What's new for prostate health in BC?

Nathan Wong, MD MPH FRCSC

Urologist and Urologic Oncologist

Clinical Assistant Professor

fraserhealth

Better health. Best in health care.

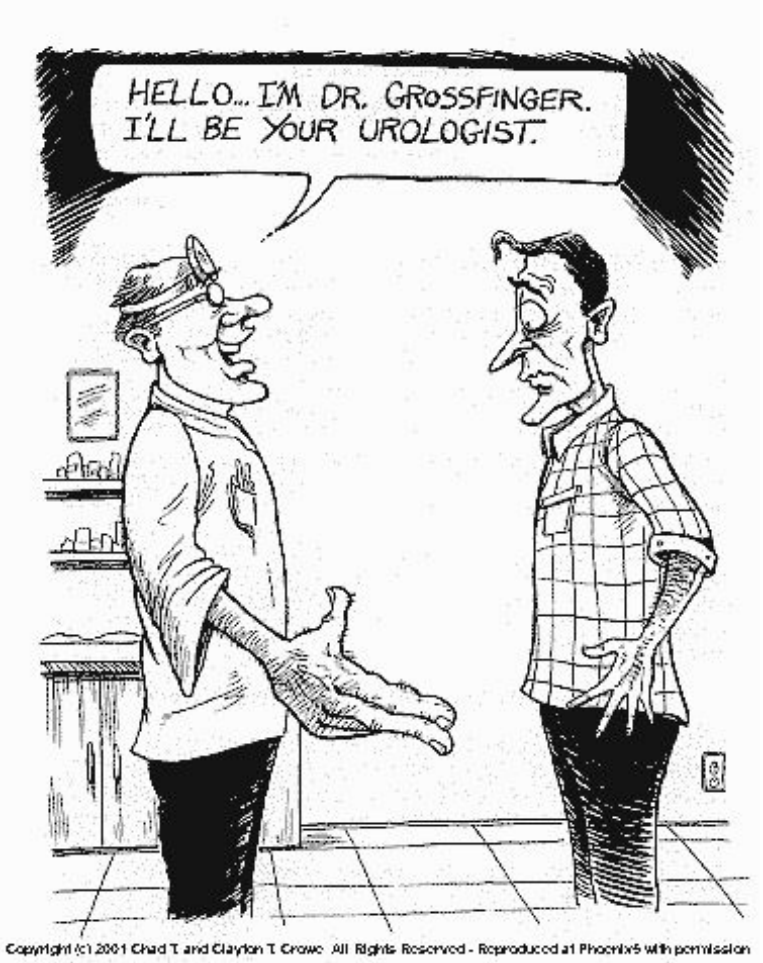
Prostate Cancer Support Group Tri-Cities

Serving the Tri-Cities, Maple Ridge & Pitt Meadows

A proud member of Prostate Cancer Foundation BC

Disclosures

- Description of relationship with financial interest:
  - Consultant, Honorarium, Educational/Research grants
- Company name(s):
  - AbbVie, Bayer, Ferring, J & J, Pfizer, Knight, TerSera, Tolmar
- I diagnose and treat patients with BPH/prostate cancer



Copyright (c) 2001 Chad T and Clayton T Crowe All Rights Reserved - Reproduced at Phoenix5 with permission

LUTS is a growing international burden



45%

of adult men have reported experiencing LUTS



930 million

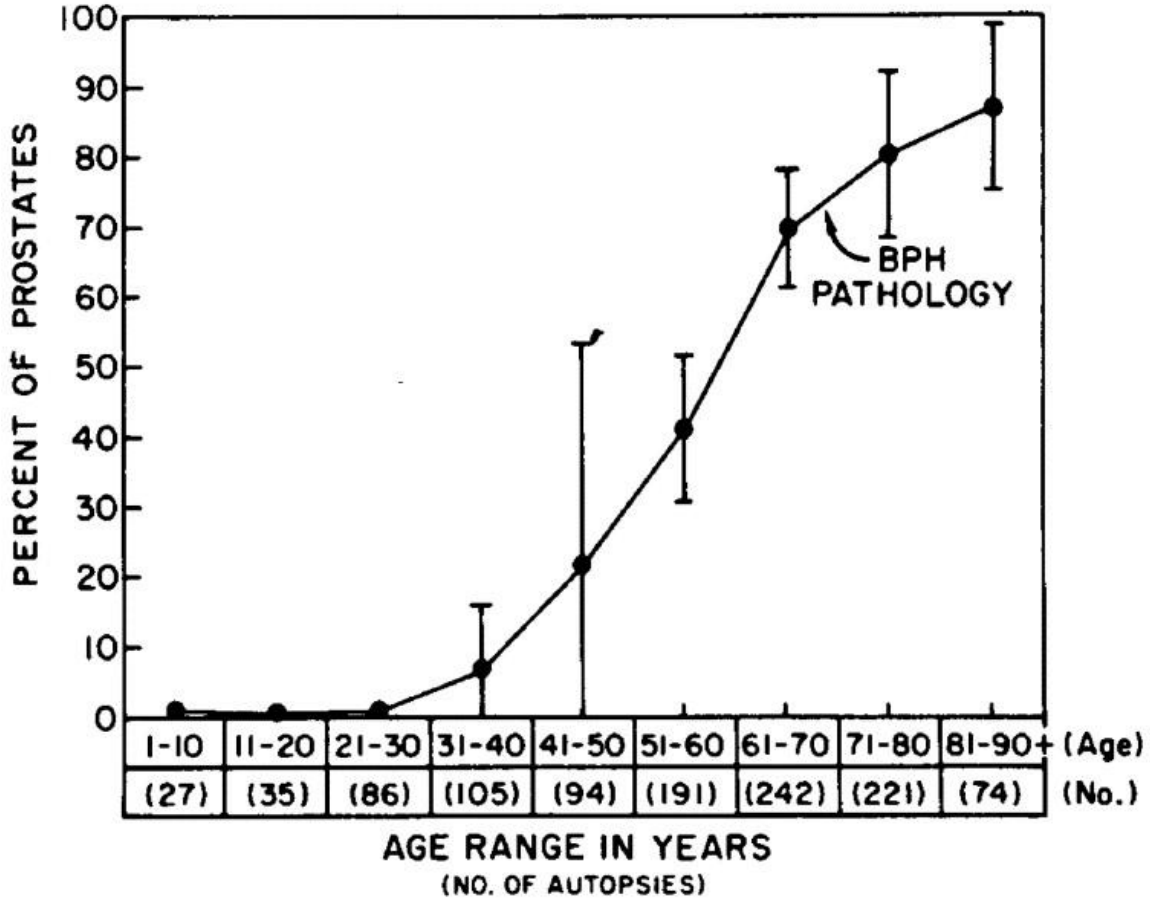
men worldwide were estimated to be suffering from LUTS in 2008



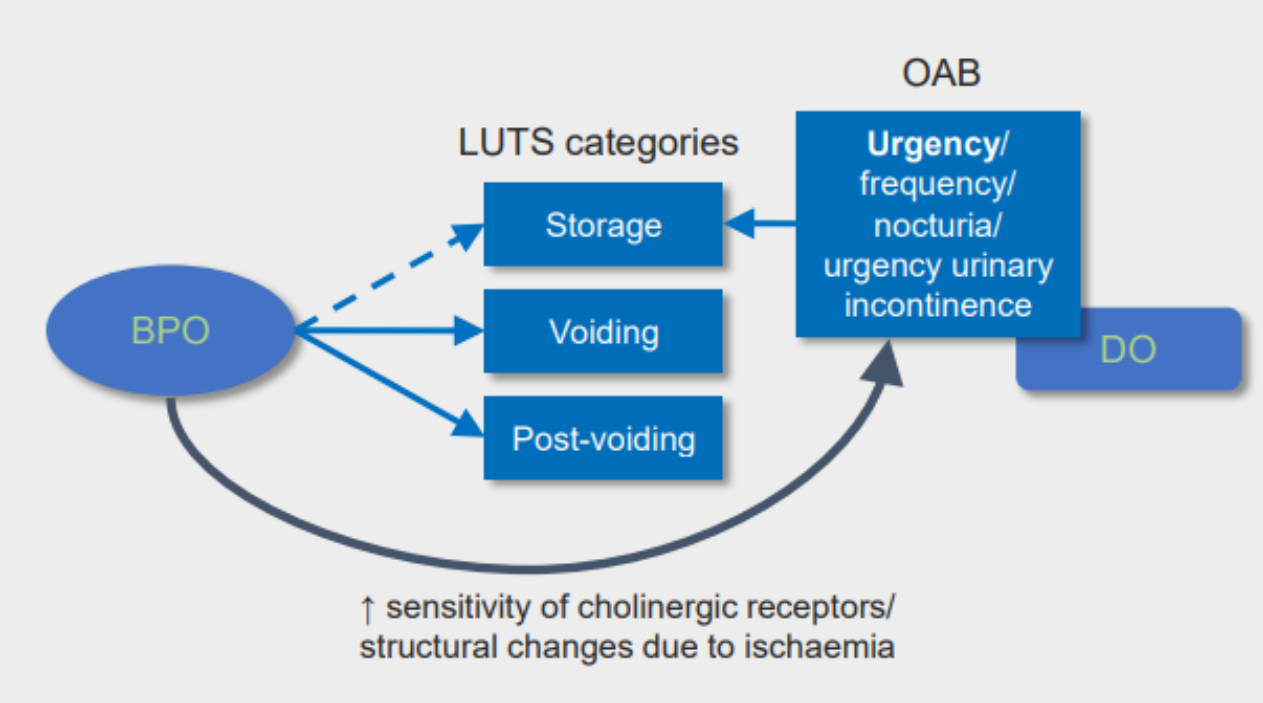
1.1 billion

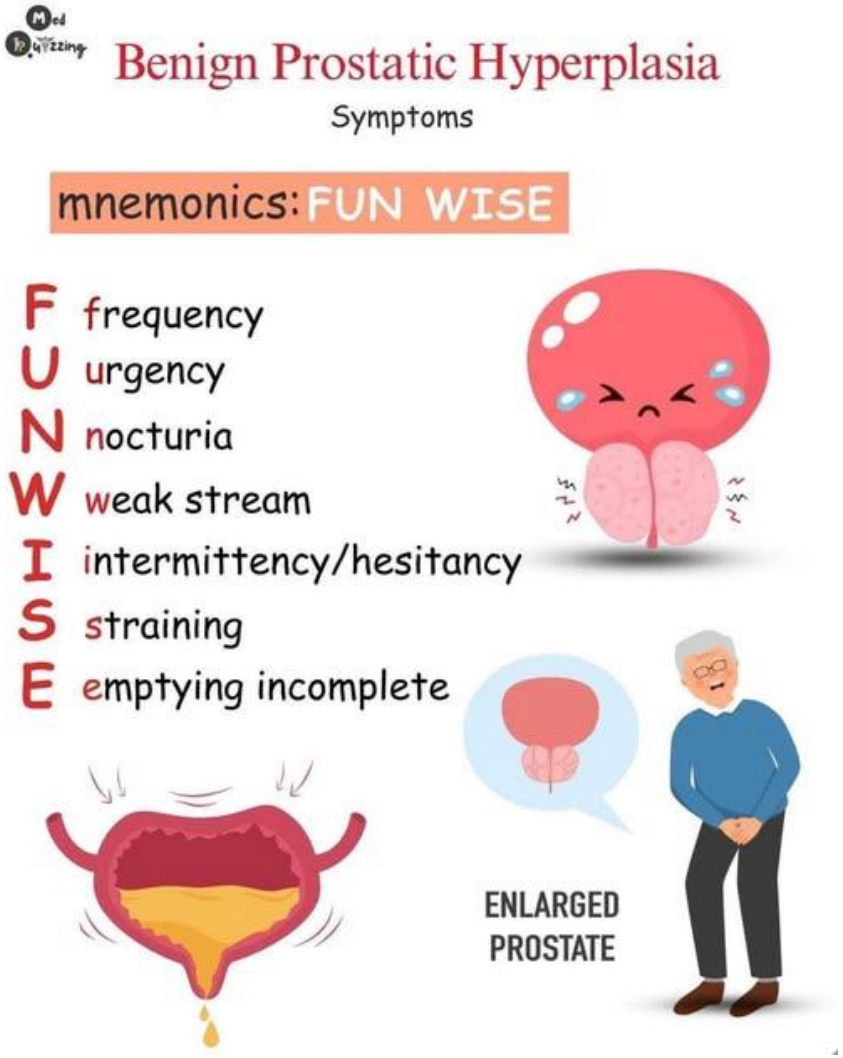
men, at least, were expected to experience LUTS by 2018 (10-year growth)

Incidence of BPH increases with age



McNaughton-Collins AJ Medicine 2005





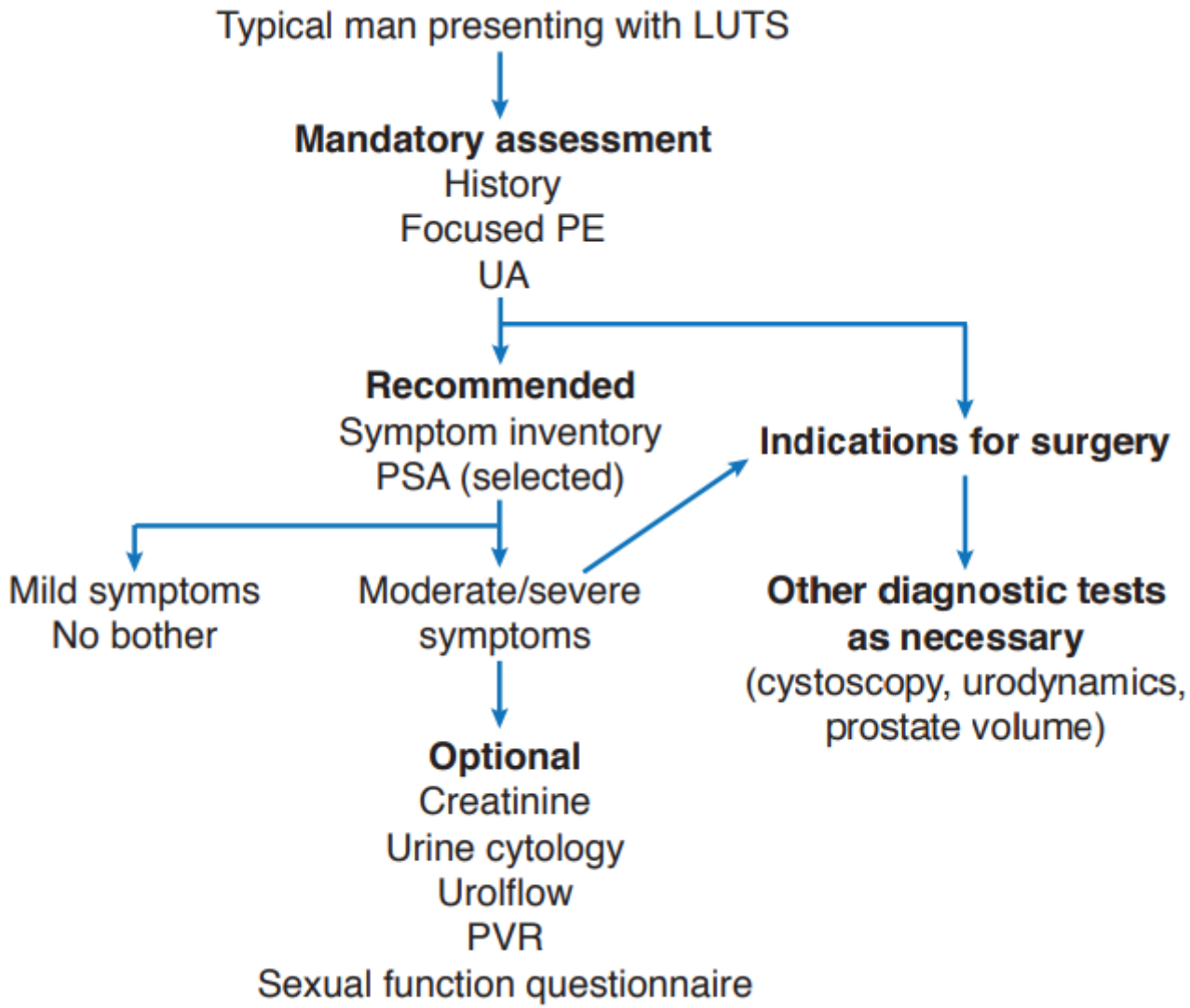
THE UNIVERSITY OF BRITISH COLUMBIA

SIMON FRASER UNIVERSITY

CUA GUIDELINE

UPDATE – Canadian Urological Association guideline: Male lower urinary tract symptoms/ benign prostatic hyperplasia

UROpedia CANADA


Typical man presenting with LUTS
Mandatory assessment
History
Focused PE
UA
Recommended
Symptom inventory
PSA (selected)
Indications for surgery
Mild symptoms
No bother
Moderate/severe
symptoms
Other diagnostic tests
as necessary
(cystoscopy, urodynamics,
prostate volume)
Optional
Creatinine
Urine cytology
Urolflow
PVR
Sexual function questionnaire

