



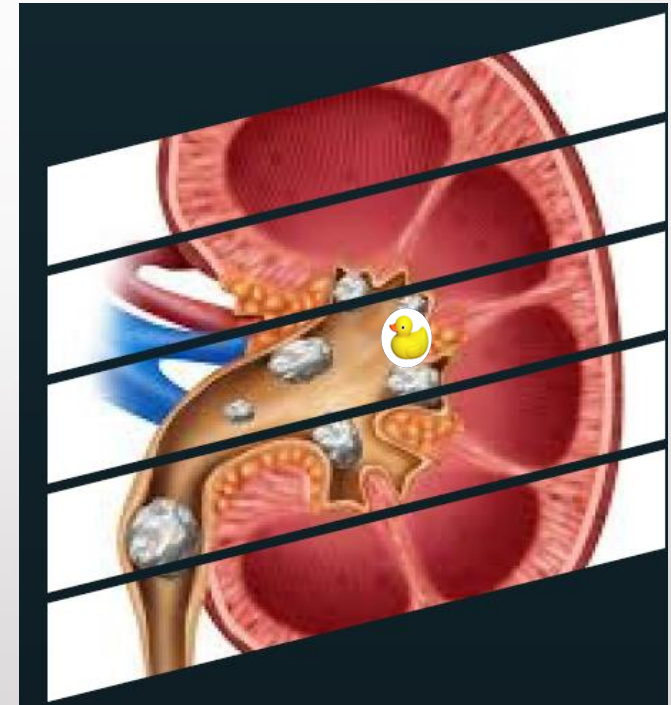
Clinicians, Consumers, Evidence
Centre for Clinical Effectiveness

Nudging behaviour change to reduce patient radiation from unnecessary renal colic CTU

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Why is a kidney stone like a duck?



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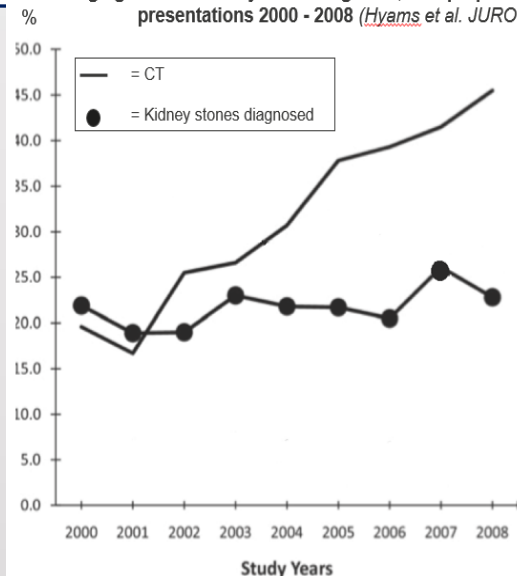
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The issue identified

Imaging use and kidney stone diagnosis, as a proportion of flank pain presentations 2000 - 2008 (Hyams et al. JURO 2011)



1 CTU is the equivalent radiation to:



- **5** millisieverts
- **100** PA Chest Xrays
- **2.5** years of background radiation
- **700** hours of flying

Despite a 10 fold increase in computed tomography urography (CTU) for suspected renal colic patients, there has been no corresponding increase in patients diagnosed with urolithiasis nor requiring urological intervention.



