The Royal Wolverhampton NHS Trust

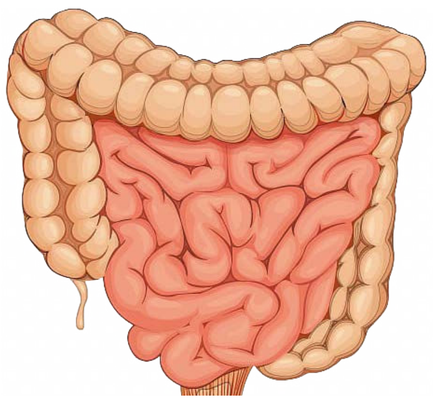
Reducing Acute Kidney Injury in Ileostomy Patients: Through Collaborative Stoma Care and Patient Education

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Risks of AKI development with Ileostomy

- Due to shortening of GI tract and loss of the colon, ileostomy patients are at high risk for impaired sodium and gastrointestinal absorption
- 25-40% of ileostomates will develop high output at some point [5 1]
- 10.3% of ileostomates will be admitted within 60 days of stoma formation with AKI [3, 6]
- 14-38% of ileostomates will need hospital admissions due to severe dehydration / AKI (Lui et al, 2021) [4,6,7]
- 13-25% of ileostomates will develop chronic kidney disease within two years of formation of a stoma [2]





Collaborative working between AKI and Colorectal CNS teams and service development

Three interventions were introduced across five NHS trusts and one community team:

Development of an **assessment tool** for colorectal / stoma nurses to triage patients for early intervention, which will reduce the risk of short and long-term kidney damage.

Development of a **patient information leaflet** for people with ileostomies to improve knowledge and understanding and therefore foster independence and promote kidney health.

Improving in-patient care for patients with HOI – extending current national guidelines to include renal-protective strategies, including post-discharge care

High output ileostomy assessment: RAG Triage

AKI telephone assessment for patients with high output ileostomies

Acute Kidney Injury (AKI) is the acute deterioration in renal function that occurs over hours or days and is associated with high morbidity and mortality rates. Having an ileostomy is a risk factor for the development of AKI due to potential dehydration if output is high (>1.2 litres in 24 hours)

This tool is a GUIDE only and does NOT replace clinical judgment.

Date:- **Time:-** **CNS:**

Patient Name		
Hospital Number		
Patient Age		
Relevant history eg: Diabetes Heart failure Chronic kidney disease Liver failure Cognitive/motor issues Enlarged prostate/pelvic masses		
Approx length of time with an ileostomy		
No. of times pouch emptied in 24 hours (full/half)		
Consistency of effluent	Watery	Sloppy
Length of time with high output		
Any recent changes to diet/drugs		
Recent chemo/immunotherapy:		
On loperamide normally? Dose:		
On codeine/octreotide normally? Dose:		
Likely cause of high output		

Causes of high output ileostomy:

Newly formed stoma

Bowel affected by disease or inflammation (eg chemo, IBD, gastroenteritis)

Short gut syndrome

Partial bowel obstruction

Non-compliancy with diet and medications eg loperamide

Consequences of high output ileostomy:

Dehydration – low BP – Poor renal perfusion – AKI

Malabsorption of medications

Under nourishment/weight loss

Electrolyte imbalance -cardiac arrythmias.

Triaging a patient with high ileostomy output

Stage 1 – Assessing risk factors for AKI

- ☐ Diabetes
- ☐ Chronic Kidney Disease
- ☐ Known heart failure
- ☐ Known liver failure
- ☐ 65 years or older
- ☐ Cognitive/motor issues
- ☐ Known enlarged prostate
- ☐ Current/previous pelvic cancer
- ☐ Previous AKI
- ☐ On nephro-sensitive medications

The more risk factors a patient has, the more likely they are to develop AKI. Patients with heart failure are especially vulnerable, and they should be advised to seek medical help early.

Stage 2 – Medicine Sick Day Rules

a) Advise to suspend nephro-sensitive medications **temporarily**.
b) Advise patient on **diuretics** to suspend temporarily (eg frusemide, spironolactone, epleronone, Bendroflumethiazide)
c) Advise patient on other antihypertensives to suspend **temporarily** (eg amlodipine, doxazosin, bisoprolol)
d) Advise to **restart** medications 24-48 hours after symptoms subside and the patient is eating and drinking normally again.