Symptom inventory with helpful mnemonic

- F - Frequency
- U - Urgency
- N - Nocturia
- W - Weak stream
- I - Intermittency
- S - Straining
- E - Emptying incomplete

International Prostate Symptom Score (I-PSS)

Patient Name: _____ **Date of birth:** _____ **Date completed** _____

In the past month:	Not at All	Less than 1 in 5 Times	Less than Half the Time	About Half the Time	More than Half the Time	Almost Always	Your score
1. Incomplete Emptying How often have you had the sensation of not emptying your bladder?	0	1	2	3	4	5	
2. Frequency How often have you had to urinate less than every two hours?	0	1	2	3	4	5	
3. Intermittency How often have you found you stopped and started again several times when you urinated?	0	1	2	3	4	5	
4. Urgency How often have you found it difficult to postpone urination?	0	1	2	3	4	5	
5. Weak Stream How often have you had a weak urinary stream?	0	1	2	3	4	5	
6. Straining How often have you had to strain to start urination?	0	1	2	3	4	5	
	None	**1 Time**	**2 Times**	**3 Times**	**4 Times**	**5 Times**	
7. Nocturia How many times did you typically get up at night to urinate?	0	1	2	3	4	5	
Total I-PSS Score							

Score: 1-7: *Mild* 8-19: *Moderate* 20-35: *Severe*

Quality of Life Due to Urinary Symptoms	Delighted	Pleased	Mostly Satisfied	Mixed	Mostly Dissatisfied	Unhappy	Terrible
If you were to spend the rest of your life with your urinary condition just the way it is now, how would you feel about that?	**0**	**1**	**2**	**3**	**4**	**5**	**6**

1st line therapy - Lifestyle changes

- Fluid restriction - especially PM
- Avoidance of caffeinated beverages, alcohol, spicy foods
- Review of medication (diuretics, decongestants, antihistamines)
- Timed voiding
- Constipation management
- Weight loss and management of metabolic syndrome
- Pelvic floor physical therapy

Key factors in elderly (maximize the conservative measures)

- Dietary changes
- Polypharmacy
- Constipation
- Mobility (falls risk)
- Access to toilet (bedside)
- Continence control

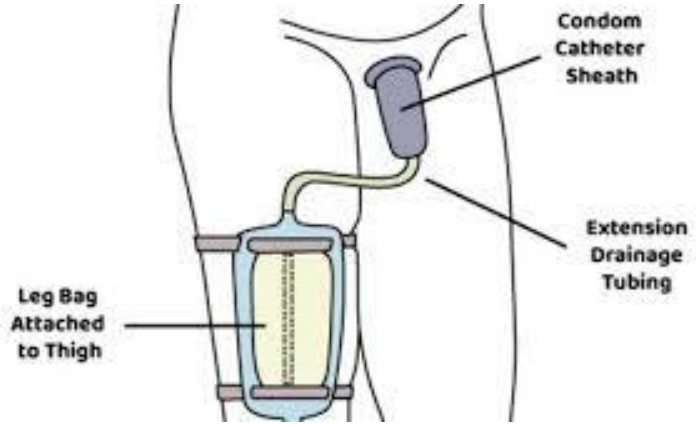


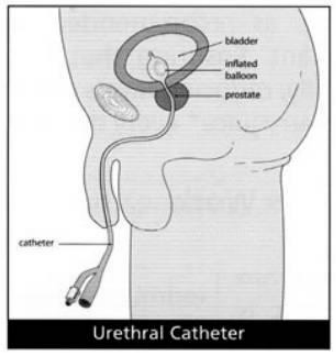
Polypharmacy critical

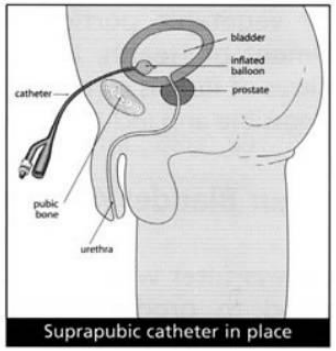
Drug class	Common examples	Mechanism worsening LUTS	Typical clinical effect
Oral decongestants	Pseudoephedrine, phenylephrine	Alpha-agonism ↑ urethral sphincter tone	More hesitancy, weak stream, retention
1st-gen antihistamines	Diphenhydramine, chlorpheniramine, promethazine	Anticholinergic → ↓ detrusor contractility	Hesitancy, incomplete emptying, retention
Tricyclic antidepressants	Amitriptyline, imipramine, nortriptyline	Strong anticholinergic and α-blockade mix	Retention, constipation, sedation
Anticholinergic bladder meds	Oxybutynin, tolterodine, solifenacin	Muscarinic blockade of detrusor muscle	Worsened emptying, possible retention
Opioids	Morphine, hydromorphone, oxycodone	↓ detrusor contractility, CNS depression	Acute retention, decreased urge to void
Muscle relaxants	Cyclobenzaprine, orphenadrine	Anticholinergic and CNS depressant effects	Hesitancy, difficulty initiating stream
NSAIDs	Ibuprofen, naproxen, aspirin	Possible prostaglandin-mediated effect	Higher retention risk in susceptible men
Diuretics	Furosemide, HCTZ	↑ urine production and nocturnal diuresis	Frequency, urgency, nocturia (not true retention)

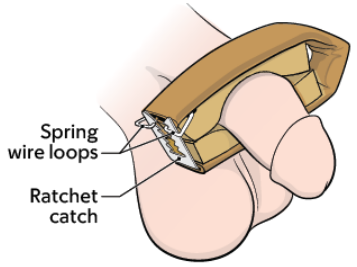
Urinary continence devices for men

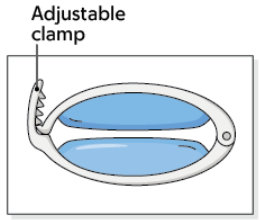


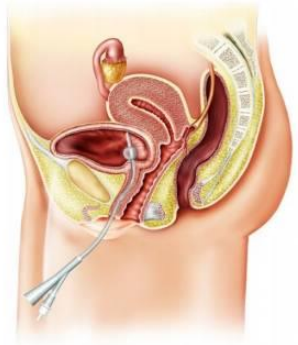


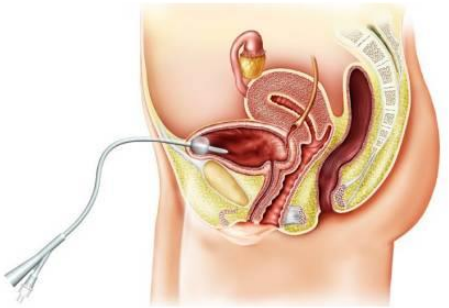






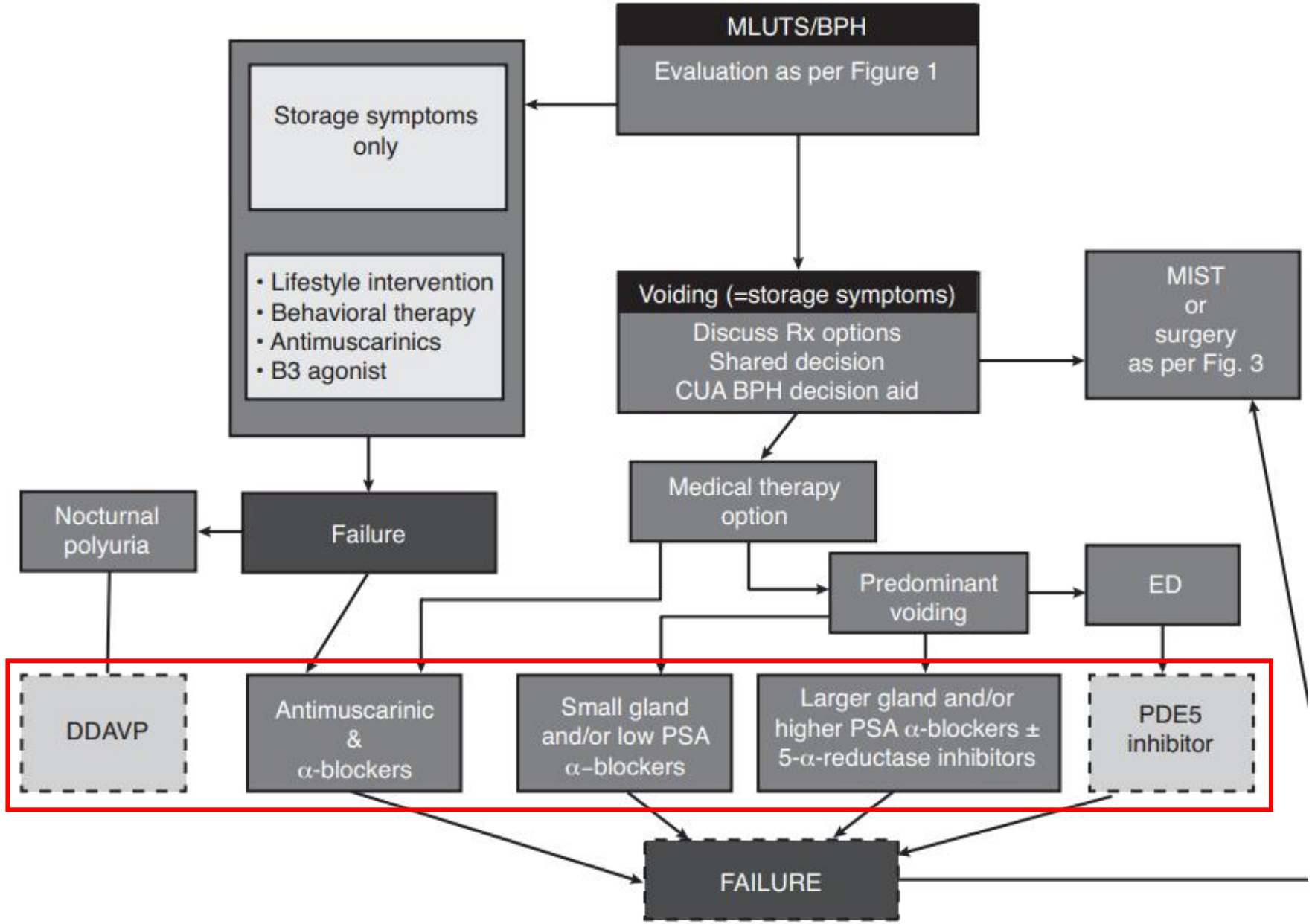






Medical therapy based on symptoms

- **Alpha blocker**
- **5-alpha reductase inhibitor (5ARI)**
- Beta 3 agonist
- Antimuscarinic
- Phosphodiesterase type 5 inhibitors (PDE5I)
- Desmopressin


MLUTS/BPH
Evaluation as per Figure 1
Storage symptoms only
• Lifestyle intervention
• Behavioral therapy
• Antimuscarinics
• B3 agonist
Voiding (=storage symptoms)
Discuss Rx options
Shared decision
CUA BPH decision aid
MIST
or
surgery
as per Fig. 3
Nocturnal polyuria
Failure
Medical therapy option
Predominant voiding
ED
DDAVP
Antimuscarinic & α-blockers
Small gland and/or low PSA α–blockers
Larger gland and/or higher PSA α-blockers ± 5-α-reductase inhibitors
PDE5 inhibitor
FAILURE

A-Blockers = excellent first treatment to improve symptoms

- Does not alter the natural progression of disease
- SE: dizziness (2–10%), retrograde ejaculation, rhinitis
- Tamsulosin (0.4mg), Alfuzosin (10mg), Silodosin (8mg)



5ARI reduces risk of retention/surgery

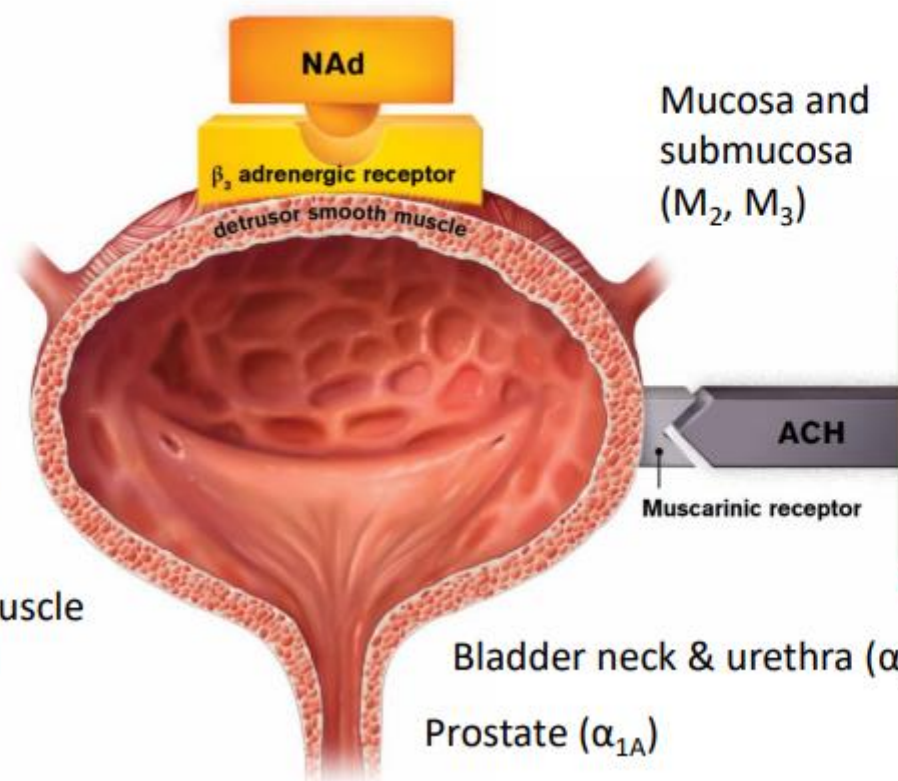
- Prostate >30 cc (and/or PSA >1.5) → expect 25% shrinkage
- SE: ED (9%), decreased libido (6%), ejaculation disorders (2%), gynecomastia (1%), post-finasteride syndrome
- Finasteride (5mg), Dutasteride (0.5mg)
- Combination > monotherapy (can stop A-blocker after 6-9 mo)





M = muscarinic
α = α_1 and α_2-adrenergic
β = β_3-adrenergic
NAd = noradrenaline
ACH = acetylcholine

STORAGE PHASE
Sympathetic nerves release NAd, activating **β-adrenoceptors** to **relax** the bladder



Mucosa and submucosa (M_2, M_3)

VOIDING PHASE
Parasympathetic nerves release ACH, activating **M receptors** to **contract** the bladder

Detrusor muscle (M_2, M_3, β_3)

Bladder neck & urethra (α_{1A})

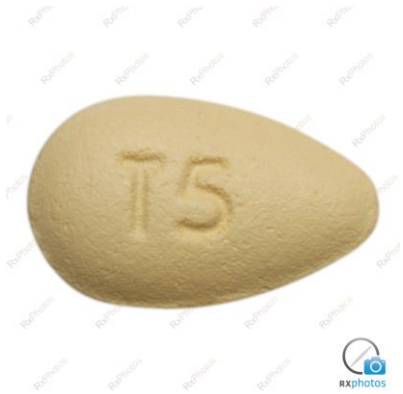
Prostate (α_{1A})

If storage symptoms, treat as OAB

Feature	Antimuscarinic	B3 Agonists
Mechanism of Action	Block acetylcholine binding to muscarinic receptors to prevent bladder contractions	Stimulate beta -3 receptors in the detrusor muscle to promote bladder relaxation
Common Drugs	Oxybutynin, Tolterodine, Solifenacin, Darifenacin, Trospium	Mirabegron (Myrbetriq)
Side Effects	Dry mouth (30%), constipation, blurred vision	HTN, headache, UTIs
Cognitive Impact	Associated with cognitive decline and dementia, especially in older adults	Significantly lower risk

