

# To Pee or Not to Pee: Medication Safety for Renal Inpatients with GFR <30

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## Aim Statement

To decrease adverse medication events for renal inpatients with a GFR <30 ml/min.

## Context

The To Pee or Not to Pee project is a quality improvement project at Royal Inland Hospital, a 250 bed tertiary hospital in Interior BC. The project involved units that care for renal patients.

## Interventions

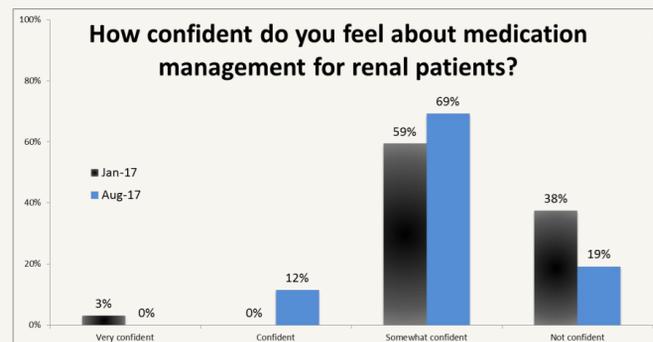
- Short, on-the-fly education sessions held on medical floors where it was convenient for unit staff, educators and charge nurses to attend.
- Lanyard cards were developed to remind staff to think critically about fluid and medications for their renal patients
- Large posters with more details about medication safety for renal patients
- Insert for Medication Administration Record (MAR) for renal patients

## Problem / Issue

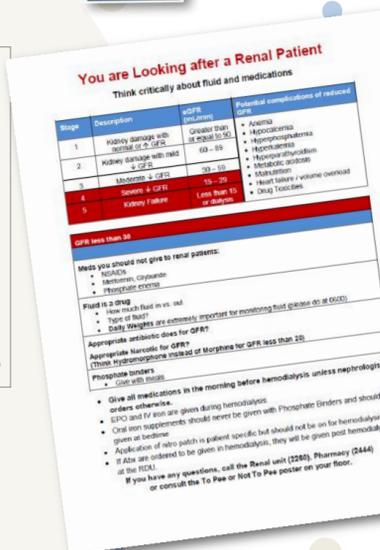
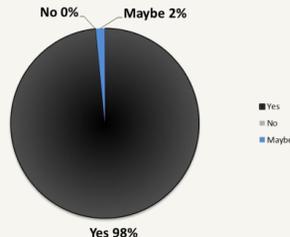
The problem was identified by renal nurses whose patients were not receiving certain medications, receiving the wrong dosages, receiving too much fluid, or receiving medications at the wrong time. Medical unit staff did not always know what the medications were for or why they might be important.

## Measurement

- Staff online survey to gauge the level of confidence staff felt about medication management for renal patients and whether or not more education would be helpful.



Would you find it helpful to have education on renal medications?



**To Pee or Not to Pee...  
What GFR are We?  
Medication Safety with Renal Inpatients**

**GFR <30**  
Think critically about fluid and medications

**Table 1. Stages of Chronic Kidney Disease**

| Stage | Description                                 | eGFR (ml/min)   | Potential complications of reduced GFR (if untreated) |
|-------|---|-----------------|---|
| 1     | Kidney damage with normal or increased eGFR | >60             | • Anemia, including functional iron deficiency        |
| 2     | Kidney damage with mild eGFR                | 60-89           | • Blood pressure increases                            |
| 3     | Moderate eGFR                               | 30-59           | • Chronic mineral bone disease                        |
| 4     | Severe eGFR                                 | 15-29           | • Disruptions in bone metabolism                      |
| 5     | Kidney failure                              | <15 or dialysis | • Hypertension  |

**Medications you Should Absolutely not Give to Renal Patients**

- Antacids containing aluminum
- Metformin
- Codeine
- Glyburide
- NSAIDs
- Morphine
- Oral sodium phosphate / Fleet enema

**Medications you should not give to Renal Patients with a GFR <30 without a Discussion**

- New anticoagulants (NOAC)
  - Dabigatran
  - Rivaroxaban
- Low molecular weight heparins
  - Enoxaparin
  - Dalteparin
  - Nadroparin
  - Tinzaparin

**Fluid is a Drug!!!**

- How much fluid is the patient getting?
- How much have they already received?
- How much are they peeing?
- What type of fluid is it?
  - IV Fluid
  - Normal Saline
  - Ringers Lactate (contains potassium)

**Commonly Prescribed Renal Medications**

**Phosphate Binders (PB) to be taken WITH MEALS** to prevent absorption of dietary phosphate

- Calcium Carbonate (TUMS) 1250-2500mg PO TID or QID with meals
- Non-calcium based PB
  - Sevelamer (Renvela) 800-2400mg PO TID with meals
  - Lanthanum (Fortrenol) 500-1000mg PO TID with meals

**Activated Vitamin D**

- Alfacalcidol (one alpha) 0.2mcg PO 3X/wk to 1.0 mcg PO Daily

**Erythropoiesis-Stimulating Agents (ESA)**

- Stimulate production of renal blood cells
- Take approx. 2 months to reach steady state
  - Darbepoetin (Aranesp) q1-2 weeks
  - Epoetin (Eprex) 2-3x/wk

Hemoglobin target with these meds is 95-115

**If you have a Question, who can you Contact?**

- Renal Nurses (ext 2260)
- Pharmacist (ext 2444)
- MRP
- Nephrologist
- PCC
- Educator

**Managing Admitted HD Patients**

- EPO and IV Iron are given during HD
- Water soluble medications such as Replivite should be given post dialysis
- Oral iron supplements should never be given with Phosphate Binders and should be given at bedtime
- Application of nitro patch is patient specific but should not be on for HD
- If Albx are ordered to be given in HD, they will be given post HD at the RDU.

**References**

Poster prepared by Lesley Thellend, RN & Dr. Joslyn Conley, Nephrologist

## Lessons Learned

- Short, stand-up education sessions work better than hour-long scheduled sessions
- Find a time of day that works for the staff
- Take-away reminders are helpful (lanyard card, poster)
- Educate nursing educators for sustainability