Nephro-sensitive medications:

ACE inhibitors (antihypertensive drug, ends in 'pril. Eg ramipril, lisinopril, enalopril

ARB (antihypertensive drug, ends in 'sartan. Eg, losartan, candesartan

NSAIDS (anti-inflammatory. Eg. Ibuprofen, diclofenac, naproxen, mefanamic acid)

Metformin (diabetic drug)

SGL2Ti -used in heart failure, CKD, diabetes, ends in 'flozin. Eg, empagloflozin, dapagloflozin

Stage 3 – Assess symptoms according to RAG chart (circle)

	GREEN	AMBER	RED
General wellness	Well	Mildly unwell	Moderately/severely unwell
Diet and fluid intake	Normal	Mildly reduced	Reduced
Urine output	Normal	Mildly reduced	Moderately/severely reduced
Thirsty	No	Mild	Moderate/severe
Dry mouth/skin	No	Mild	Moderate/severe
Abdominal pain/cramping	No	Mild	Moderate/severe
Dizziness/BP drop on standing	No	No	Yes
Muscle cramps/spasms/weakness	No	No	Yes
Vomiting/nausea	No	No	Yes
Drowsiness or confusion	No	No	Yes
New fluid around ankles	No	No	Yes
New breathlessness	No	No	Yes
Palpitations	No	No	Yes

	Actions	Review
Green	Low fibre diet Titrate loperamide +/- Add codeine Oral rehydration eg St Marks/ Dioralyte Suspend drugs as per Stage 2	Follow-up call within 24-48 hours and re-assess. Advise to call back/attend emergency portal if patient deteriorates.
Amber	As per Green actions **PLUS** bloods within 24 hours (U&Es, FBC, CRP, Bone profile, Phosphate, Magnesium. Suspend drugs as per Stage 2 **CNS** – Request Bloods and send pt to C41 **AKI Team** - Emailed/Bleep 1815/1812 Or call Ext 81738/81783 to chase results **SDEC** - If bloods not back SNP will chase bloods and action out of hours 4-8pm. If bloods are not back to divert back to **AKI** 08.00 the following weekday. SDEC will chase bloods over weekend/bank holidays until next working weekday am. Office numbers 82701, 82702 and 82703 Reception 81940	Review bloods once back. Discuss with AKI CNS team (Bleep 1812/1815) or surgical registrar on call if AKI 1-3. Advise to attend emergency portal if patient deteriorates.
Red	Advise to attend Emergency Department (ED) Suspend drugs as per Stage 2	Likely to be admitted so advise to bring stoma equipment, medications, clothes, toiletries etc.

Outcome of assessment:

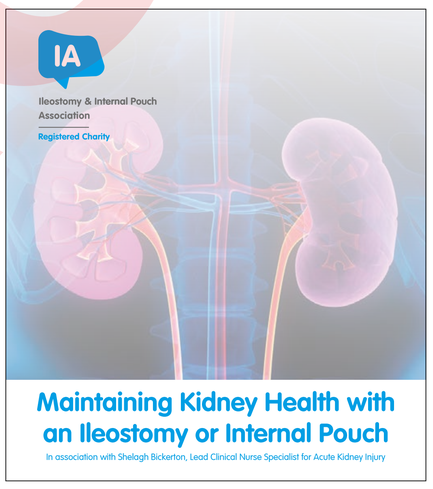
Red	Amber	Green
24-48 HR Assessment - FOLLOW UP CALL		
Date and Time	**CNS**	**ACTION**

KDIGO Classification of AKI:

	Creatinine level
Stage 1 (mild AKI)	1.5-1.9 times base level
Stage 2 (moderate AKI)	2-2.9 times base level
Stage 3 (severe AKI)	>3 times base level/Creatinine>354

To determine base creatinine, look at creatinine level 3 months prior to onset of symptoms. The laboratory will indicate if the patient has an AKI 1-3.

Patient Education



Patient empowerment

Signs and symptoms of Stoma High Output

- High output is when you experience an increased output from your stoma which can be watery in consistency. It is important to manage and treat any high output from your stoma at the earliest opportunity as this can lead to dehydration, leaking appliances and potentially sore skin.
  - Increased emptying of pouch (> 6 times a day)
  - Stools are watery in consistency
  - Signs of dehydration such as concentrated urine, dry mouth, thirst, dizziness
  - Muscle cramps or headaches
- Please contact the Colorectal Nurses if you experience ANY of the above symptoms or any other stoma concerns on 01902 694084

Outcomes

- The assessment tool improved consistency and clinical confidence. In one trust, 56 patients admitted with HOI-related AKI over 12 months accounted for 849 bed days; only 53.6% recovered baseline renal function by 90 days (Royal Wolverhampton NHS Trust, 2024). The results highlight the long-term impact of HOI and the need for prevention. Own trust data has shown these initiatives have shown the following:
  - Reduction in incidence of AKI by 16.1%
  - Length of stay reduced by 2.65%
  - Re-admission with AKI <90 days post discharge reduced by 4.6%
  - Improvement in renal recovery by 90 days by 6.4%
  - Identify AKI risks in ileostomy patients
  - Apply tools to support early intervention
  - Empower patients to manage stoma output safely

NOT APPROVED

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