If ED, PDE5 inhibitors

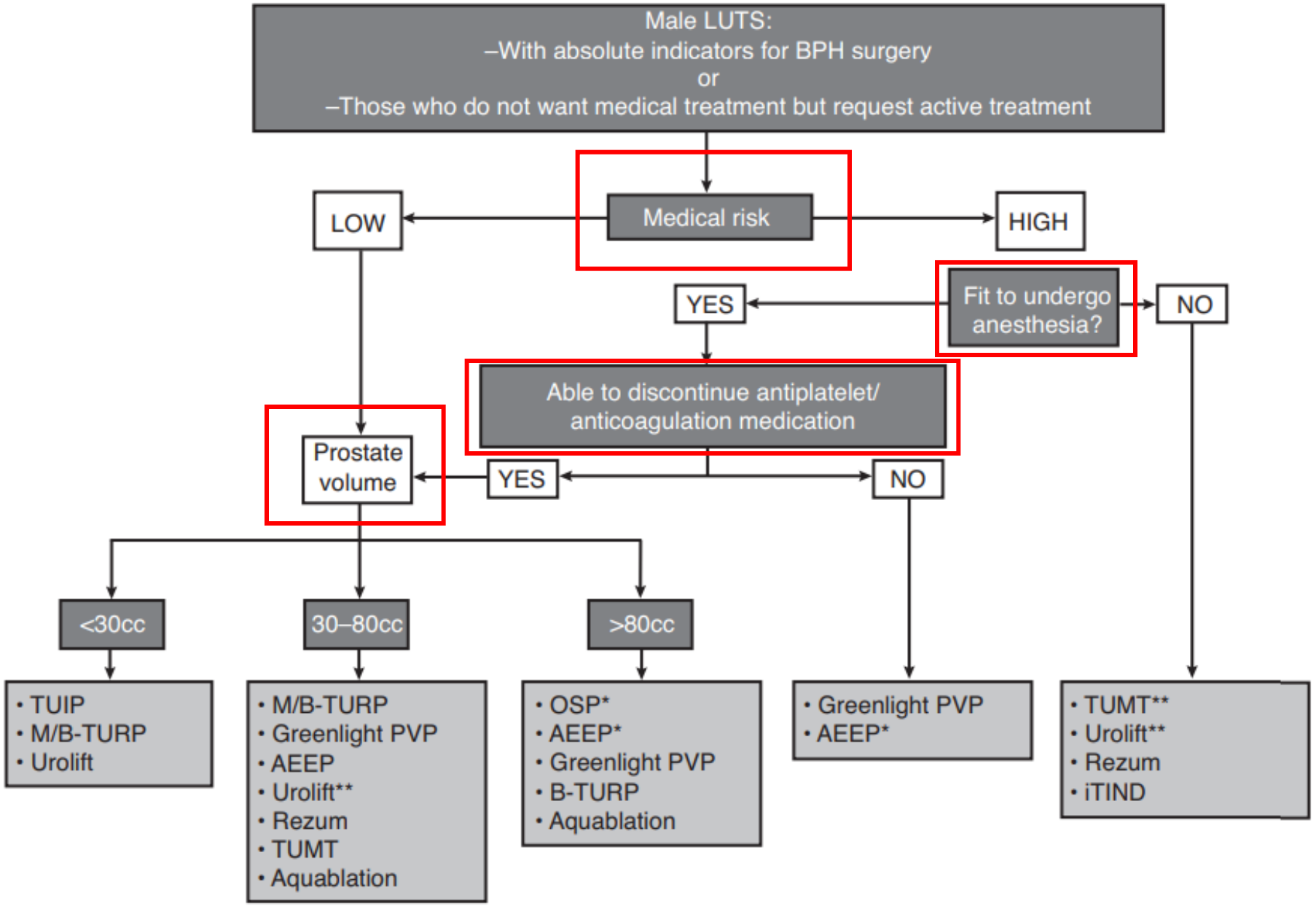
- Improvements in IPSS, storage and voiding symptoms, quality of life
- Tadalafil 5 mg daily (long acting)



If nocturnal polyuria, desmopressin (ddAVP)

- > 33% of the total daily urine volume occurs at night (voiding diary)
- Low risk of hypoNa when baseline Na is normal
- Na must be checked at baseline, 4-8 days and at 30 days after initiation of treatment




Male LUTS:
–With absolute indicators for BPH surgery
or
–Those who do not want medical treatment but request active treatment
Medical risk
LOW
HIGH
Fit to undergo anesthesia?
YES
NO
Able to discontinue antiplatelet/ anticoagulation medication
Prostate volume
YES
NO
<30cc
30–80cc
>80cc
• TUIP
• M/B-TURP
• Urolift
• M/B-TURP
• Greenlight PVP
• AEEP
• Urolift**
• Rezum
• TUMT
• Aquablation
• OSP*
• AEEP*
• Greenlight PVP
• B-TURP
• Aquablation
• Greenlight PVP
• AEEP*
• TUMT**
• Urolift**
• Rezum
• iTIND

Evolution of BPH surgery

- Monopolar TURP
- Open simple prostatectomy (prostate >80cc)

- Bipolar TURP
- Urolift
- Rezum
- HOLEP
- Greenlight laser vaporization
- Aquablation
- Robotic simple prostatectomy

If retention due to BPH – use Coude tip catheter



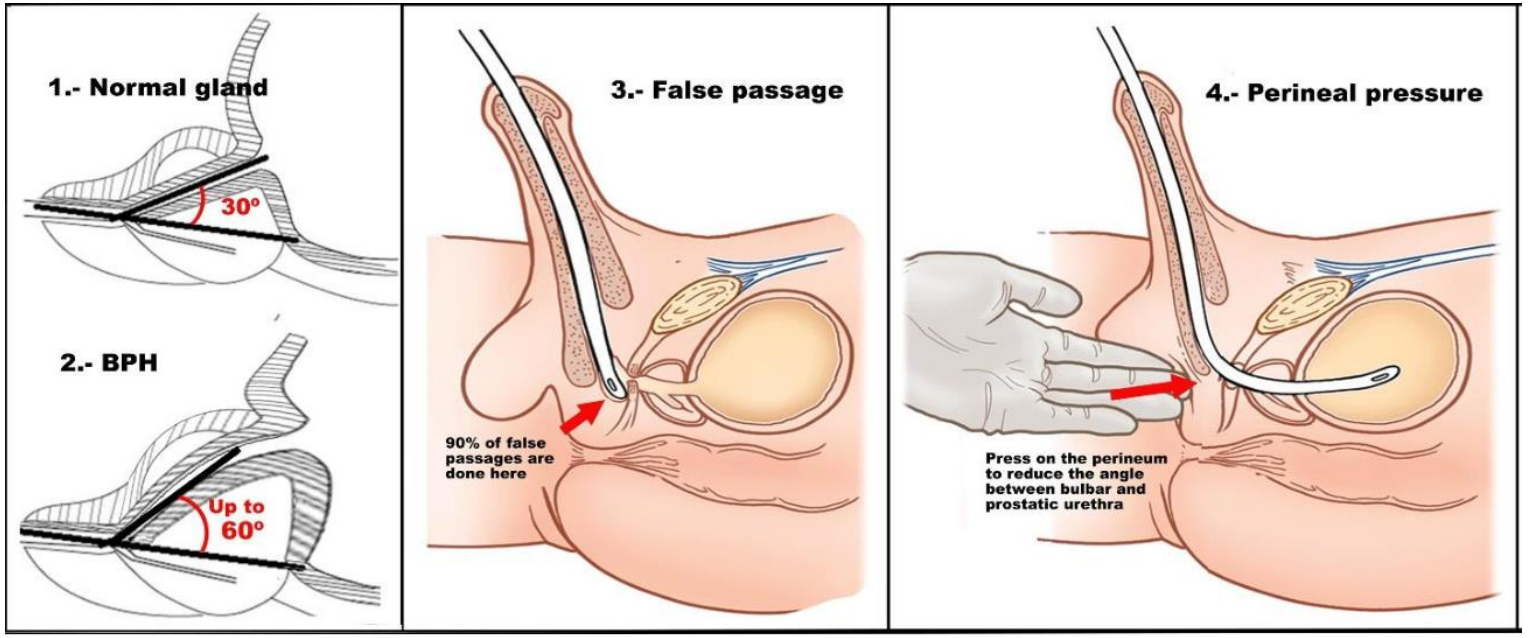
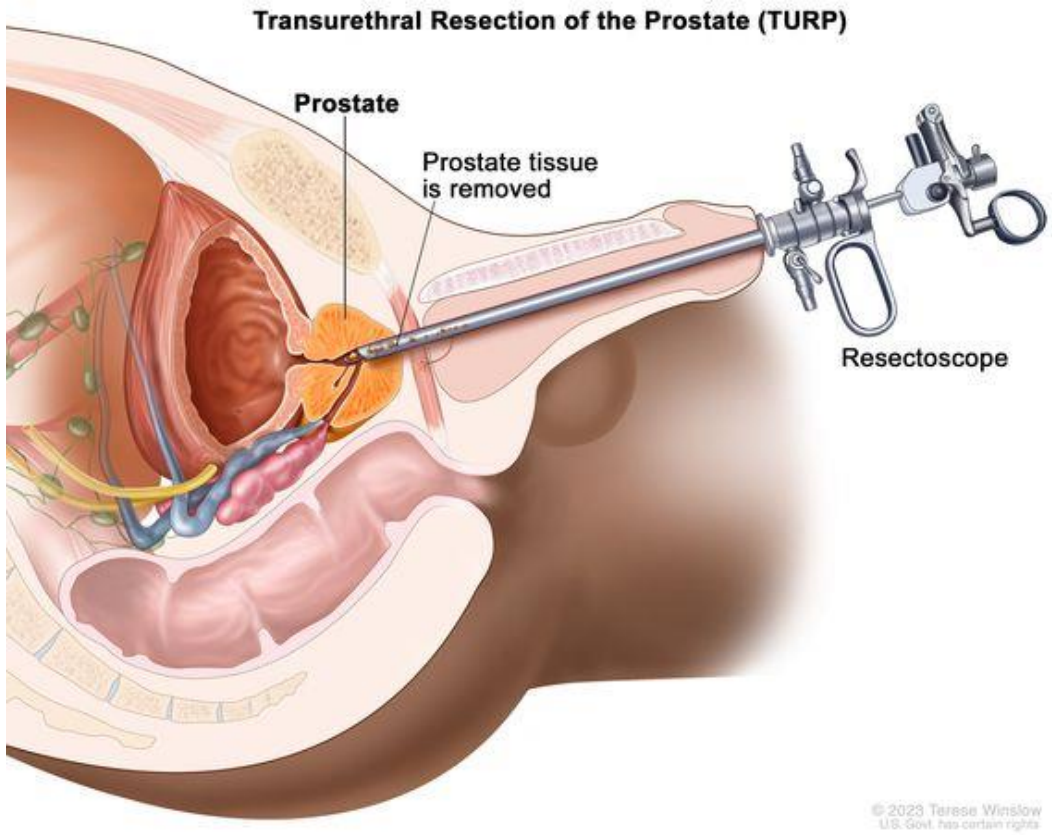
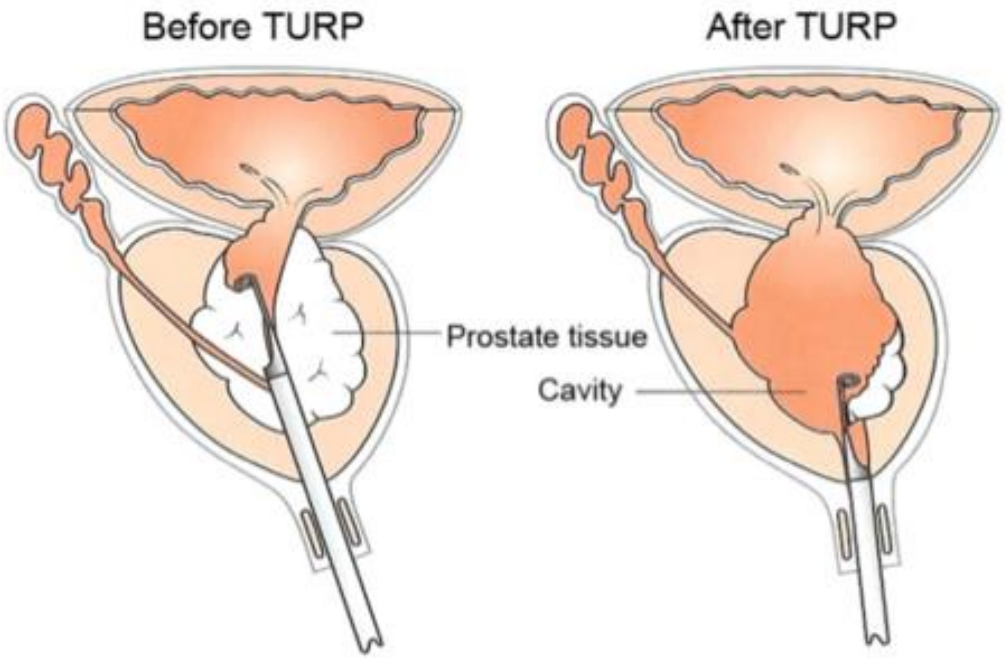


Figure 1: Urethral angulation, false passage production and how to avoid it

TURP is the standard therapy under a spinal/general anesthetic



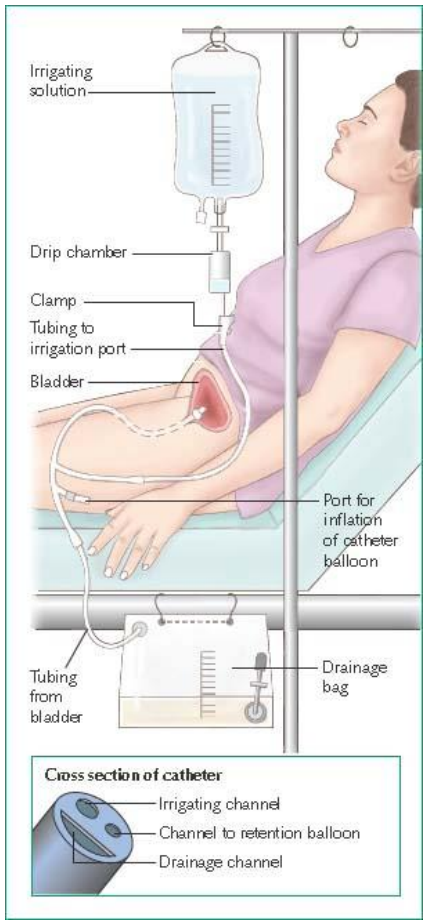


Risks for TURP

- Bleeding (2% transfusion)
- UTI (5%)
- Urinary Retention (2-5%)
- Urethral Stricture or Bladder Neck Stenosis (2-10%)
- Persistent Incontinence (< 1 % long-term)
- Retrograde Ejaculation (50-90%)
- ED (10%)
- Retreatment (5% within 5 years)

Risks increase with prostate size

Post-TURP, patients are admitted for CBI due to hematuria



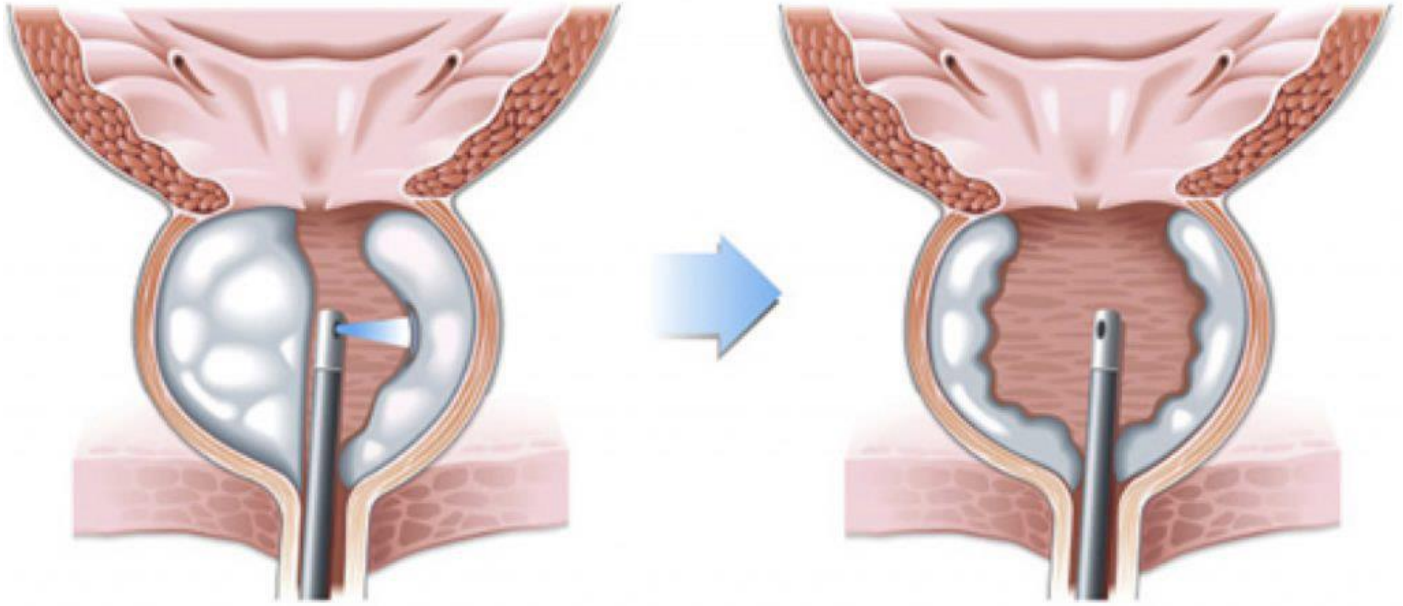






Greenlight laser prostate causes less bleeding

- Alternative to TURP, especially for patients on anticoagulants
- Pro: less bleeding, no need for admission/CBI
- Can: may causes irritative LUTS (up to 30%)

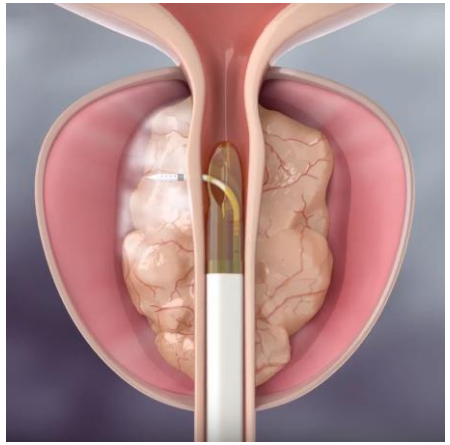


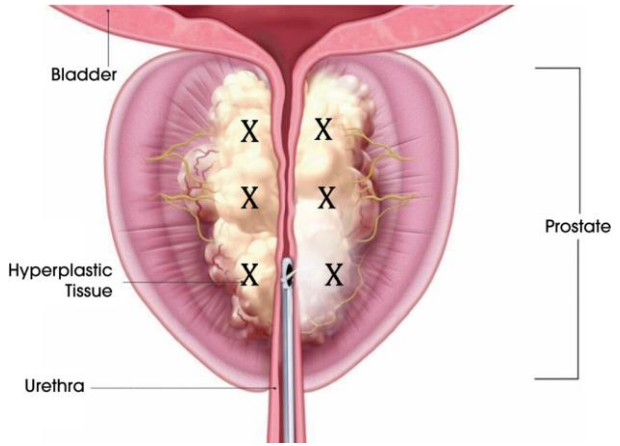


Rezum, minimally invasive surgical therapy (MIST) under local/sedation

- Performed via cystoscopy in the non-hospital outpatient setting
- Pro: outpatient setting (8 min), lower complications, less sexual dysfunction
- Con: takes > 2 weeks for effect (maximum 3-6 months), not publicly funded







The Prostate

ORIGINAL ARTICLE

Rezūm for retention—retrospective review of water vaporization therapy in the management of urinary retention in men with benign prostatic hyperplasia

Daniel Bassily BS, Vincent Wong MD, John L Phillips MD, Mitchell Fraiman MD, Ross Bauer MD, Christopher M Dixon MD, Nathan C Wong MD

- N = 49 with urinary retention (catheter, median PVR 900 pre)
- median age = 73 years
- median prostate volume = 73cc (IQR: 50, 103)

	Pre-REZUM	Post-REZUM (6 months)
IPSS	17	4
IPSS QOL	4	1
Catheter	100%	20.4%

80% remained catheter-free at 6 months!