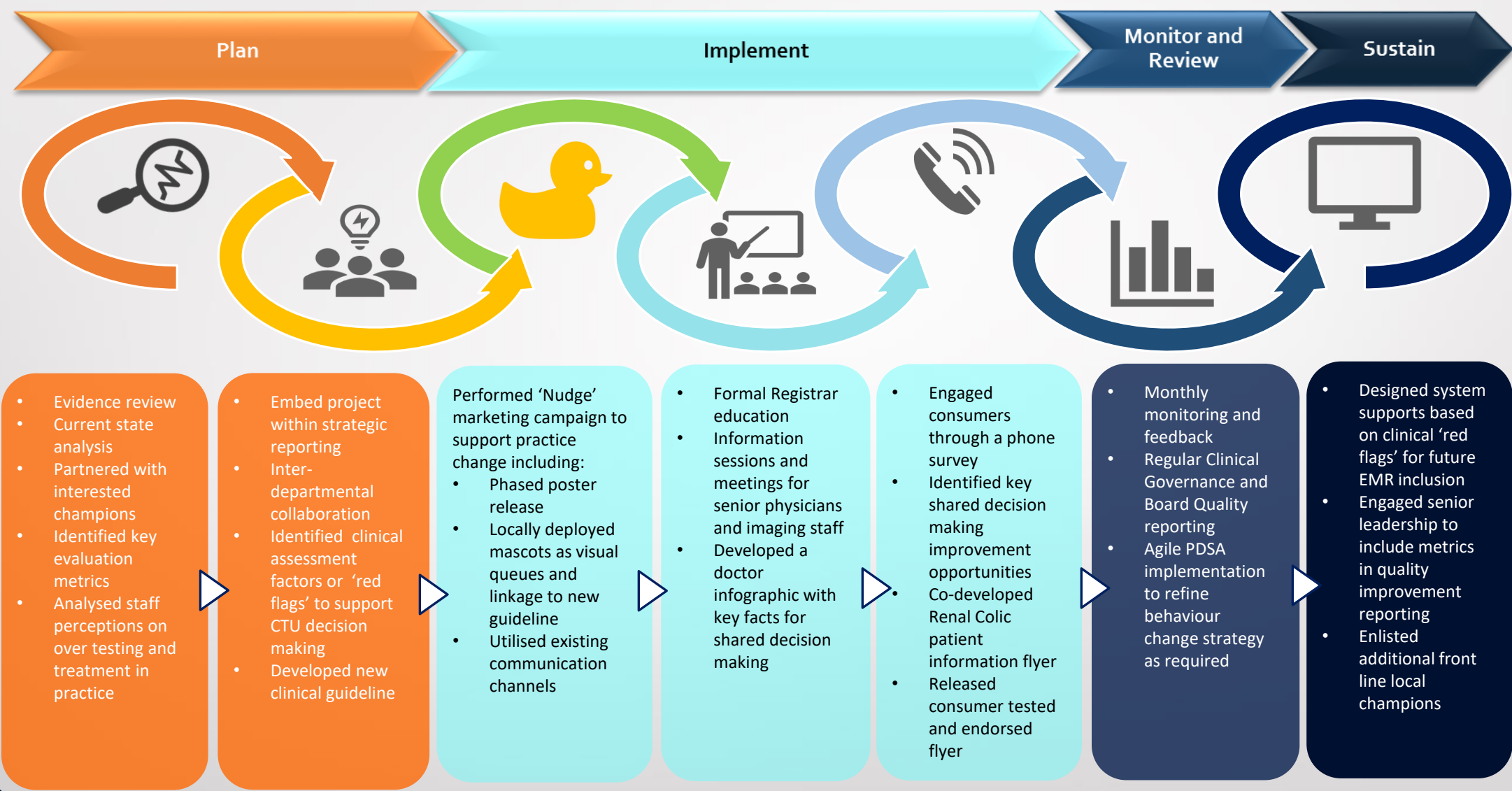
> 85%
of kidney
stones will pass
spontaneously

Only **1** in **7**
require
urological
intervention

Significant
alternate
diagnosis using
CTU occurs in
< 3%
of patients

While ionising radiation levels from CTU are considered relatively low in isolation, it is the contribution to cumulative radiation that has become a patient safety concern. Many renal colic patients are young and their future radiation exposure is not known.

The implementation



Key strategies

Visual Aides

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WORSER SEEK FURTHER CARE:

Form a CT graphy

well rolled

YES

Discharge home with follow up advice sheet – consider:
➤ delayed CTU if patient represents.

(5, 6)

Return to an Emergency Department (ED) immediately

Return to your local doctor (GP)

Do I need a scan?
In most cases, no.

The kidney stone will usually pass by itself and having a scan (a computed tomography scan or CT) does not change this.

A CT scan uses a low level of ionizing radiation. Although the radiation for each scan is low, it is best not to have too many scans in a short period of time. We do not know what future scans you may need and for your safety we do not want to expose you to unnecessary radiation if it is unlikely to change your care.

If you have ongoing pain, or the diagnosis is unclear, you may need to have a CT scan at some stage.

Your health is important to us. Please ask the doctor to explain anything you do not understand.

Home care

Once you go home it is important to:

- Avoid dehydration: drink enough water to make your urine light yellow.
- Use the medicine prescribed to treat any pain.

Routine check up

When the symptoms stop or improve, it is still recommended to make a follow up appointment with your local doctor (GP) so they can monitor your ongoing health.

For an interpreter

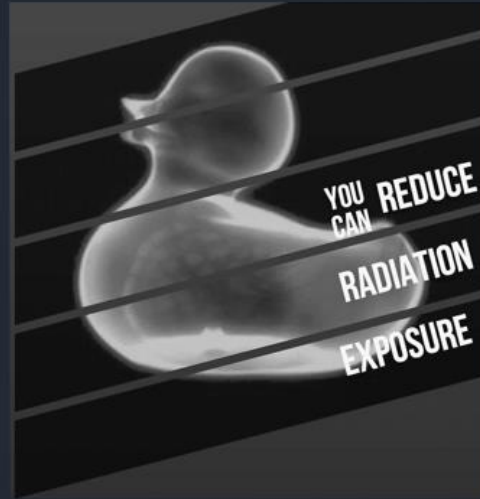
Call 131 450

Please turn over for more information

radiation

Nudging change

Is that CT KUB really necessary?



