

The Problem:

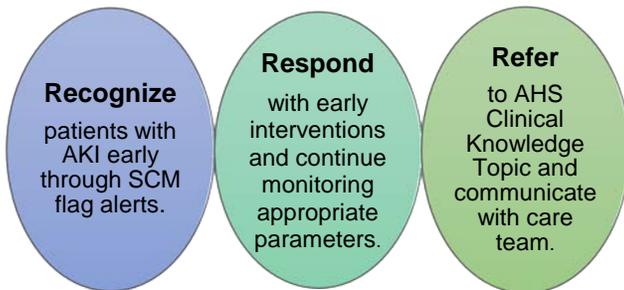
Acute kidney injury (AKI) is a common complication after surgery, as evidence suggests:

- 10% - 30% incidence in Alberta
- More than 3-fold increase in dialysis for AKI after major surgery in the last 20 years
- Increased length of hospital stay and costs of care

Perioperative AKI is often reversible with early recognition and management.

What is SUPPORT AKI?

- A clinical decision support initiative
- A process that will be implemented to:



Who is the target population?

Hospitalized patients:

- 18 years or older
- Develop AKI on general/vascular surgery units
- Identified by an SCM alert

Excluded patients:

- Hospitalized on non-surgical units
- Already receiving dialysis

As a member of the care team, what is my role?



Continue to monitor serum creatinine and record ins and outs.



If the AKI alert (red flag) has not been acknowledged, communicate this to the care team.



In speaking with the team about an AKI patient, use the AKI clinical summary for all the relevant information.



Provide feedback on the tools and processes for AKI.

Who is involved?

Calgary Steering Committee: Dr. Elijah Dixon, Dr. Anthony MacLean, Dr. Indraneel Datta, Dr. Gregory Samis, Dr. Jennifer Landry, Dr. Rohan Lall, Sonia Ficaccio-Scarcelli, Sharon Falk

Calgary Sites: Foothills Medical Centre Unit 102 and Unit 44; Peter Lougheed Centre Unit 29/44 and Unit 58/59

Study inquiries or feedback about the tools and processes?

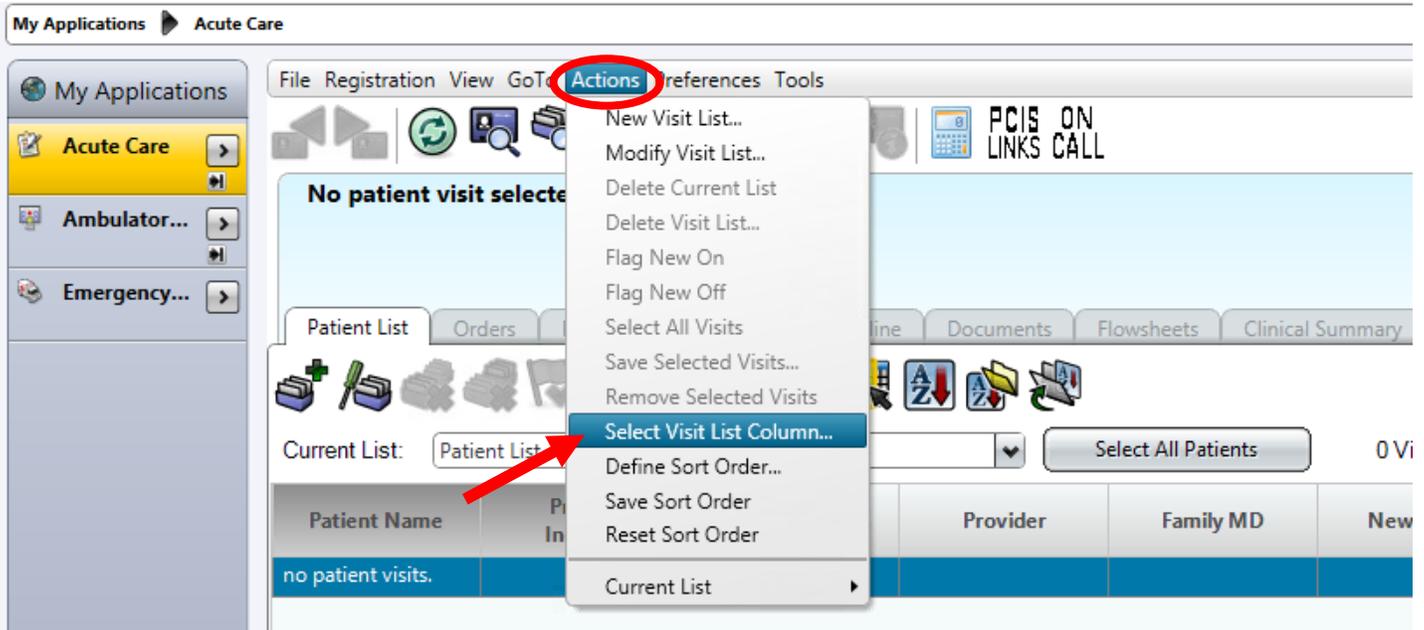
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QUICK REFERENCE SHEET

