes, etc).

Situations which require more urgent access to diagnostic imaging:

- Evidence of SVC syndrome (e.g., acute facial swelling with respiratory compromise): within 48 hours.
- Acute arm swelling, central vein stenosis is suspected: <2 weeks.

Indications and timelines are based on the provincial guideline "Indications & Urgency Criteria for Radiology HD Procedures" ([www.bcpra.ca](http://www.bcpra.ca)). The guideline was current as of the date on which it was published and was developed using existing standards and evidence for vascular access and chronic kidney disease. The guideline and this indications and timelines tool should be used in conjunction with pertinent clinical data and an assessment of the patient's condition. Approved by BCPRA HD Committee & MAC Dec 2015.

# INDICATIONS & URGENCY CRITERIA FOR DIAGNOSTIC IMAGING HEMODIALYSIS PROCEDURES

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## Stages of Steal Syndrome:

Stage I: Retrograde diastolic flow without complaints; steal phenomenon

Stage II: Pain on exertion and/or during hemodialysis

Stage III: Rest pain

Stage IV: Ulceration/necrosis/gangrene

Reference: Tordoir, JH et al. Upper extremity ischemia and hemodialysis vascular access. *Eur J Vasc Endovasc Surg* 2004; 27: 1-5

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This BCPRA guideline/resource was developed to support equitable, best practice care for patients with chronic kidney disease living in BC. The guideline/resource promotes standardized practices and is intended to assist renal programs in providing care that is reflected in quality patient outcome measurements. Based on the best information available at the time of publication, this guideline/resource relies on evidence and avoids opinion-based statements where possible; refer to [www.bcrenalagency.ca](http://www.bcrenalagency.ca) for the most recent version.

Developed by:

- a working group of multidisciplinary renal care providers from across BC

Reviewed by:

- BCPRA Hemodialysis Committee

Approved by:

- BCPRA Hemodialysis Committee

For information about the use and referencing of BCPRA provincial guidelines/resources, refer to [www.bcrenalagency.ca](http://www.bcrenalagency.ca).

Original: 2005; Revised: January 23, 2011, June 2016.