Wong Prostate 2021

REZUM—WATER VAPOR THERMAL THERAPY FOR THE TREATMENT OF BENIGN PROSTATIC HYPERPLASIA

HEALTH TECHNOLOGY ASSESSMENT REPORT

A report for the BC Health Technology Assessment Office, on behalf of health authorities and the Ministry of Health. Vancouver. [October 2022]. Version 1.0

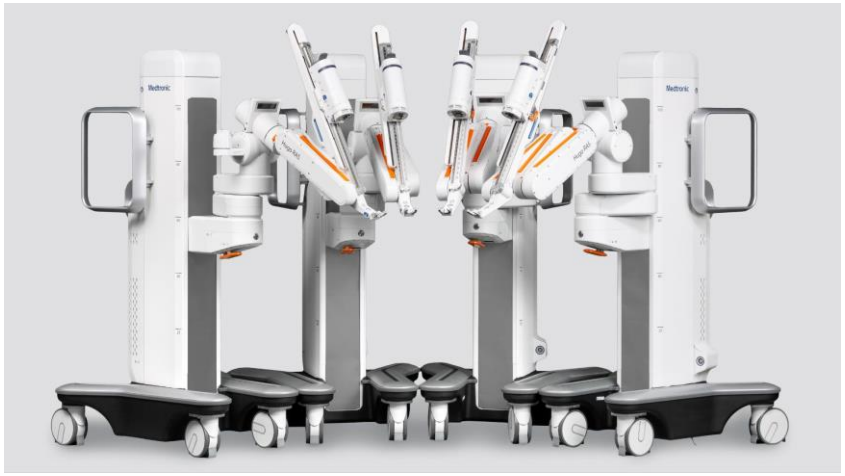
Water Vapor Thermal Therapy for the Treatment of Benign Prostatic Hyperplasia

Last updated on July 16, 2024

Health Technology Assessment

Robotics is the future to better surgery





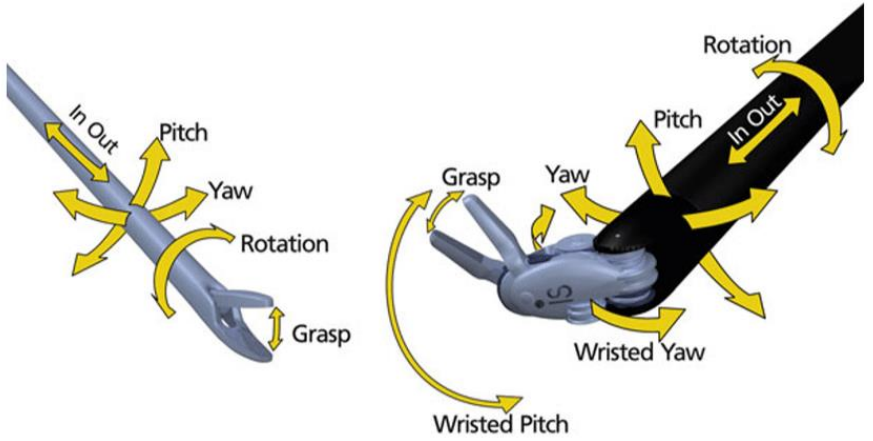


Robotics is the future to better surgery

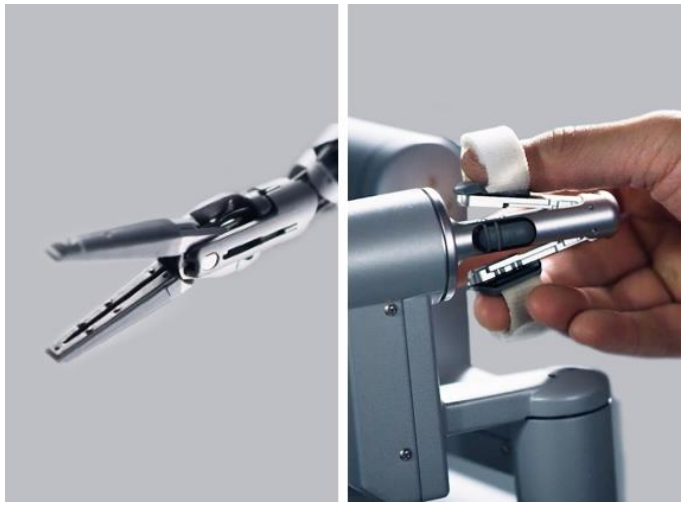


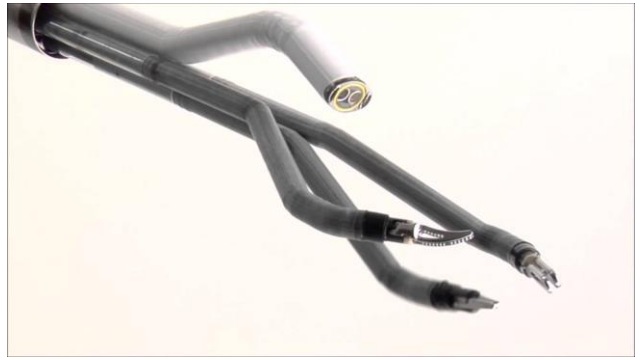


3D Vision



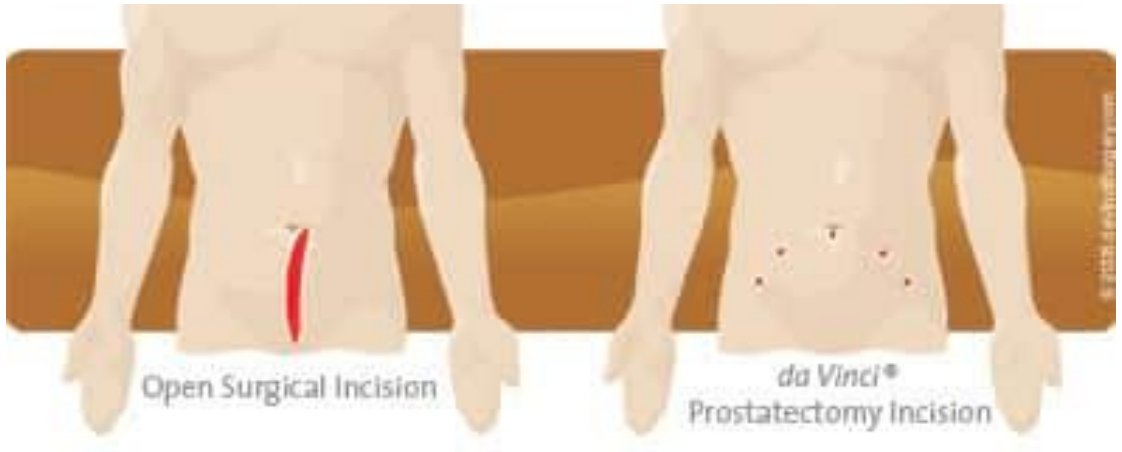






Endowrist Technology

Robotic simple prostatectomy



- Less bleeding
- Less pain
- Shorter hospital stay
- Faster return to activity



ROYAL COLUMBIAN
Hospital Foundation

BPH Summary

- LUTS are one of the most common age-related disorders afflicting men
- Storage vs voiding symptoms
- Medical therapy is still effective
- Significant evolution in surgical management

Physician Leadership Program

DEVELOPED IN PARTNERSHIP WITH BC HEALTH AUTHORITIES, BC PATIENT SAFETY QUALITY COUNCIL AND UBC FACULTY OF MEDICINE





UBC

UBC SAUDER
SCHOOL OF BUSINESS
Executive Education

Vision to improve the experience of patients with prostate cancer in BC



PCP
- Screen PSA/DRE

> 1 mo

Urologist
- Discuss biopsy vs MRI

2-12 mo

Hospital
- Perform MRI

1-2 weeks

Urologist
- Review MRI

2-3 mo

Radiologist
- Perform biopsy

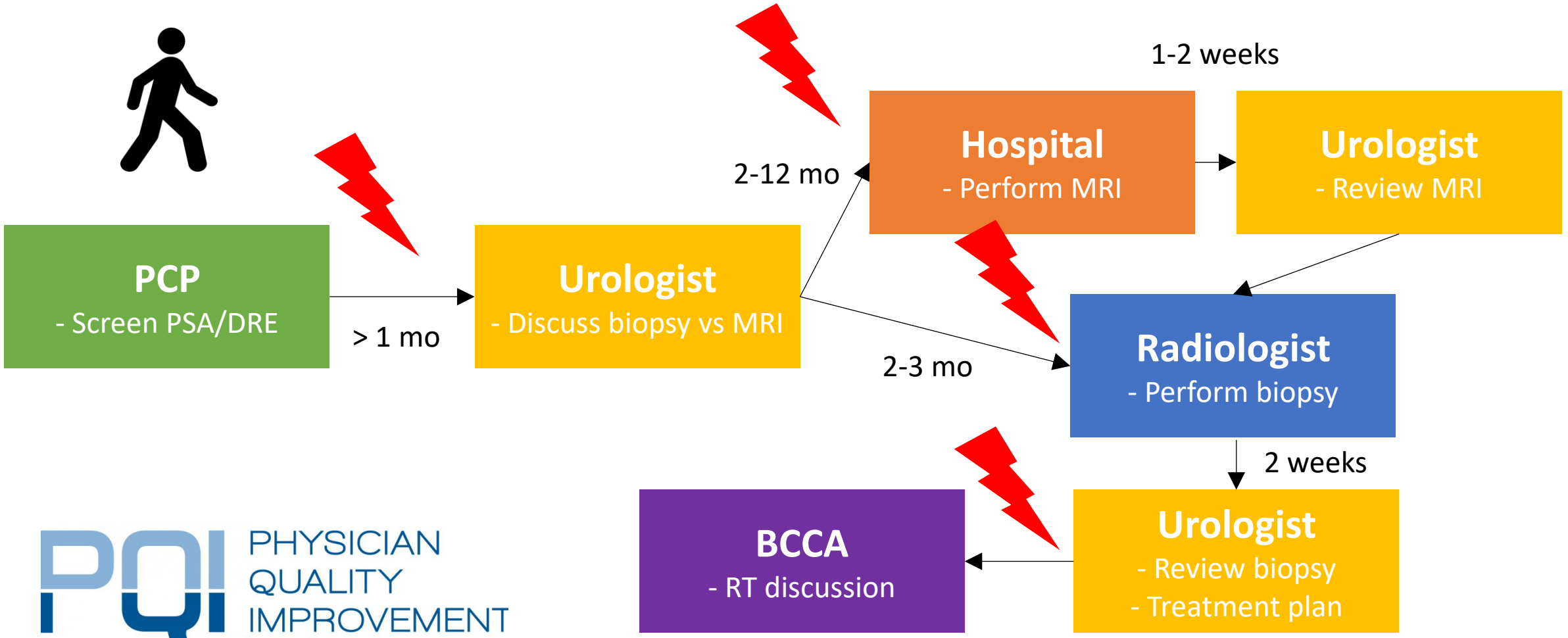
2 weeks

Urologist
- Review biopsy
- Treatment plan

BCCA
- RT discussion

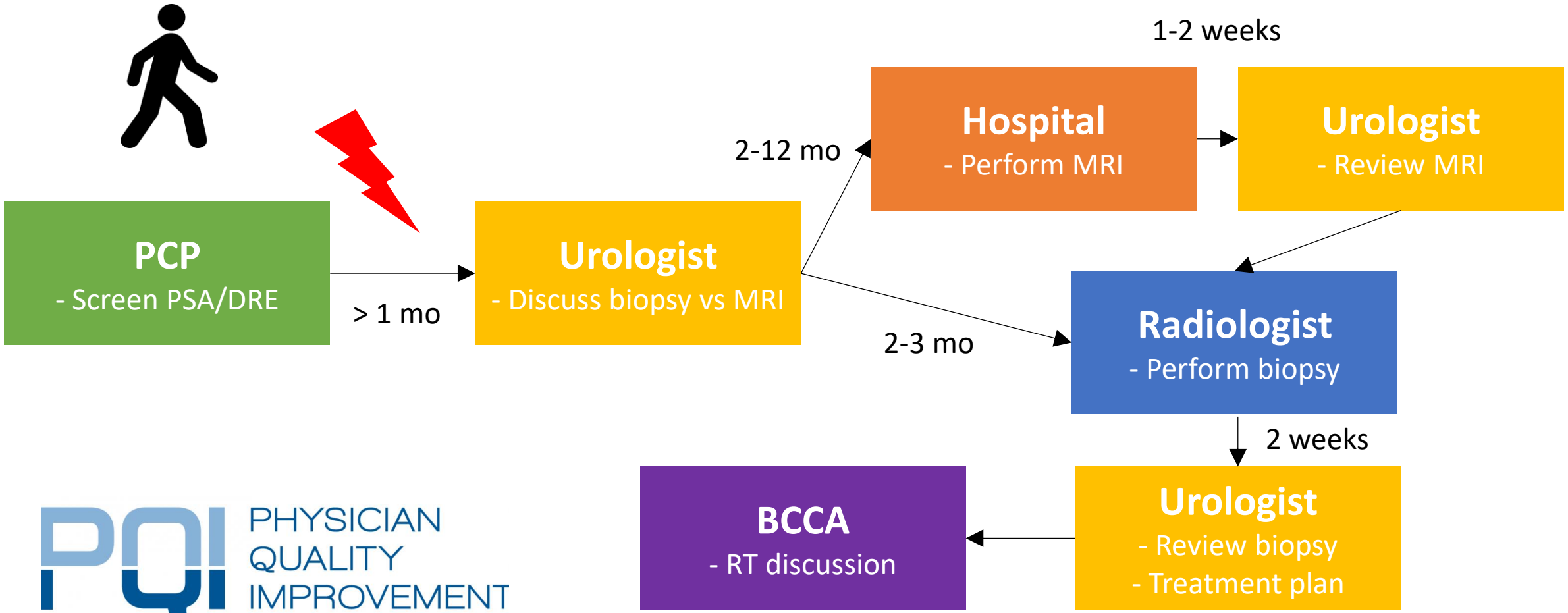
PQI PHYSICIAN QUALITY IMPROVEMENT
An SSC Initiative