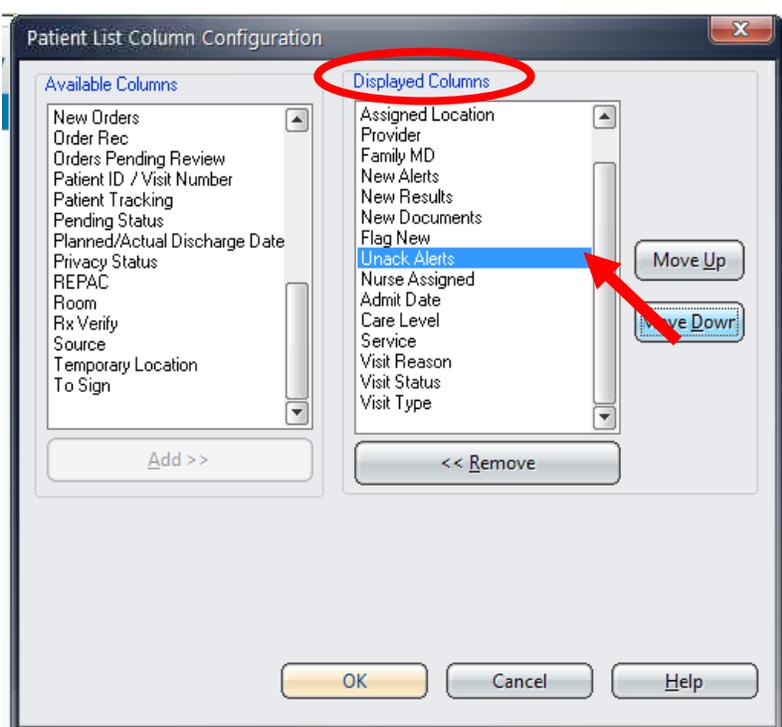
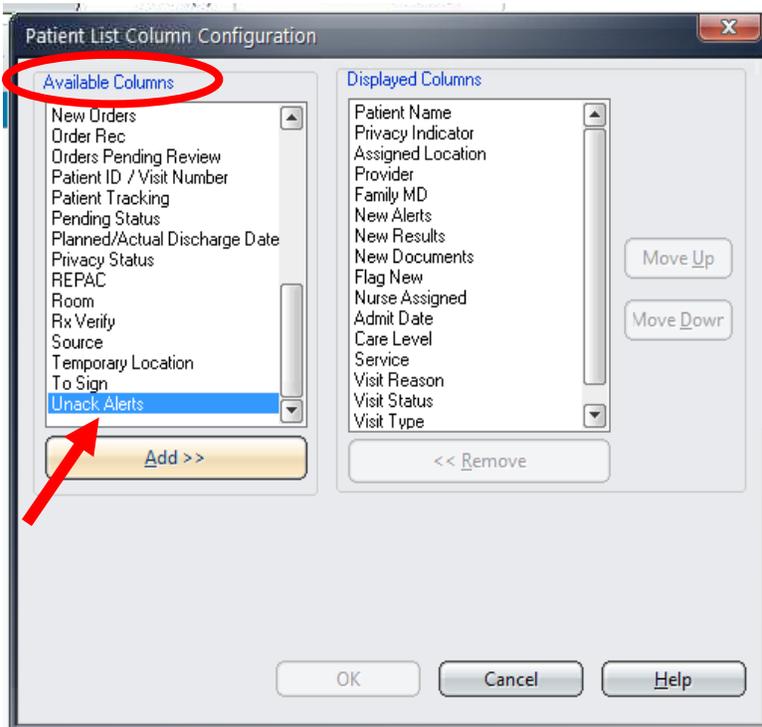
RECOGNIZE

1. Add Unack Alerts column on SCM:

- a. Log into SCM. Click **Actions**, followed by **Select Visit List Column**.



- b. A pop-up window will appear. Scroll down in the **Available Columns** list to find **Unack Alerts**. Click **Add**, then **Unack Alerts** should appear on the **Displayed Columns** list. You have added the column.



2. Identify Unack Alerts on Sunrise Clinical Manager

Current List: FMC Acute Consults Select All Patients 16 Visit(s) Save Selected Patients...

