



# PROVINCIAL STANDARDS & GUIDELINES



## BCR Acuity Scale & BC's Hemodialysis Units

Last updated February 2022  
Developed by the BCR Hemodialysis Committee

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## IMPORTANT INFORMATION

This BC Renal 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.bcrenal.ca](http://www.bcrenal.ca) for the most recent version.

**For information about the use and referencing of BC Renal provincial guidelines/resources, refer to <http://www.bcrenal.ca/health-info>.**



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## 1.0 Scope of Guideline

This guideline provides expectations about the utilization of the BCR Acuity Scale for adults in BC's Hemodialysis Units (in-centre and community dialysis units).

## 2.0 Background

Over a decade ago, BCR, in collaboration with HA partners, developed a tool to assess the stability of patients on hemodialysis. Results of assessments are entered into PROMIS.

In 2014, BCR (via the Renal Educators Group) reviewed the tool and proposed revisions. Directors/managers and others in the renal community were invited to provide feedback. In 2016 the Acuity Scale was tested and validated on a random sample of patients dialyzing in 3 in-centre and 6 community dialysis units across BC. The new scale (Acuity Scale, v2.0) was implemented in April 2017 and is the focus of this guideline.

The primary purpose of the BCR Acuity Scale is to assess the stability of patients during a dialysis run. Secondly the scale provides information (albeit limited) about overall care requirements.

At a system level, the Acuity Scale provides a demonstrable, reliable, repeated measure of HD unit patient profiles of stability while on HD across HD units. It is a:

- Tool for understanding and tracking changes in the HD population across units and over time. This supports BCR's accountability to the Ministry of Health in the utilization of HD resources.

- Tool for informing funding allocations within the BCR facility-based funding model (i.e., distribution of resources across HD units). The Scale helps us understand the ratio of patients in dialysis units according to level of stability while on dialysis. This ratio is then used to develop an average or blended funding model rate for (1) in-centre units and (2) community units. By measuring changes to stability over time, we can continue to ensure adequate funding for our patient population.

At an HA/HD facility level, the Acuity Scale helps to:

- Identify in-centre patients who may be candidates for community dialysis units.
- Measure changes in the profile of patients on a unit over time.
- Analyze patient care processes, workload and resource requirements relative to the profile of patients on a unit.
- Stratify patients with low vs high care needs (may be useful in assigning staff). The BCR Acuity Scale assesses 6 areas:

1. Hemodynamics
2. Independent function
3. Access
4. Treatment
5. Nursing interventions
6. Psychosocial emotional factors

See [Appendix 1](#) for a copy of the BCR Acuity Scale (v2.0) and [Appendix 2](#) for descriptions of each of the indicators.

### 3.0 Recommendations

#### Recommendation #1:

**Every 6 months, each HD unit will utilize the BCR Acuity Scale to measure the stability of adult patients on HD.**

**The goal for assessment is as follows:**

Chronic patients: >90% of patients dialyzing during the month.

Includes:

- Patients on in-centre and community dialysis units
- Patients dialyzing on an independent HD unit (Northern Independent Unit and nocturnal patients dialyzing at Vancouver General)
- Patients on home hemodialysis (HHD) dialyzing for a temporary period of time on an in-centre or community dialysis unit (e.g., patients who receive a hemodialysis treatment while visiting the HD unit for a transonic assessment, patients who have water supply or quality issues at home and temporarily receive treatments in a hemodialysis unit/facility, patients with problematic vascular accesses.)

Excludes: Patients training for home hemodialysis (HHD).

Acute patients: 100% of patients dialyzing on a given day of the month where dialysis is provided by a renal nurse (dialysis may be provided in-centre or “off ward”).

**Recommendation #2: Coordinate the timing of the acuity scale measurements across all HD units.**

**Suggested months: April and October.**

Suggested process:

- At the beginning of the month, the manager/leader will identify which day of the month they will utilize the Acuity Scale for acute patients.
- Manager/leader will schedule RNs to complete the BCR Acuity Scale (v2.0).
- RN will assess each patient using the BCR Acuity Scale (v2.0).
- RN or Unit Coordinator will enter the results of the acuity assessment into PROMIS.

See PPT: BCR Acuity Scale (v2.0) Entry of Assessment Results into PROMIS at [www.bcrenal.ca](http://www.bcrenal.ca).