Vision to improve the experience of patients with prostate cancer in BC



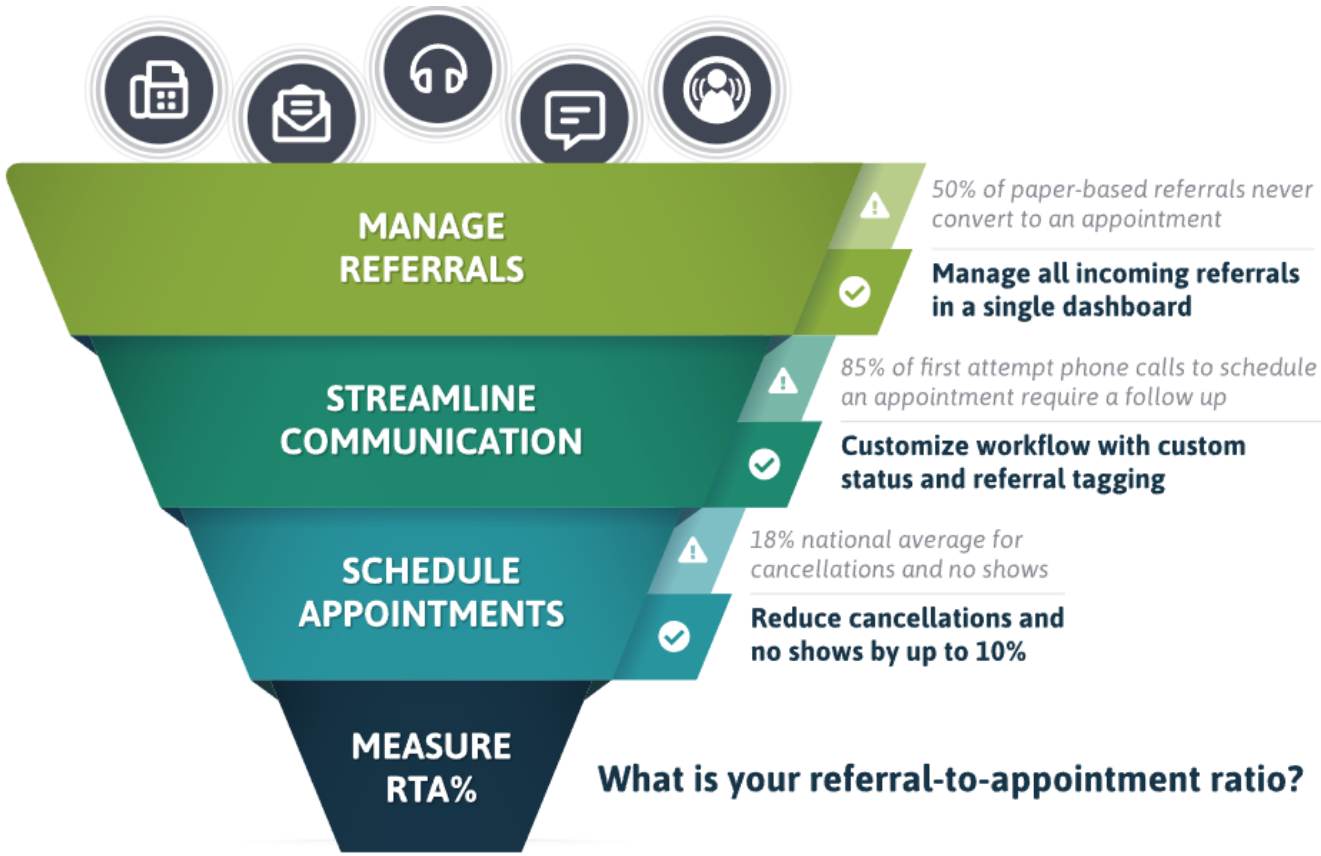
PHYSICIAN QUALITY IMPROVEMENT
An SSC Initiative

1) Vision – to streamline urgent referrals



PQI PHYSICIAN QUALITY IMPROVEMENT
An SSC Initiative

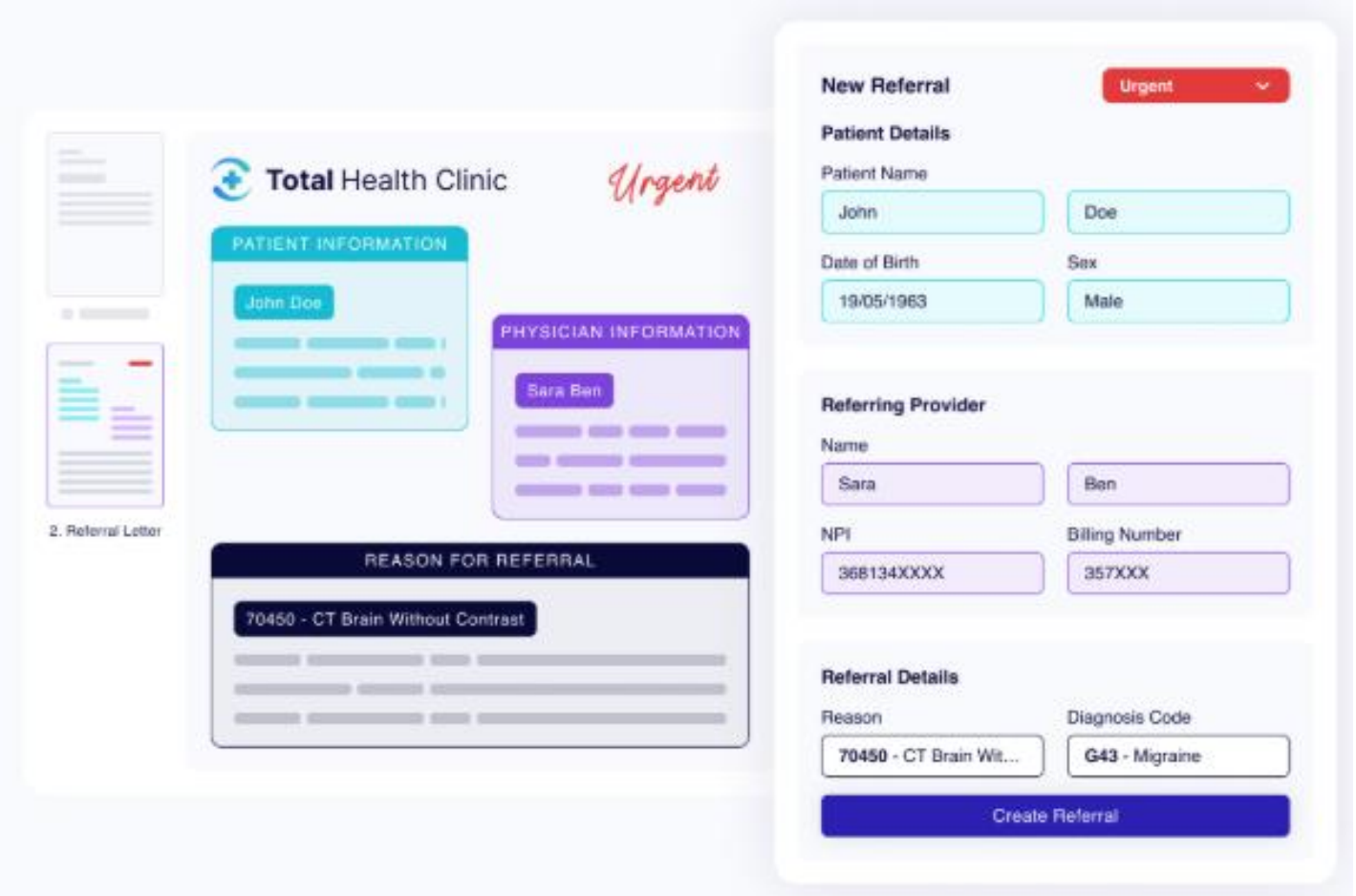

PLAIN PAPER FAX


MANAGE REFERRALS
50% of paper-based referrals never convert to an appointment
Manage all incoming referrals in a single dashboard
STREAMLINE COMMUNICATION
85% of first attempt phone calls to schedule an appointment require a follow up
Customize workflow with custom status and referral tagging
SCHEDULE APPOINTMENTS
18% national average for cancellations and no shows
Reduce cancellations and no shows by up to 10%
MEASURE RTA%
What is your referral-to-appointment ratio?

Fax AI to the rescue!

AI can instantly transform unstructured PDF’s to structured JSON data

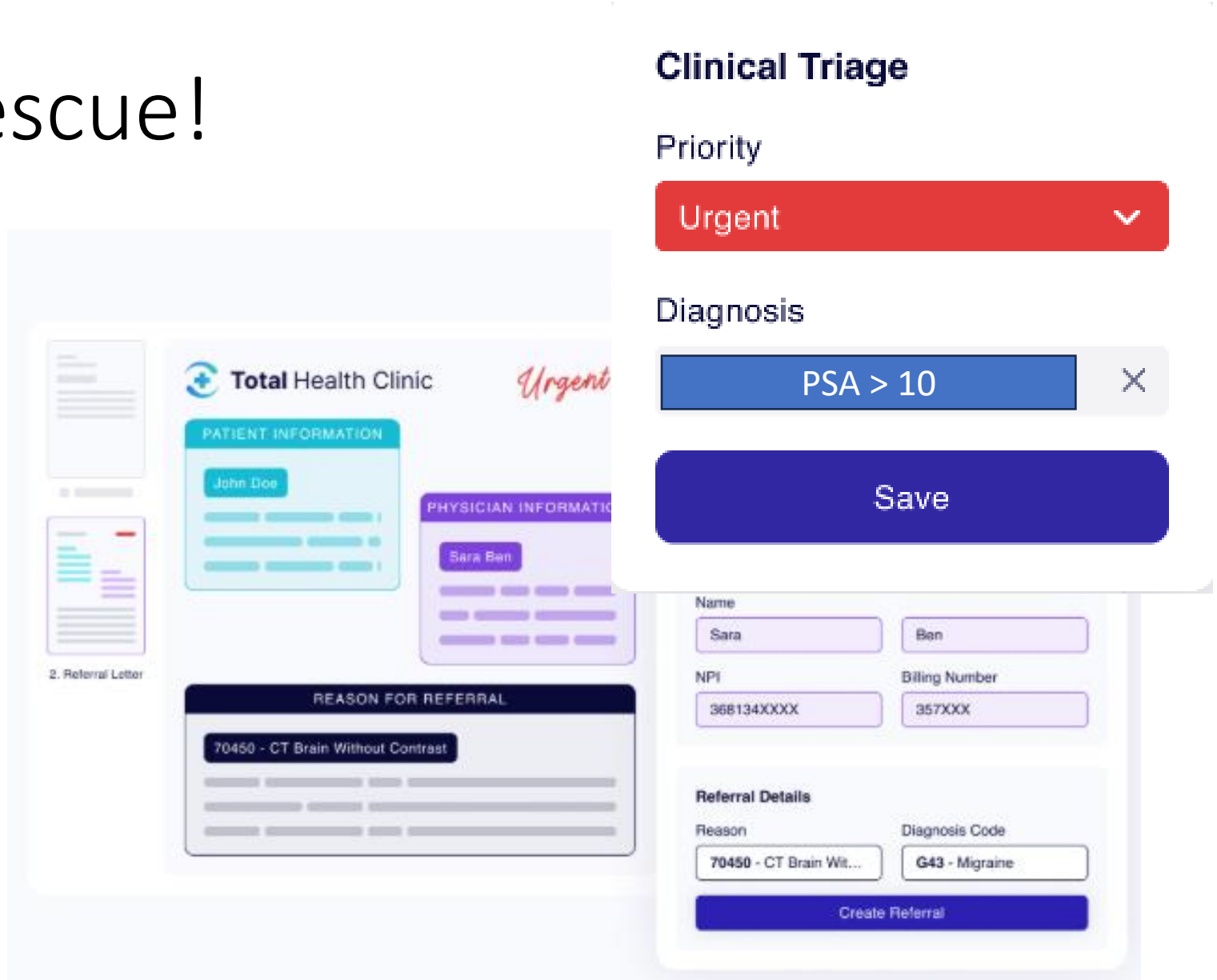
- Triage incoming faxes
- Parse clinical text
- EMR intake



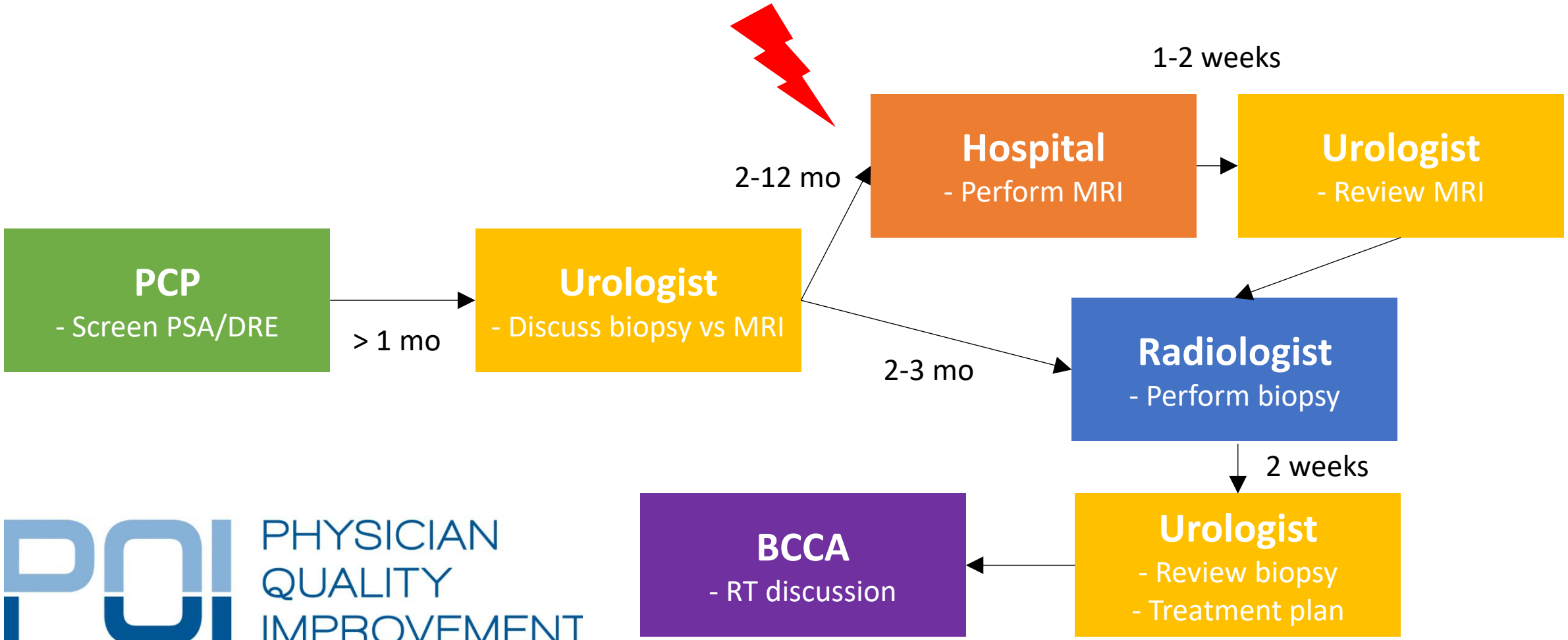
Fax AI to the rescue!