Radiation from CT KUB is equivalent to :



5 millisieverts (mSv)



700 hours of flying



2.5 years of background radiation



100 PA chest xrays



Use the QR code for more information or see PROMPT for the new Renal Colic (Adults) guideline.



**“Don’t scan the duck!
Coming soon to an ED near you”**

A ‘nudge’ approach was taken to extend the behaviour change reach.

To reduce the dependency on accessing all staff for formal education, various visual tools were used to aide message delivery.

A marketing campaign was the primary ‘nudge’. This was designed to initially pique interest and curiosity using unexpected visual aides and gradually build on the information provided with the same imagery.



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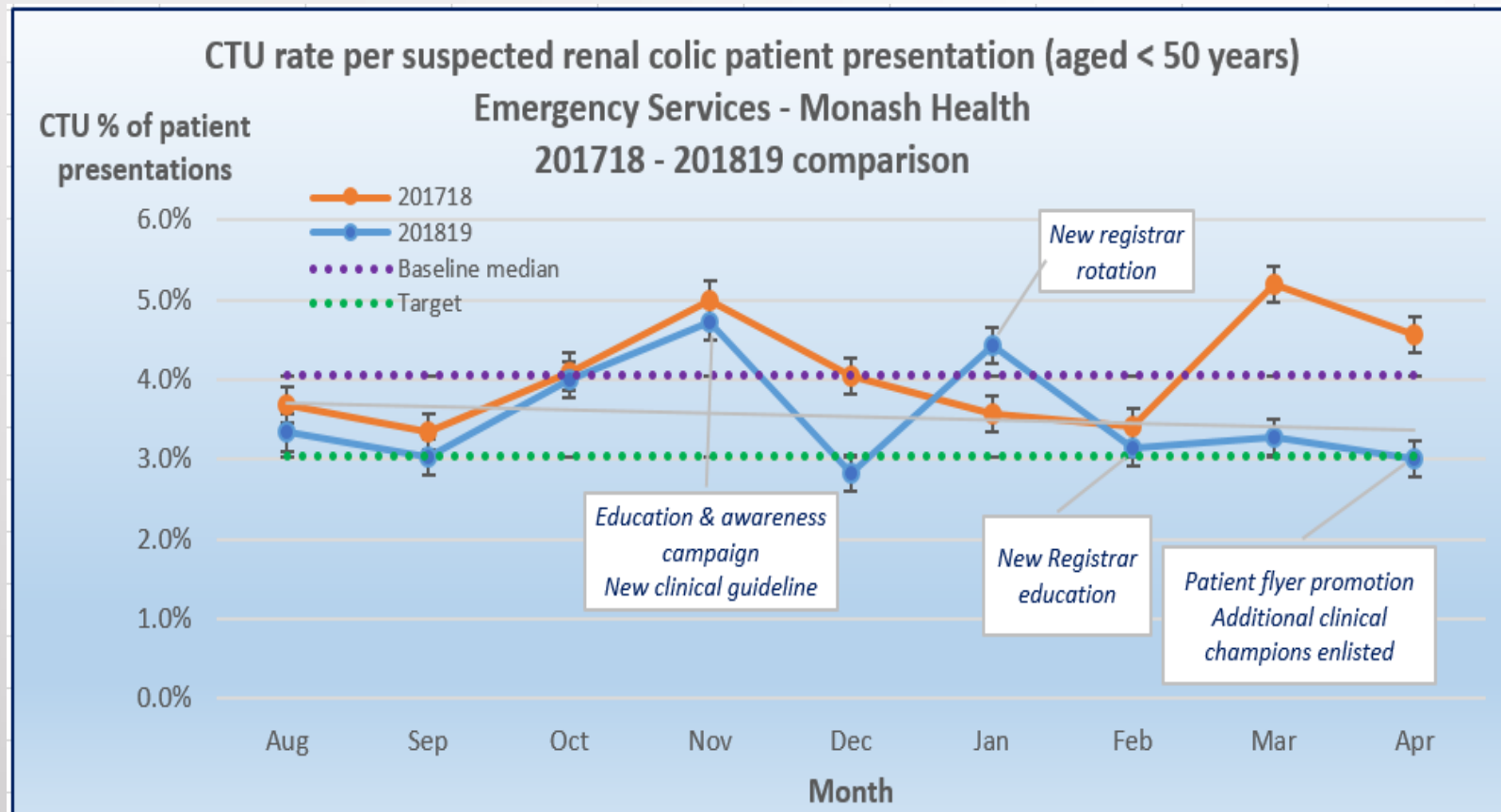
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Results



- Pre-intervention 201718 baseline; 4.0% CTU rate
- Post-intervention median; 3.1% CTU rate
- Average reduction of 13 CTU / month
Extrapolated annual benefit:
 - 780 millisieverts less unnecessary patient radiation
 - Approximately \$71,000 in apportioned direct patient costs
- No significant change noted with balancing measures – urology referral rate, or patient re-presentation within 1 month



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