### 4.0 References

### 5.0 Sponsors

Reviewed by:

- BCR Renal Educators Group (REG): 2017, 2018, Oct 2021 (editorial changes only)
- BCR Renal Administrators Committee: 2017, 2018

Approved by:

- BCR Hemodialysis Committee: 2017, 2018

### 6.0 Appendices

Appendix 1: BCR Acuity Scale (v2.0)

Appendix 2: Descriptions of Indicators on BCR Acuity Tool (v2.0)

## Appendix 1: BCR Acuity Scale (v2.0)



Assessor: \_\_\_\_\_

Assessment Date: \_\_\_\_\_

See attached acuity scale parameters for definitions and descriptions.

### PATIENT INFORMATION / LABEL

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

PHN: \_\_\_\_\_

HEMODYNAMICS			
1. Hypotension	2. Hypertension	3. Cardiac Status	4. Fluid Management
None	None	None	None
Basic	Basic	Basic	Basic
Moderate	Moderate	Moderate	Moderate
Advanced	Advanced	Advanced	Advanced
Complex	Complex	Complex	Complex
Very complex	Very complex	Very complex	Very complex

INDEPENDENT FUNCTION
None
Basic
Moderate
Advanced
Complex
Very complex

ACCESS		
1. Current Access Type Used in Dialysis	2. Access Complications	3. Percent Reduction Urea
AVF	None	None: 70% and greater
AVG	Basic	Basic: 65-69%
Permanent catheter	Moderate	Moderate: 60-64%
Temporary catheter	Advanced	Advanced: 55-59%
Dual access: one in use, one assessed	Complex	Complex: 50-54%
Dual access: two types used simultaneously	Very complex	Very complex: <50% or pt dialyzing off-unit

TREATMENT		
1. Medications	2. Respiratory Therapy	3. Specialized Treatments
None or ESA only	None	None
Basic	Basic	Basic
Moderate	Moderate	Moderate
Advanced	Advanced	Advanced
Complex	Complex	Complex
Very complex	Very complex	Very complex

NURSING INTERVENTIONS		
1. Patient Monitoring	2. Infection Control	3. Individualized Needs
None: Q hourly	None	None
Basic: Q 30 mins	Basic	Basic
Moderate: Q 20 mins	Moderate	Moderate
Advanced: Q 15 mins	Advanced	Advanced
Complex: Q5-15 mins	Complex	Complex
Very complex	Very complex	Very complex

PSYCHOSOCIAL EMOTIONAL FACTORS
None
Basic
Moderate
Advanced
Complex
Very complex

## Appendix 2: Descriptions of Indicators on BCR Acuity Tool (v2.0)

### HEMODYNAMICS

LEVEL	DESCRIPTION
<b>Hypotension</b>	
None	No hypotension noted during treatment.
Basic	Blood pressure managed with any or all of the following: sodium profiling, fluid profiling, and dialysate temperature.
Moderate	Patient has hypotensive symptoms that require use of routine interventions. Patient able to complete treatment.
Advanced	Difficulty completing treatment due to hypotension. Requires medical review.
Complex	Unable to complete treatment due to hypotension. Requires urgent medical review.
Very complex	Patient requires continuous monitoring at a critical care level.
<b>Hypertension</b>	
None	No hypertension noted during treatment.
Basic	Blood pressure managed with any or all of the following: sodium profiling, fluid profiling, and dialysate temperature.
Moderate	Patient has hypertensive symptoms that require use of routine interventions. Patient able to complete treatment.
Advanced	Difficulty completing treatment due to hypertension. Requires medical review.
Complex	Unable to complete treatment due to hypertension. Requires urgent medical review.
Very complex	Patient requires continuous monitoring at a critical care level.
<b>Cardiac Status*</b>	
None	No cardiac history.
Basic	Has cardiac history but asymptomatic during dialysis treatment and managed with uncomplicated, medically-prescribed treatments (e.g. nitroglycerin patch, warfarin, home oxygen, pacemaker, HD prescription limits).
Moderate	Symptomatic during dialysis but responded to PRN nitroglycerin, oxygen therapy, and/or fluid therapy. Physician is aware.
Advanced	Difficulty completing HD treatment due to cardiac related symptoms. Responds to nitroglycerin, oxygen therapy, and/or fluid therapy.
Complex	<p><u>One</u> of the following is present during dialysis treatment:</p> <ul style="list-style-type: none"> <li>• Unable to complete run due to cardiac related symptoms. Requires frequent monitoring of vital signs.</li> <li>• New onset of a cardiac condition such as chest pain or arrhythmia during treatment: requires urgent medical workup and review.</li> <li>• Acute decompensated heart failure (e.g. secondary to infection, failure to take medications as ordered, fluid overload during treatment. Signs and symptoms may include symptomatic hypotension, and pulmonary edema.</li> <li>• Pericarditis: requires urgent medical workup and review.</li> <li>• Pericardial effusion: requires urgent medical workup and review.</li> <li>• Ventricular assist device (VAD)</li> </ul>
Very complex	Unable to dialyze without continuous monitoring at a critical care level.
<b>Fluid Management</b>	
None	Attains goal weight.
Basic	Minor goal weight adjustments by nursing during treatment, UF/sodium profiling.
Moderate	Goal weight adjustment made by nephrologist during treatment, concentrated attention to fluid management, dietary counseling to address fluid issues.
Advanced	Require extended run or rehydration during treatment.
Complex	Difficulty achieving goal weight during treatment. Requires frequent monitoring, regular interventions such as extended treatment, ultrafiltration, sequential dialysis, rehydration.
Very complex	Is being monitored at a critical care level.