Patient Name	Privacy Indicator	Assigned Location	Age	Provider	Flag New	New Alerts	Unack Alerts	New Orders	New Res...	New Docu...	To V...	To Sign	ARO/M ...
	Normal											✓	
	Normal											✓	
	Normal											✓	
	Normal											✓	Y
	Normal											✓	
	Normal											✓	
	Normal						1					✓	
	Normal						1					✓	
	Normal											✓	

3. Double-click red flag to view AKI Alert - determine AKI stage and active medications that can lead to progression.

Alert Summary

Ac...	Vi...	D...	Alert	Created	Priority	Type	Comment	Scope
	✓		STAGE 1 AKI Alert	2016-May-10 09:53	HIGH	WARNING		Chart

Alert: **STAGE 1 AKI Alert**

Message: This patient has met criteria for STAGE 1 Acute Kidney Injury (= 26 mmol/L increase in serum creatinine within 48 hours or 50% increase within 7 days) based upon the serum creatinine value drawn 2016-May-09 09:40:00

[Expand](#)

[References](#)

This patient is current receiving the following medications which may cause or are usually avoided in Acute Kidney Injury:

celecoxib cap, furosemide infusion, ibuprofen tab, indomethacin cap

Status: Unacknowledged By: Acknowledged When:

4. Monitor Adverse Drug Warning Alerts that appear when a nephrotoxic medication is ordered for an AKI patient.

Alert Summary

Ac...	Vi...	D...	Alert	Created	Priority	Type	Comment	Scope
✓	✓		AKI Alert	2016-May-13 13:10	HIGH	WARNING	test	Chart

Alert: **AKI Alert**

Message: **ADVERSE DRUG EVENTS WARNING FOR ACUTE KIDNEY INJURY**

[Expand](#)

[References](#)

This patient has developed STAGE 1 Acute Kidney Injury within the last 48 hours 2016-May-13 13:07:31

This medication may cause worsening kidney function and/or is usually avoided in Acute Kidney Injury: celecoxib cap, metoLAZONE liquid

5. View AKI Clinical Summary for details on volume status, and active medications that may affect kidney function or require due adjustment in AKI.

AKI Stage

AKI Stage	Date Onset	Creatinine Level
STAGE 3 AKI Alert	2017-Dec-19 02:31	379

7 Day Creatinine Urea

Date	Creatinine LEVEL	Urea
Dec-17-2017	258.0	17.2
Dec-18-2017	354.0	21.5
Dec-19-2017	364.8	23.8
Dec-20-2017	333.0	23.2
Dec-21-2017	299.0	
Dec-22-2017	258.0	

AKI Specific Medications

Medication	Order Date	Status	Last Given
MAY CAUSE AKI	-----	-----	-----
furosemide inj (Ordered as: LASIX inj) 40 mg IVPB /...	2017-Dec-21 10:42	Active	2017-Dec-22 09:52
furosemide inj 80 mg IV Q8H	2017-Dec-17 13:56	Discontinued	2017-Dec-18 06:11
CLEARED BY KIDNEY	-----	-----	-----
dalteparin inj 5,000 unit(s) SUBCUTANEOUSLY q24h, --...	2017-Dec-16 22:13	Discontinued	
metoclopramide inj 10 mg IVPB q4h PRN nausea	2017-Dec-16 22:13	Active	
piperacillin / tazobactam inj (Each 2.25 g dose contains...	2017-Dec-16 15:45	Active	2017-Dec-22 12:23
amoxicillin / clavulanate 500F tab (Each tablet...	2017-Dec-13 13:07	Discontinued	2017-Dec-16 03:52
sulfamethoxazole / trimethoprim DS tab (Each tab...	2017-Dec-08 14:39	Active	2017-Dec-22 09:53

IVs and Drips

IV and Components	Rate	Units
+ IV Solution (mL)		

RESPOND

6. Monitor the following for patients with AKI:

- Serum creatinine and electrolytes (sodium, potassium, bicarbonate)
- Fluid inputs and outputs (i.e. urine output)
- Vital signs and oxygen saturation particularly before and after intravenous fluid boluses
- Orders for intravenous fluids, diuretics, and blood pressure medications

Order	Who	When	Frequency	Additional Information
Monitoring - 2 item(s)				
<input checked="" type="checkbox"/> Vital Signs			q1h	Perform directly prior to bolus infusion...
<input checked="" type="checkbox"/> Monitor Output			q1h	Perform directly prior to bolus infusion...
Safety Parameters - 2 item(s)				
<input checked="" type="checkbox"/> Clinical Communication				Safety Parameters: Stop bolus infusion if...
<input checked="" type="checkbox"/> Notify	Attending Physician	Immediately - when Volume Administration Safety Concerns are...		
Efficacy Targets - 2 item(s)				
<input type="checkbox"/> Clinical Communication				Efficacy Targets: Stop bolus infusion if...
<input type="checkbox"/> Notify	Attending Physician	Immediately - when Volume Administration Efficacy Targets are...		
Notify - 1 item(s)				
<input type="checkbox"/> Notify	Attending Physician	To re-assess patient if boluses are completed and efficacy targets...		

REFER

7. Communicate with care team and attending physician about patients with AKI. Provide details on AKI parameters that are being monitored and if fluid safety parameters or efficacy targets are reached.
8. Refer to AHS Clinical Knowledge Topic on Acute Kidney Injury for further guidance of AKI management.