AI can instantly transform unstructured PDF's to structured JSON data

- Triage incoming faxes
- Parse clinical text
- EMR intake

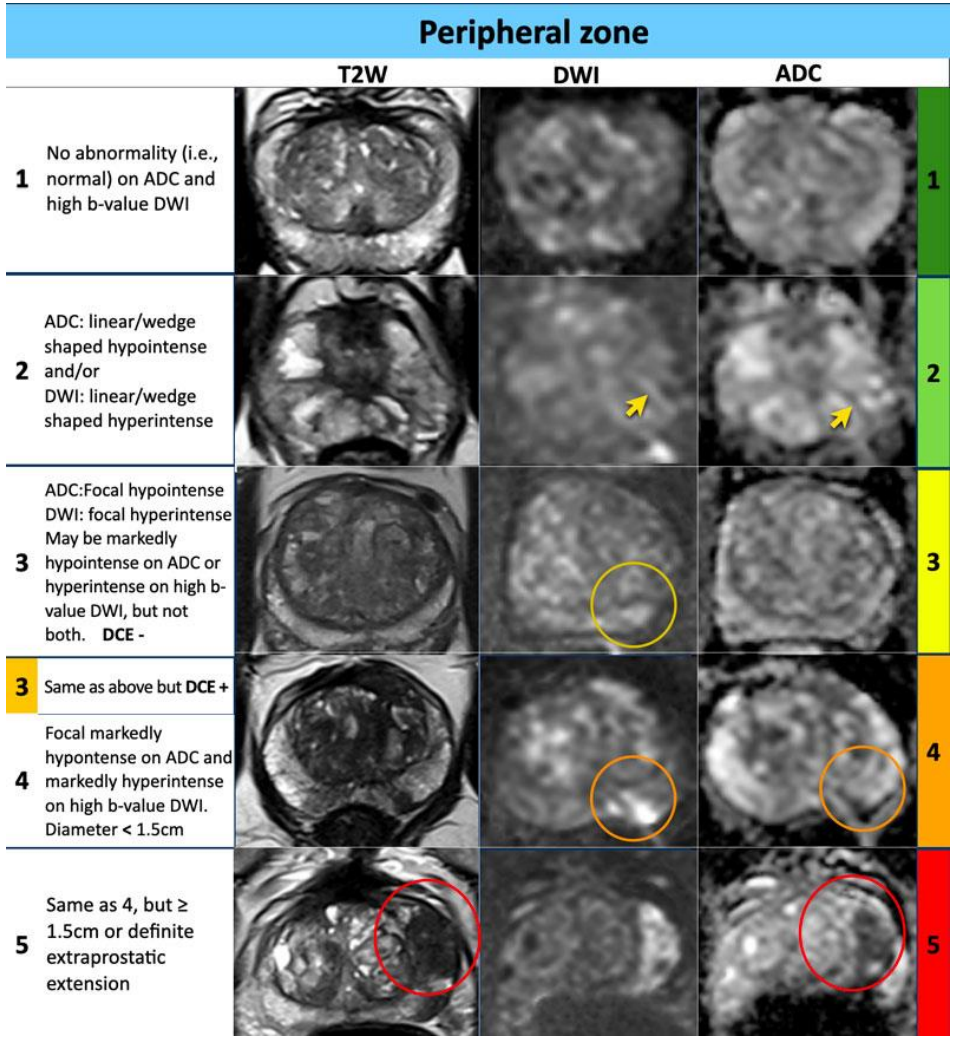


2) Vision – to increase MRI access



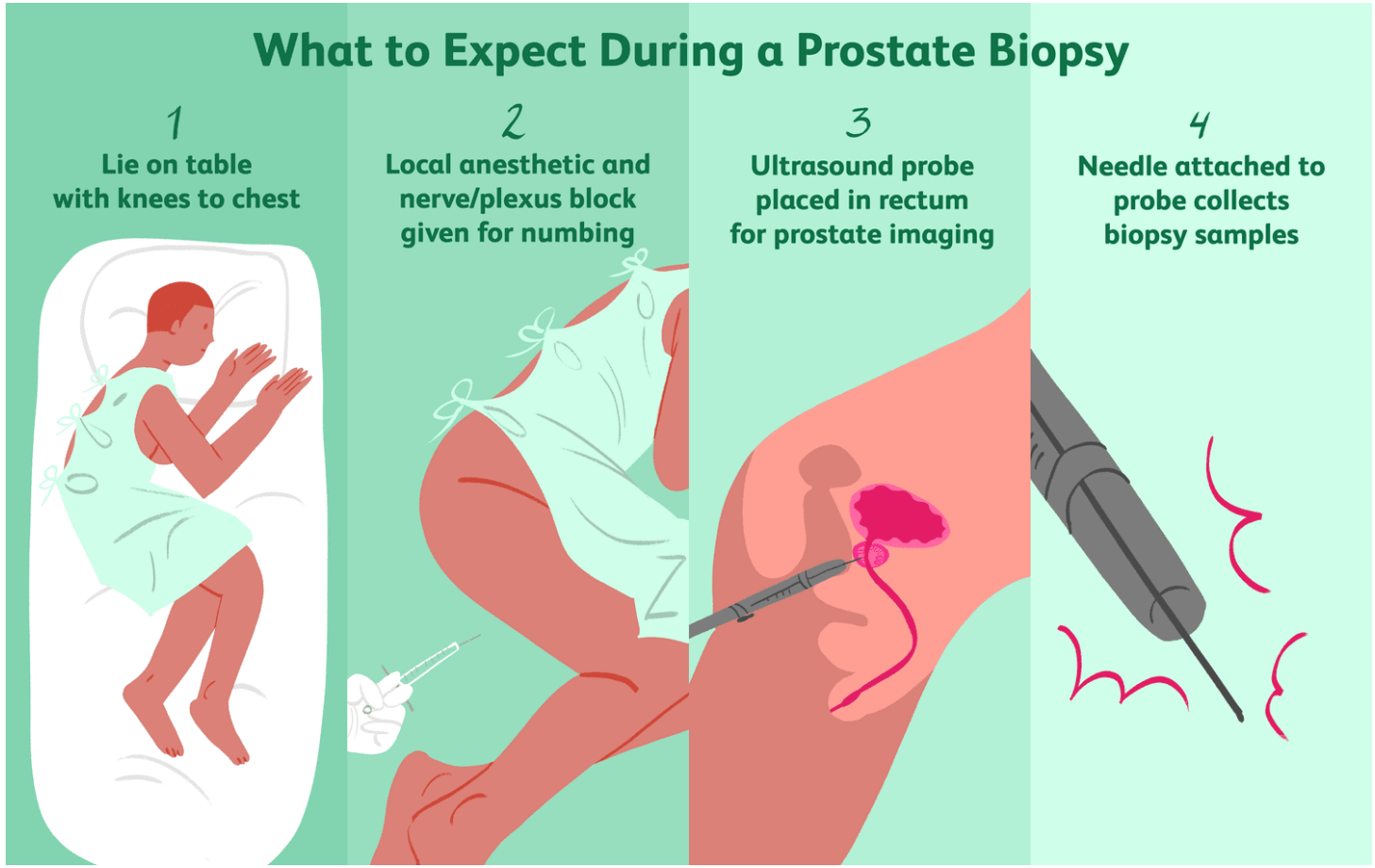
PQI PHYSICIAN QUALITY IMPROVEMENT
An SSC Initiative

mpMRI can help detect target lesions, being used increasingly pre-biopsy





Why MRI? Risk of life-threatening sepsis (1-4%) with transrectal (“transfectal”) prostate biopsy



UPDATE – 2022 Canadian Urological Association recommendations on prostate cancer screening and early diagnosis

Endorsement of the 2021 Cancer Care Ontario guidelines on prostate multiparametric magnetic resonance imaging

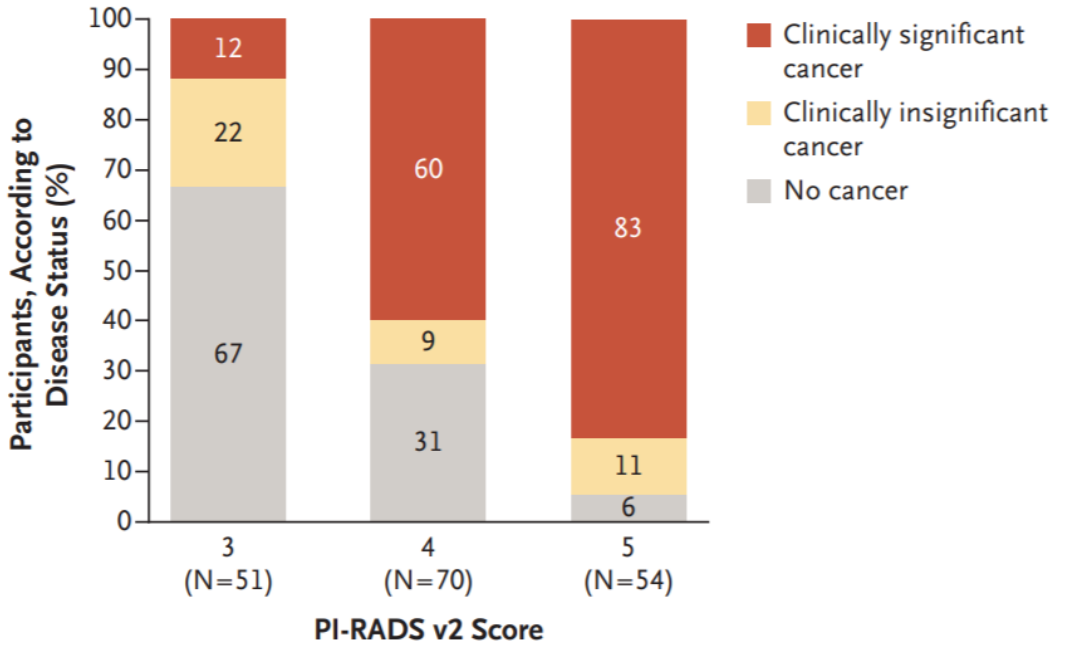


Figure 3. Percentages of Men with Clinically Significant, Clinically Insignificant, and No Cancer, Identified According to PI-RADS v2 Score.

Recommendation: For biopsy-naive men at risk of PCa → mpMRI recommended prior to biopsy

- If **mpMRI (+)** → targeted biopsy (TB) AND systematic biopsy (SB) should be performed to maximize PCa detection

- If **mpMRI (-)** → consider forgoing any biopsy after shared decision-making and followup

Problem! MRI wait-times in BC can be > 9 months

- Review of patients pulled via EMR who have PSA/MRI (2025)
- N = 30
- Median PSA = 7
- Median wait-time = 113 days

Location	Min	Median	Max
A (6)	32	89	116
B (6)	48	92	135
C (10)	48	187	349
D (7)	86	231	550
Private (1)		39	

BpMRI has similar diagnostic efficacy as mpMRI

A Biparametric MRI

MRI result	Prostate cancer present	Prostate cancer absent	
Positive	145	128	273
Negative	3	205	208
	148	333	481

	No./total	% (95% CI)
Sensitivity	145/148	98.0 (94.2-99.6)
Specificity	205/333	61.6 (56.1-66.8)
PPV	145/273	53.1 (47.0-59.2)
NPV	205/208	98.6 (95.8-99.7)

=

B Multiparametric MRI

MRI result	Prostate cancer present	Prostate cancer absent	
Positive	147	133	280
Negative	1	200	201
	148	333	481

	No./total	% (95% CI)
Sensitivity	147/148	99.3 (96.3-100.0)
Specificity	200/333	60.1 (54.6-65.4)
PPV	147/280	52.5 (46.5-58.5)
NPV	200/201	99.5 (97.3-100)

Ng et al. JAMA 2025 (PRIME trial)

Use of bpMRI in BC can lead to increase patient access to MRI

Feature	Multiparametric (mpMRI)	Biparametric (bpMRI)
Sequences	T2-weighted (T2W) Diffusion-weighted (DWI) **Dynamic contrast-enhanced (DCE)**	T2W DWI
Contrast Agent	Gadolinium-based contrast	~~No contrast~~
Scan Time	Longer (~ 30-40 min + IV access)	Shorter (~ 15-20 min)
Cost	$$$	$$
Adverse Reactions	Rare contrast reaction	~~No contrast-related risks~~
Diagnostics	High (current SOC)	Comparable to mpMRI
False Positives	Potentially higher rate of false positives	Fewer false positives, leading to fewer unnecessary biopsies

Ng et al. JAMA 2025 (PRIME trial)

Proposal Letter – Transition from Multiparametric to Biparametric Prostate MRI

Fraser Health Division of Urology

To: Fraser Health Radiology Department Leadership

Subject: Proposal to Transition from Multiparametric to Biparametric Prostate MRI to Improve Prostate Cancer Diagnostic Access

Dear Colleagues,

We are writing on behalf of the Fraser Health urologists to propose a shift from multiparametric prostate MRI (mpMRI) to biparametric prostate MRI (bpMRI) as the standard diagnostic imaging protocol for men at risk of prostate cancer within our health region. This change aims to significantly improve MRI access and reduce wait times for patients under prostate cancer assessment through the Prostate Diagnostic Assessment Program.

Currently, the wait time for mpMRI prostate scans in Fraser Health can exceed one year, causing substantial delays in patient assessment, biopsy scheduling, and timely cancer diagnosis. Many patients experience anxiety, prolonged uncertainty, and in some cases, delayed initiation of appropriate management.

The adoption of bpMRI, which omits the dynamic contrast-enhanced (DCE) sequence, has shown comparable diagnostic accuracy to mpMRI in detecting clinically significant prostate cancer in multiple studies and guidelines, including those from major urological and radiological societies. Key benefits include:

- No requirement for intravenous contrast, reducing patient discomfort, allergic risk, and nursing resource use.
- Shorter scan times (often by 10–15 minutes), enabling additional prostate MRI slots per day.
- Simplified workflow, allowing for potential overnight or after-hours scanning to expand volume

FH Prostate Working Group 2026

- Multidisciplinary group
- How we collectively deal with prostate MRI and biopsies
- How to expand the service
- Adjustment to ordering pathway
- Non-contrast protocols

3) Vision – to improve prostate biopsy



PCP
- Screen PSA/DRE

> 1 mo

Urologist
- Discuss biopsy vs MRI

2-12 mo

Hospital
- Perform MRI

1-2 weeks

Urologist
- Review MRI

2-3 mo

Radiologist
- Perform biopsy

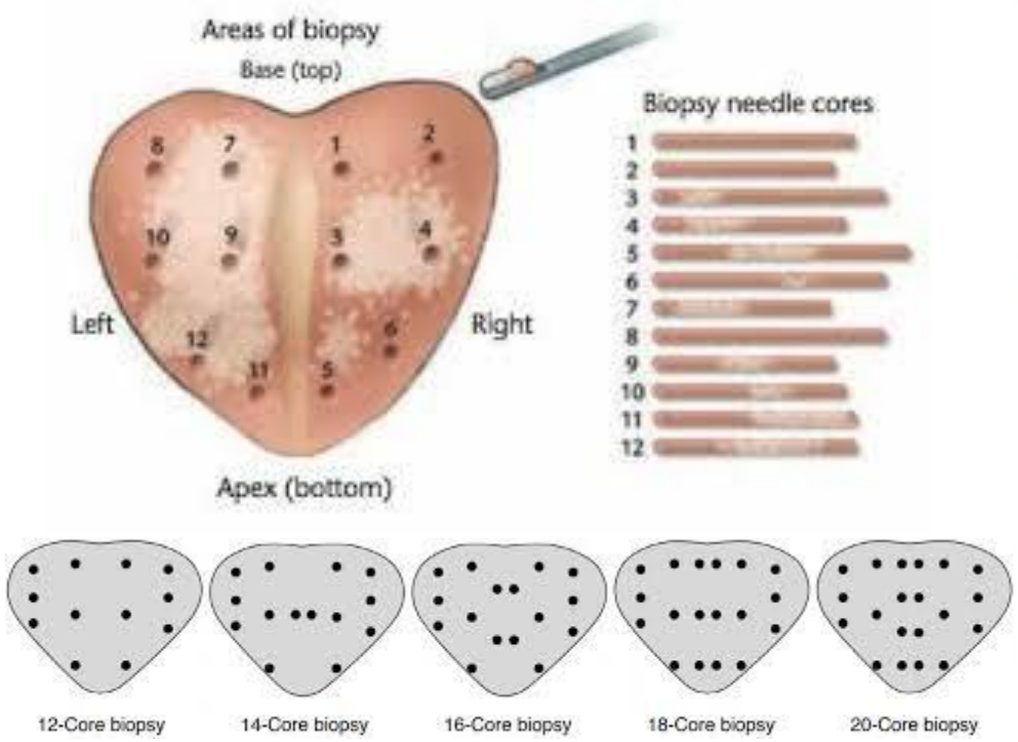
2 weeks

Urologist
- Review biopsy
- Treatment plan

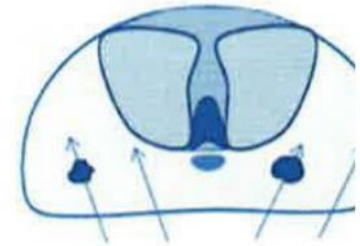
BCCA
- RT discussion

PQI PHYSICIAN QUALITY IMPROVEMENT
An SSC Initiative

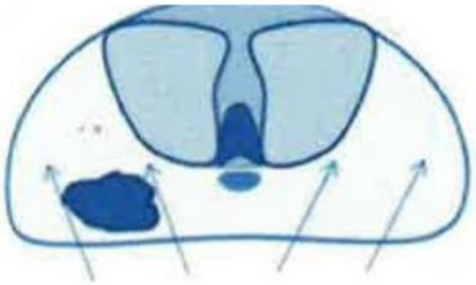
SOC for prostate cancer diagnosis = systematic 12-core transrectal biopsy



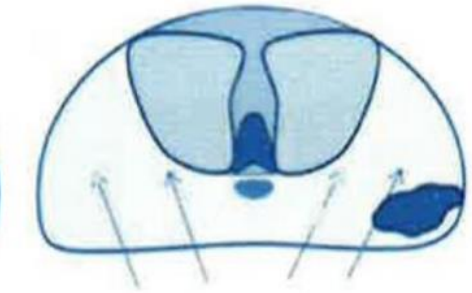
1. **Over detection:** Chance sampling of insignificant cancer: ~ 20%



2. Incorrect Risk stratification: Under sampling of significant cancer: ~ 46%.



3. Missed diagnosis: May miss significant cancer all together: ~ 30%



Case

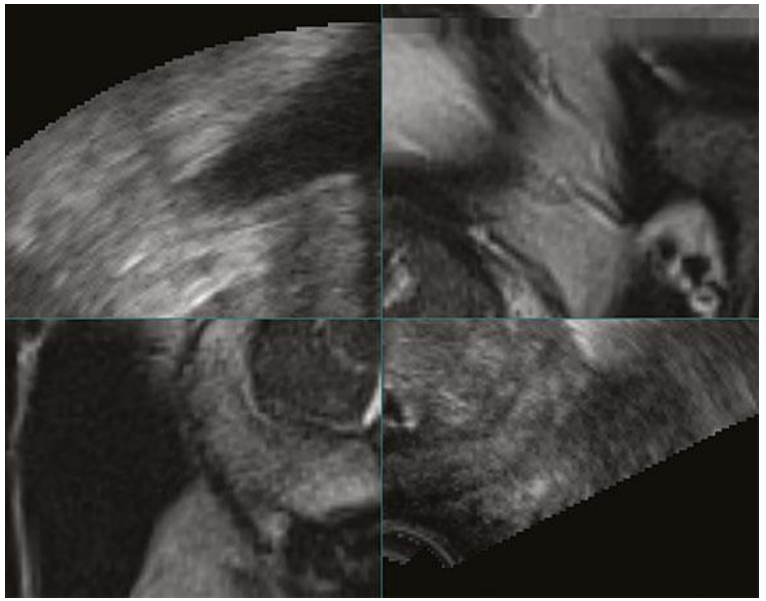
- 59M referred for PSA 4.7
- Offered MRI (deferred by patient)
- 3/25 – TRUS biopsy
- Post-biopsy sepsis requiring hospital admission
- E coli sepsis and DVT
- Prolonged hospital stay (> 1 month)
- Benign pathology