## Appendix 2: Descriptions of Indicators on BCR Acuity Tool (v2.0)

### INDEPENDENT FUNCTION

LEVEL	DESCRIPTION
None	Does not require any assistance.
Basic	Mobilizes use walking aide or prosthesis without assistance. Good manual dexterity, strength, vision and hearing.
Moderate	Standby assistance to weight bear, transfer or reposition. Has decreased manual dexterity and/or strength. Communication challenges requiring unique interventions.
Advanced	One person assist to transfer or reposition. Significantly reduced manual dexterity or strength.
Complex	Two or more persons or mechanical lift to transfer or reposition.
Very complex	Patient requiring full care due to complete dependency.

### ACCESS

LEVEL	DESCRIPTION
<b>Current Access Type Used in Dialysis</b>	
None	AVF: Arteriovenous fistula as primary access.
Basic	AVG: Arteriovenous graft as primary access.
Moderate	TCC: Tunneled-Cuffed Catheter as primary access, intended for long-term use.
Advanced	Temporary Hemodialysis Catheter intended for short-term use.
Complex	Dual Access: Two types of accesses, where only one is in use and one is being assessed.
Very complex	Dual Access: Two types of access used simultaneously. TCC or Temporary Hemodialysis catheter and AVF or AVG.
<b>Access Complications</b>	
None	No complications or self cannulates.
Basic	Minor interventions required, e.g. repositioning.
Moderate	One of the following challenges during treatment: difficulty needling, access related pain, vessel spasm, poor flow, reversal of lines, TPA administration, redness at the access site, saline flushes.
Advanced	Concluded treatment but with difficulty due to needling, access related pain, positional, vessel spasm, poor flow, intradialytic vigorous flushing of catheter lumens with saline, reversal of lines, TPA administration, redness at the access site, increasing venous pressures, prolonged bleeding intra and/or post at access site.
Complex	Treatment initiated but unable to complete due to vascular access complications.
Very complex	Unable to dialyze due to non-functioning access.
<b>Percent Reduction Urea</b>	
None	70% and greater
Basic	65 - 69%
Moderate	60 - 64%
Advanced	55 - 59%
Complex	50 - 54%
Very complex	<50% or patient dialyzing off-unit

