

# **Creation and implementation of the D.I.R.E.C.T. Pathway (Delayed Imaging to Reduce Excessive Computed Tomography) for evaluation of patients with suspected renal colic**

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# Background

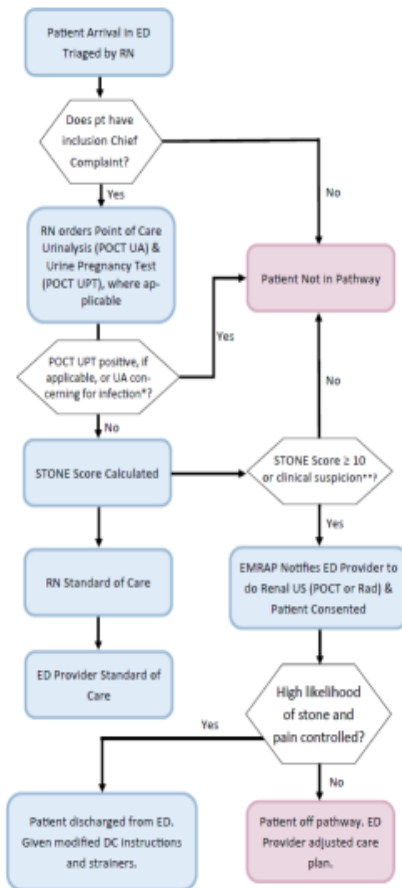
- > 70% of patients diagnosed with ureterolithiasis will receive a Computed Tomography (CT) scan
- 80% of patients with uncomplicated ureterolithiasis will pass their stone
- CT imaging is the current standard of care, but utilization of ultrasound (US) is increasing

# Purpose and Goals

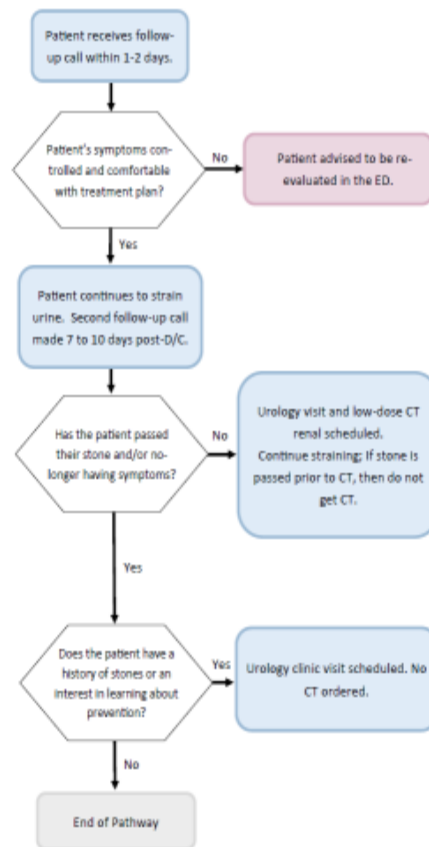
- Reduce the number of upfront CT scans obtained for suspected uncomplicated ureterolithiasis
- Reduce radiation exposure to patients
- Improve ED workflow and utilization of resources
- Standardize a pathway for acute evaluation, discharge, and urologic follow up

# Methods

## ED Screening/Enrollment



## Follow-up Protocol



# Results

Pathway began January 2019

- 41,816 patients were pre-screened
  - 4,231 met pre-screening criteria for chief complaint
  - 87 subjects enrolled
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- Median STONE Score: 10.0

# Results: Table 1

Sex	58 Male, 29 Female
Median Age	45 y.o.
Primary CC is flank pain	61 (71%)
Median Stone score	10
US only	64 (74%)
US and CT	23 (26%)
Median follow-up (days)	10 days
# (%) reached on first telephone call	48 (56%)
# (%) reached on second telephone call	33 (39%)
# (%) unable to be reached by telephone	24 (28%)
# (%) attended Follow-up appointment	16 (70%), 23 total had FU scheduled
# (%) returned to ED in 10 day follow up period	9 (10%)
# (%) of all patients who underwent surgical intervention	9 (10%)
# (%) discharged with opioids (single dose and/or starter packs)	12 (14%)

# Results: Initial ultrasound findings

	Point of Care US (40)	Radiology US (47)
+ Hydronephrosis, + Stone	5	17
+ Hydronephrosis, - Stone	21	7
- Hydronephrosis, + Stone	1	16
- Hydronephrosis, - Stone	13	7

# Results: Outcomes by imaging obtained

US Alone (64, 74%)	
Passed Stone	24 (28%)
OR from ED	1 (1%)
Refused CT	8 (9%)
Unable to Reach	28 (32%)
Withdrawn	3 (3%)
US and CT Imaging (23, 26%)	
Passed Stone after CT	10 (11%)
Required Surgical Intervention	8 (9%)
No Stone	4 (4%)
Unable to Reach	1 (1%)



# Conclusion

- The DIRECT pathway is feasible to implement
- Initial results are promising regarding the reduction of upfront CT scans obtained
- Concern remains regarding how to best follow patients who do not have a CT confirmed diagnosis after leaving the emergency department and ensuring follow up with urologist

Thank you



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