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 MAY 10, 2018 VOL. 378 NO. 19

MRI-Targeted or Standard Biopsy for Prostate-Cancer Diagnosis

V. Kasivisvanathan, A.S. Rannikko, M. Borghi, V. Panebianco, L.A. Mynderse, M.H. Vaarala, A. Briganti, L. Budäus, G. Hellawell, R.G. Hindley, M.J. Roobol, S. Eggener, M. Ghei, A. Villers, F. Bladou, G.M. Villeirs, J. Virdi, S. Boxler, G. Robert, P.B. Singh, W. Venderink, B.A. Hadaschik, A. Ruffion, J.C. Hu, D. Margolis, S. Crouzet, L. Klotz, S.S. Taneja, P. Pinto, I. Gill, C. Allen, F. Giganti, A. Freeman, S. Morris, S. Punwani, N.R. Williams, C. Brew-Graves, J. Deeks, Y. Takwoingi, M. Emberton, and C.M. Moore, for the PRECISION Study Group Collaborators*

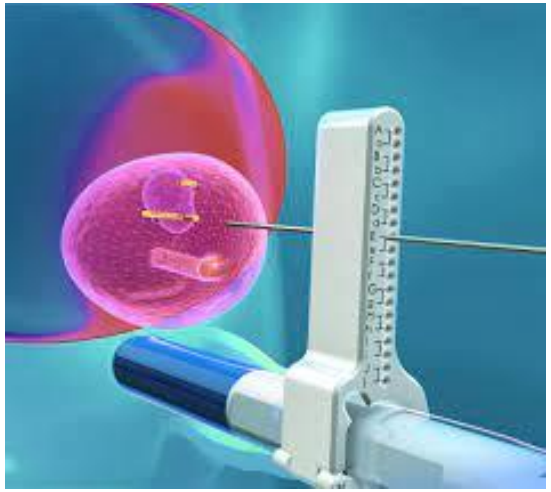


- 500 men randomized to MRI + targeted biopsy of PIRADS 3-5 lesions vs systematic TRUS biopsy
  - 12% more clinically significant cancers
  - 13% less clinically insignificant cancers
  - 28% less unnecessary biopsies

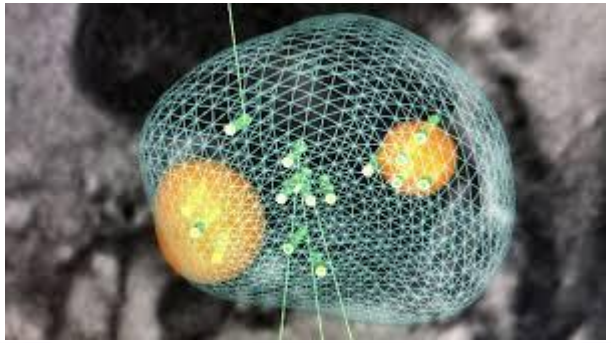
Precision NEJM 2018

MRI-US fusion allows for precise targeting of tumors







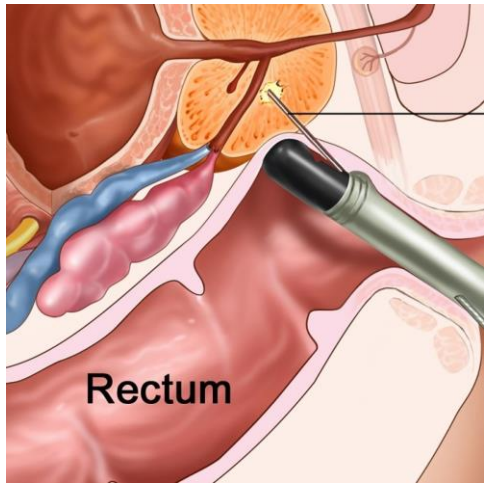


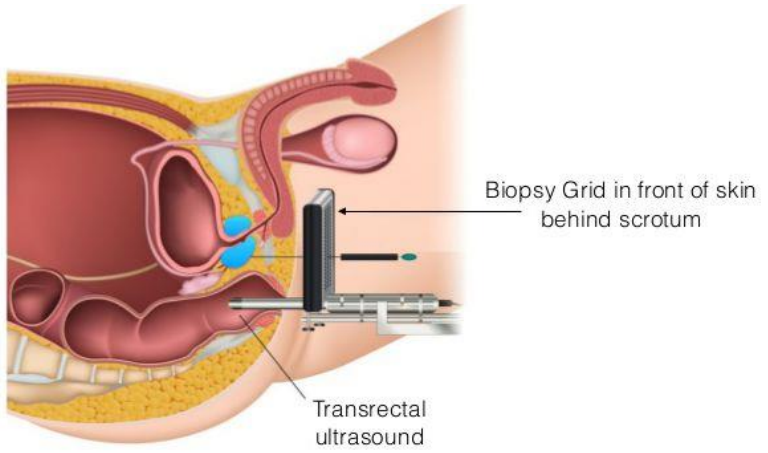


KOELIS

Transperineal biopsy allows for an almost 0% risk of infection

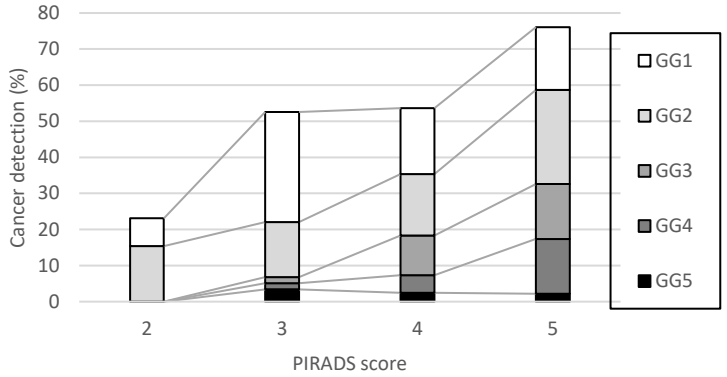
Transrectal (TR)	Transperineal (TP)
Local anesthesia, often done in office	May require general anesthesia
Requires antibiotic prophylaxis	Does not require antibiotic prophylaxis
Risk of sepsis (2-4%)	Minimal risk of sepsis
Increasing rate of antibiotic resistance	Risk of urinary retention





Bryant Lancet Oncology 2025 (TRANSLATE)

Our series of MRI/US fusion TP over 200 patients = 0% sepsis rate



Complications	No. (%)
Sepsis	0 (0)
UTI	0 (0)
Fever	1 (0.5)
Retention	11 (5.5)
Hematochezia	0 (0)
Hematoma	5 (2.5)
Hematuria	24 (12)
Hematospermia	3 (1.5)

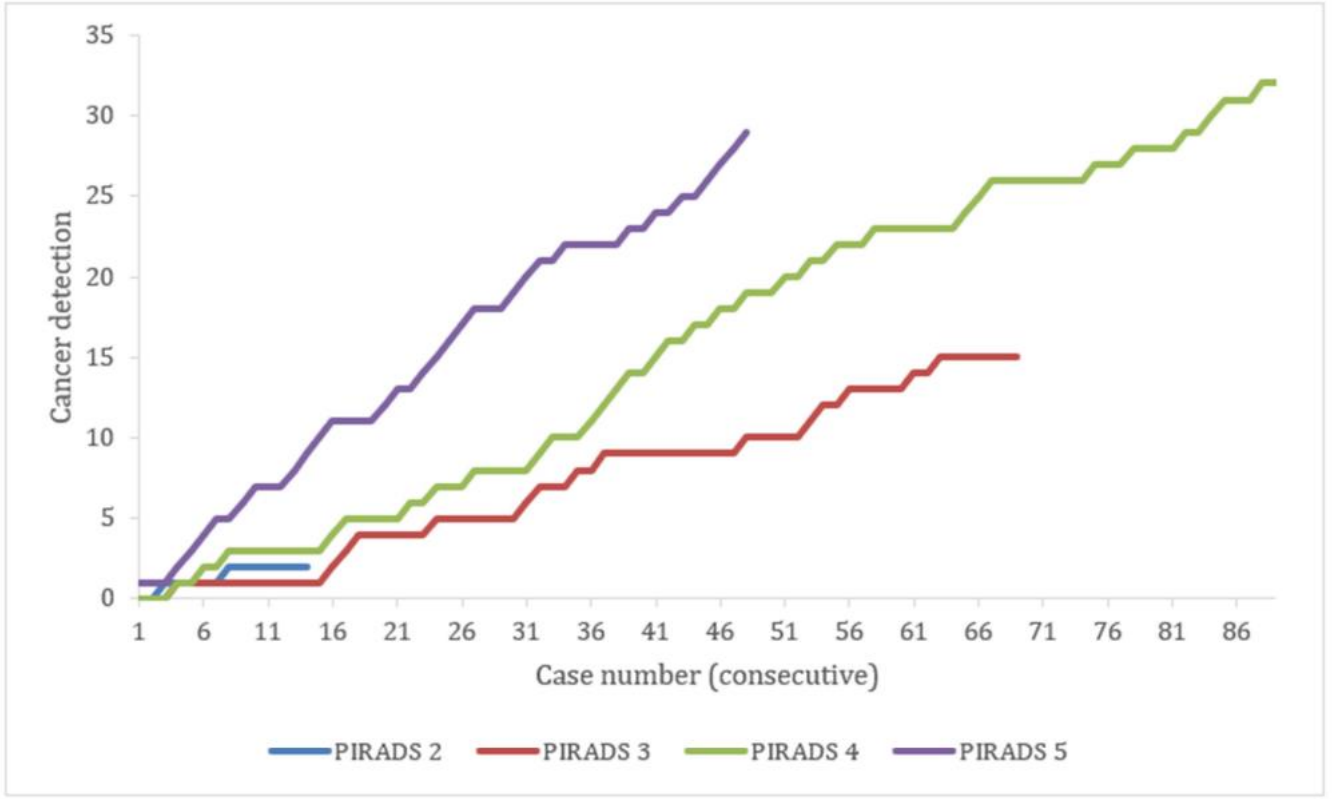


Figure 1. Cancer detection vs case number stratified by PIRADS score.

Wong et al AUA 2020

RCT = TP has greater csPCa detection vs TRUS

	LATP (n=562)		TRUS (n=564)	Odds ratio (95% CI)	p value
Gleason Grade Group ≥2 prostate cancer detection					
Modified ITT population*	329/547 (60·1%)	>	294/540 (54·4%)	1·32 (1·03–1·70)	0·031
Per-protocol population†	323/536 (60·3%)		273/509 (53·6%)	1·38 (1·06–1·78)	0·016

Infection rates similar

=

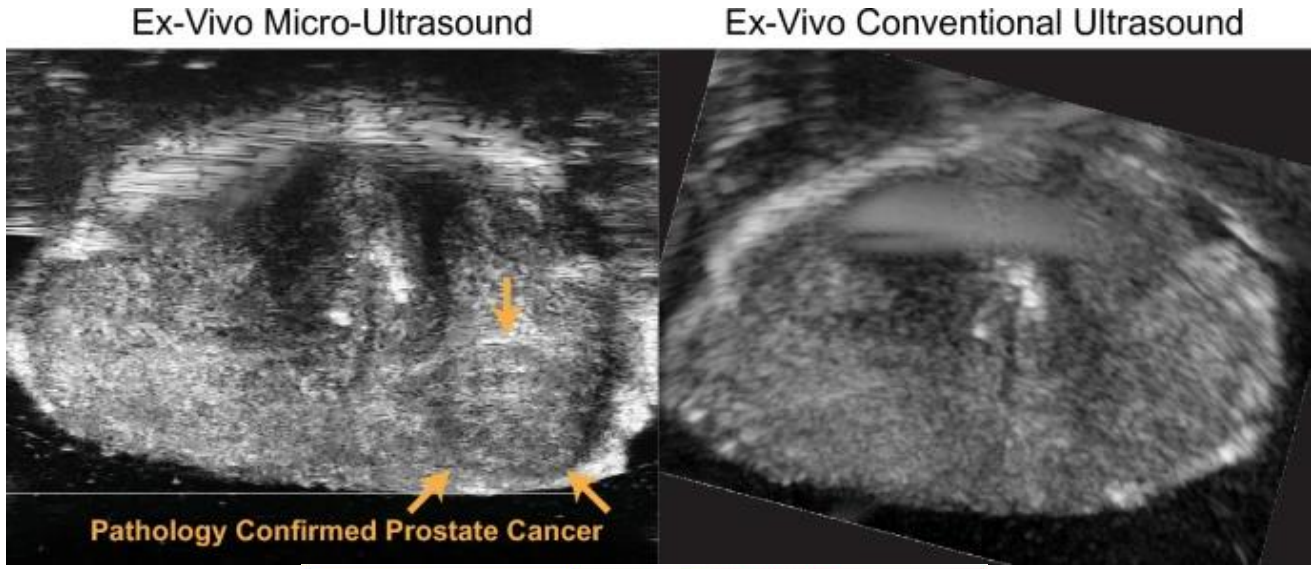
	LATP (n=562)	TRUS (n=564)	Odds ratio (95% CI)
Primary definition*			
By 7 days	1 (<1%)	7 (1%)	0·14 (0·02–1·15)
By 35 days	2 (<1%)	9 (2%)	0·22 (0·05–1·01)
By 4 months	6 (1%)	13 (2%)	0·45 (0·17–1·20)
Secondary definition†			
By 7 days	54 (10%)	72 (13%)	0·73 (0·5–1·06)
By 35 days	85 (15%)	102 (18%)	0·81 (0·59–1·11)
By 4 months	113 (20%)	120 (21%)	0·93 (0·7–1·25)

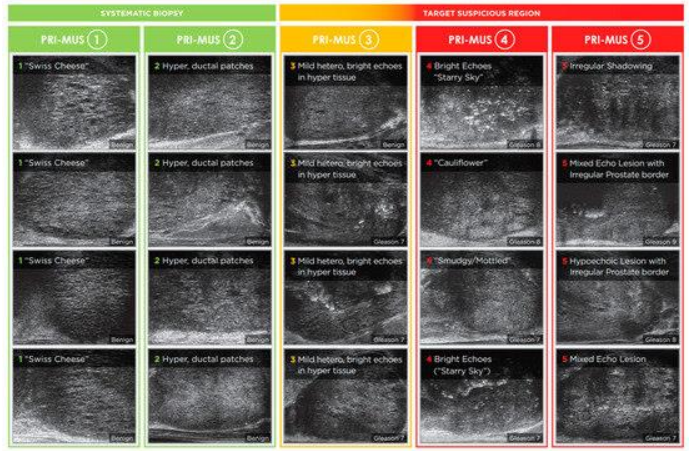
Bryant Lancet Oncology 2025 (TRANSLATE)

US technology is improving… PRIMUS



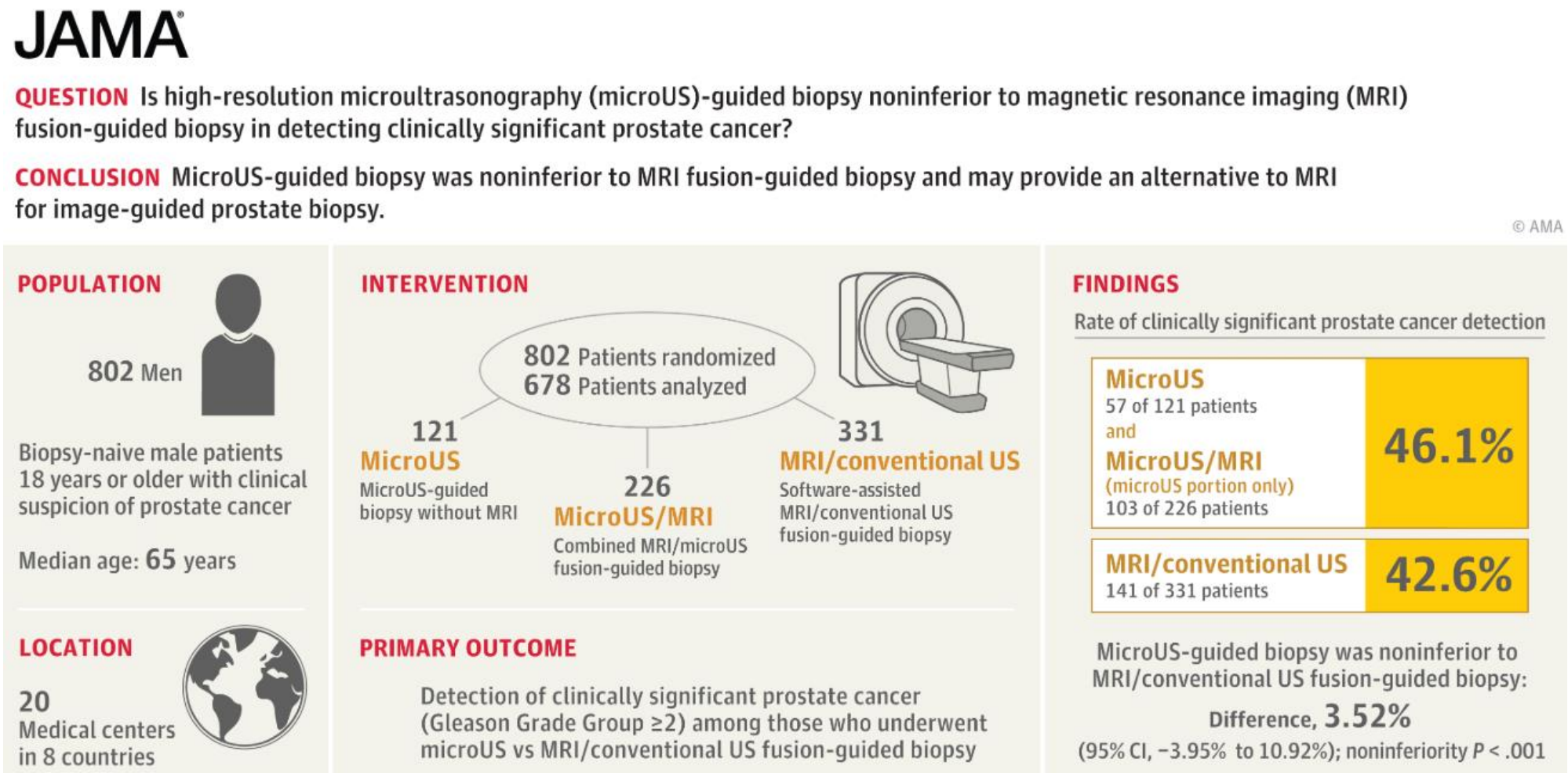
5-10MHz





Pensa et al Nature 2024

If we can see lesions on US, can we skip MRI? Yes!