## Appendix 2: Descriptions of Indicators on BCR Acuity Tool (v2.0)

### TREATMENT

LEVEL	DESCRIPTION
<b>Medications</b>	
None or ESA only	None or Erythropoiesis Stimulating Agent (ESA) Only
Basic	Either or both of (may be self-administered): (1) Patient requires oral medications for comfort on treatment (2) Patient requires iron and ESA therapy to maintain Hgb
Moderate	Patient requires IV antibiotics or IV medications for comfort on the treatment. Requires narcotics for pain control.
Advanced	Any of: (1) Patient requires IDPN (intradialytic parenteral nutrition) (2) Patient requires blood products (3) Patient requires in-patient prescribed infusions not related to dialysis.
Complex	New condition/onset of an event requiring specialized medications without critical care intervention.
Very complex	Medications requiring monitoring at a critical care level.
<b>Respiratory Therapy</b>	
None	No respiratory support necessary.
Basic	Minor or self-administered therapy e.g. home oxygen, nebulizers and respiratory inhalers.
Moderate	Requires oxygen supplementation, nebulizer support during treatment. Requires setting up oxygen supplies during treatments.
Advanced	Use of oxygen or nebulizer therapy that also indicates a need for a medical review or respiratory investigation during treatment.  Acute Respiratory Distress: episodes of acute respiratory distress that resolves with nursing intervention using the site-specific hypoxemia protocols.
Complex	Sudden onset of acute shortness of breath unresolved with intervention. Suctioning or airway management.
Very complex	Critical care level airway support.
<b>Specialized Treatments</b>	
None	None
Basic	Stable patient but unable to self-administer treatment; uncomplicated nursing procedure, e.g. uncomplicated suture or staple removal; more frequent bloodwork :Hgb, INR, K+
Moderate	Stable patient but unable to self-administer treatment; requires more involved nursing procedure, e.g. insertion and maintenance of peripheral IV, maintenance of urinary catheter, flushing of PD tube, complicated suture/staple removal, ostomy care.
Advanced	Patient unstable/potentially unstable requiring treatments that need continuous monitoring e.g. NG tube feed, continuous NG to suction, management of a supra-pubic catheter, continuous bladder irrigation.
Complex	Patient unstable or immediately post-op from major surgery requiring, for example, plasma therapeutic exchange only or combination with hemodialysis, chest tube management, epidural, CVP, PCA pump.
Very complex	Patient requiring critical care setting.



## Appendix 2: Descriptions of Indicators on BCR Acuity Tool (v2.0)

### NURSING INTERVENTIONS

LEVEL	DESCRIPTION	
<b>Patient Monitoring</b>		
None	Q Hourly Patient's condition stable requiring minimal vital signs and monitoring as per unit policy. May be self-monitored.	
Basic	Q 30 minutes	
Moderate	Q 20 minutes	
Advanced	Q 15 minutes	
Complex	Q5 - 15 minutes	
Very complex	Requires continuous monitoring at a critical care level	
<b>Infection Control</b>		
None	Patient self-care dialysis.	
Basic	Routine precautions (i.e., PPEs worn when direct care is being provided, based on risk assessment).	
Moderate	Contact precautions (i.e., PPE's worn on each contact with patient or environment).	
Advanced	Contact and droplet precautions, isolation requirements.	
Complex	Airborne precautions.	
Very complex	All of the above and/or requiring negative pressure room or critical care level.	
<b>Individualized Needs</b>		
None	None	
Basic	Lab studies review Comfort measures Blood glucose monitoring	
Moderate	Hematocrit monitoring Medication review Diabetic teaching	O2 saturation monitoring Incontinence care Dietary support
Advanced	Psychosocial/emotional support Foot assessment Access flow measurement	Booking medical appointments Reviewing in-patient chart and coordinating MARs Changing machine set up
Complex	Organizing travel arrangements Medication reconciliation Coordination of diagnostic studies (drawing bloodwork, ECG, x-ray, ultra-sounds)	
Very complex	Wound assessment and care	

### PSYCHOSOCIAL EMOTIONAL FACTORS

LEVEL	DESCRIPTION
None	During treatment presents as emotionally well-adjusted. Accepting of disease process and treatment options. Independently managing care and treatment.
Basic	During treatment presents as emotionally well-adjusted. Accepting of disease process and treatment options. Managing disease process and treatment with assistance. May have mild anxiety or short-term depressive episodes that are self-managed.
Moderate	During treatment presents as anxious, depressed, non-compliant or aggressive behaviour interfering with ability to manage disease process and treatment. Requires professional intervention to manage.
Advanced	During treatment presents as having high level of anxiety, depression, non-compliance or aggressive behaviour placing limitations on ability to cope with disease and follow treatment requirements.
Complex	During treatment presents as confused, dementia, substance abuse, serious psychosis, harmful to self or others. Severely limited ability to understand disease process and treatment.
Very complex	Severe dementia/psychosis. Unable to understand disease process and treatment. Unable to dialyze without medical and/or physical restraint.