Pensa et al Nature 2024

TP biopsy metrics at JPOC since Dec 2025

- N = 15
- All under local anesthesia with plexus block
- Sepsis = 0%
- Cancer detection =



SURREY HOSPITALS FOUNDATION™



4) Vision – to improve surgical outcomes



PCP
- Screen PSA/DRE

> 1 mo

Urologist
- Discuss biopsy vs MRI

2-12 mo

Hospital
- Perform MRI

1-2 weeks

Urologist
- Review MRI

2-3 mo

Radiologist
- Perform biopsy

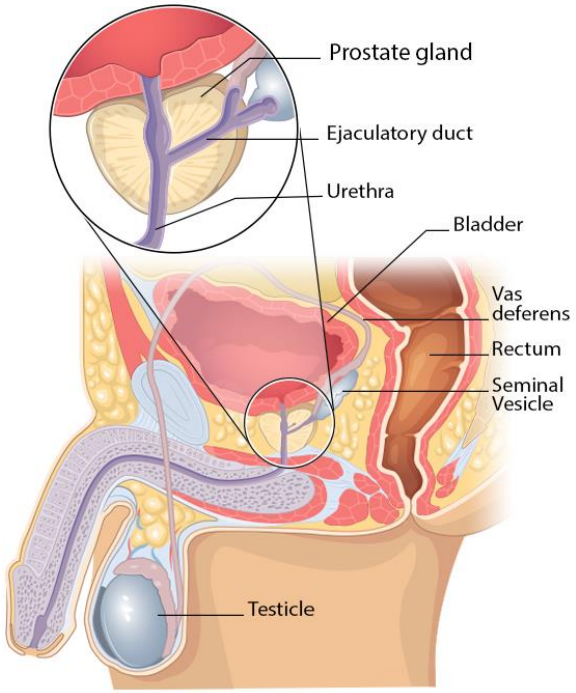
2 weeks

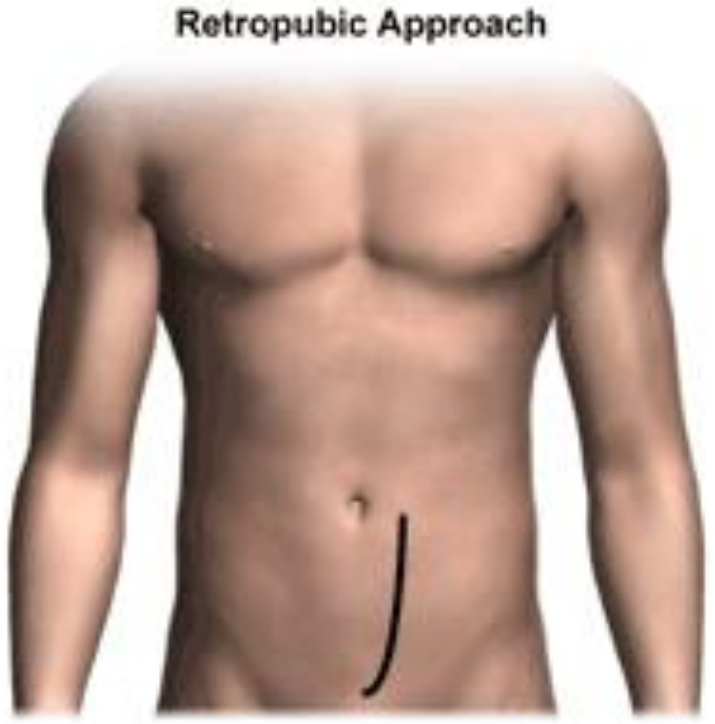
Urologist
- Review biopsy
- Treatment plan

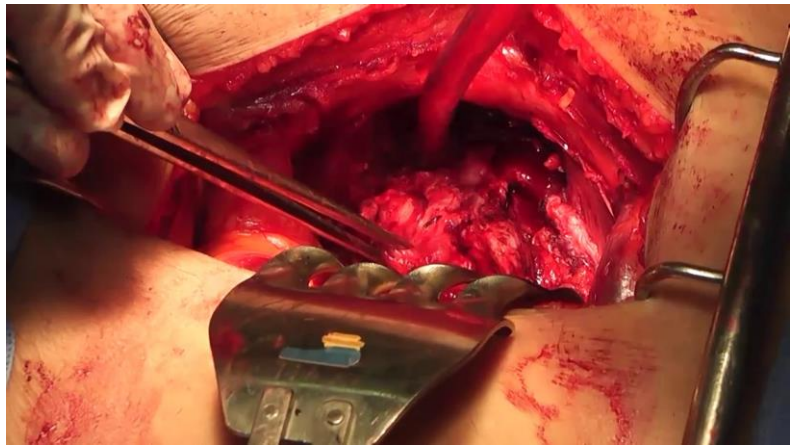
BCCA
- RT discussion

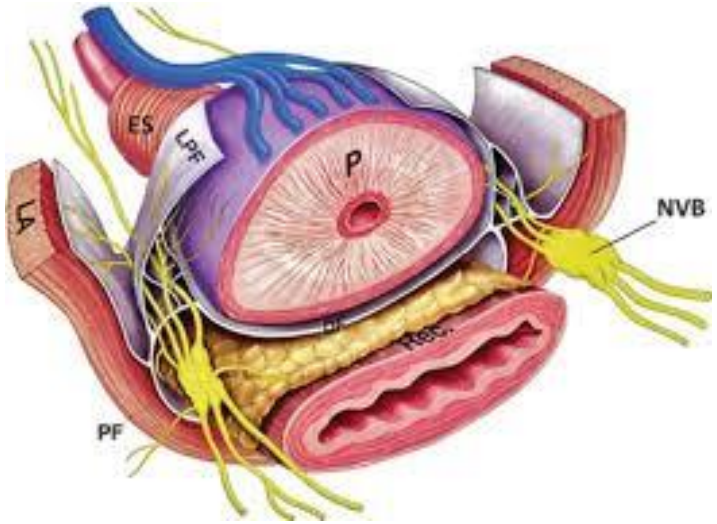
PQI PHYSICIAN QUALITY IMPROVEMENT
An SSC Initiative

Open radical prostatectomy is a complicated surgery that has important functional outcomes

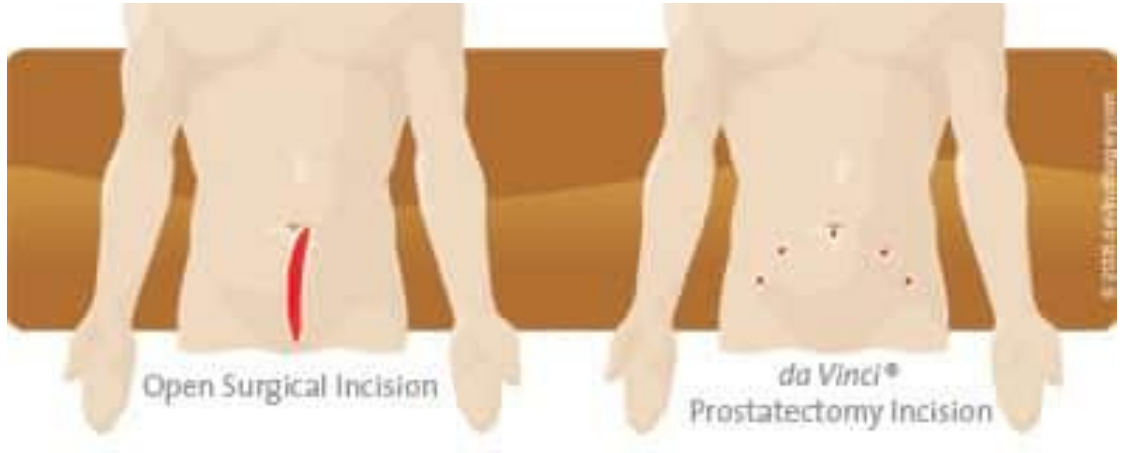








Minimally invasive surgery has multiple benefits to patients

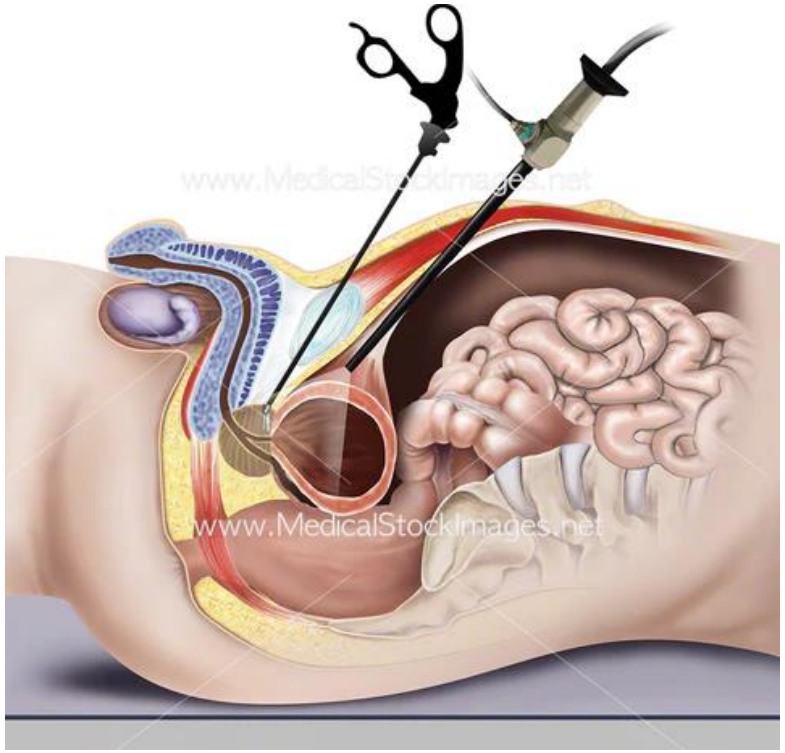


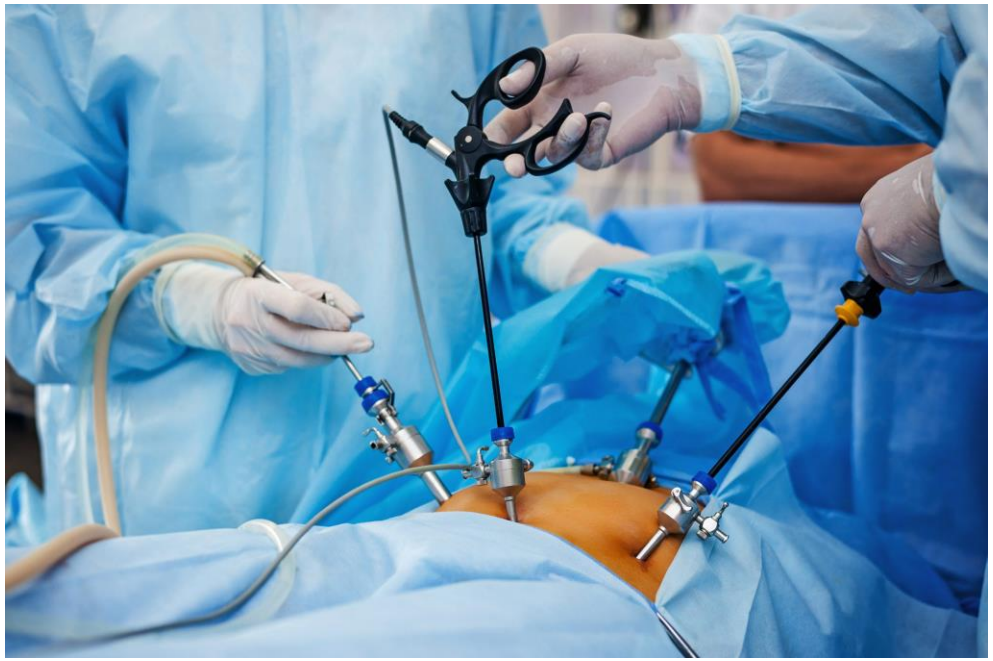
- Smaller incisions
- Less pain
- Less blood loss
- Less scarring
- Shorter hospital stay
- Faster recovery





However, laparoscopy is a technically challenging surgery and few surgeons are technically proficient in this





However, laparoscopy is a technically challenging surgery (learning curve for laparoscopic prostatectomy is >250 cases)

The Learning Curve for Laparoscopic Radical Prostatectomy: An International Multicenter Study

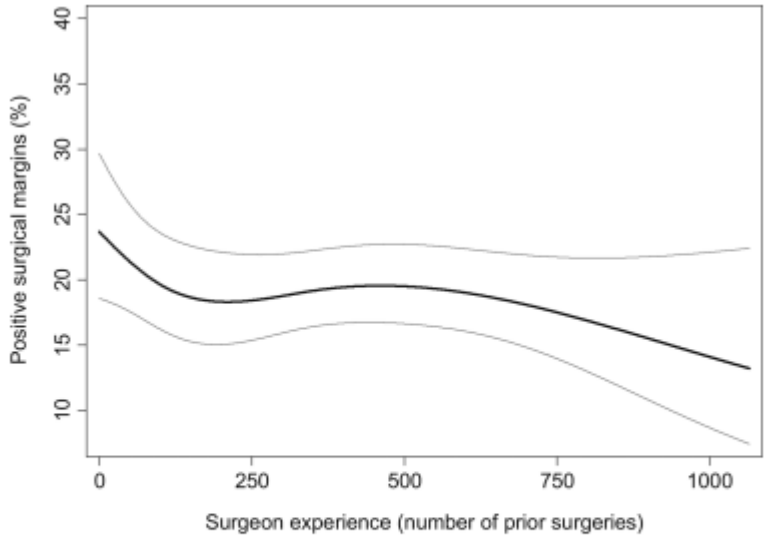
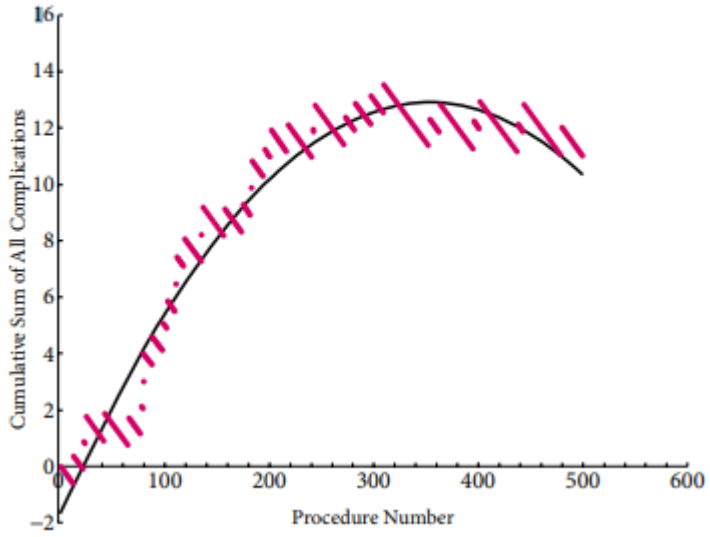


Figure 1.
Surgical learning curve for SMs with LRP controlling for preoperative PSA, pathological Gleason score and pathological stage. X-axis represents number of cases before incident case, excluding prior open cases. Gray lines represent 95% CI.

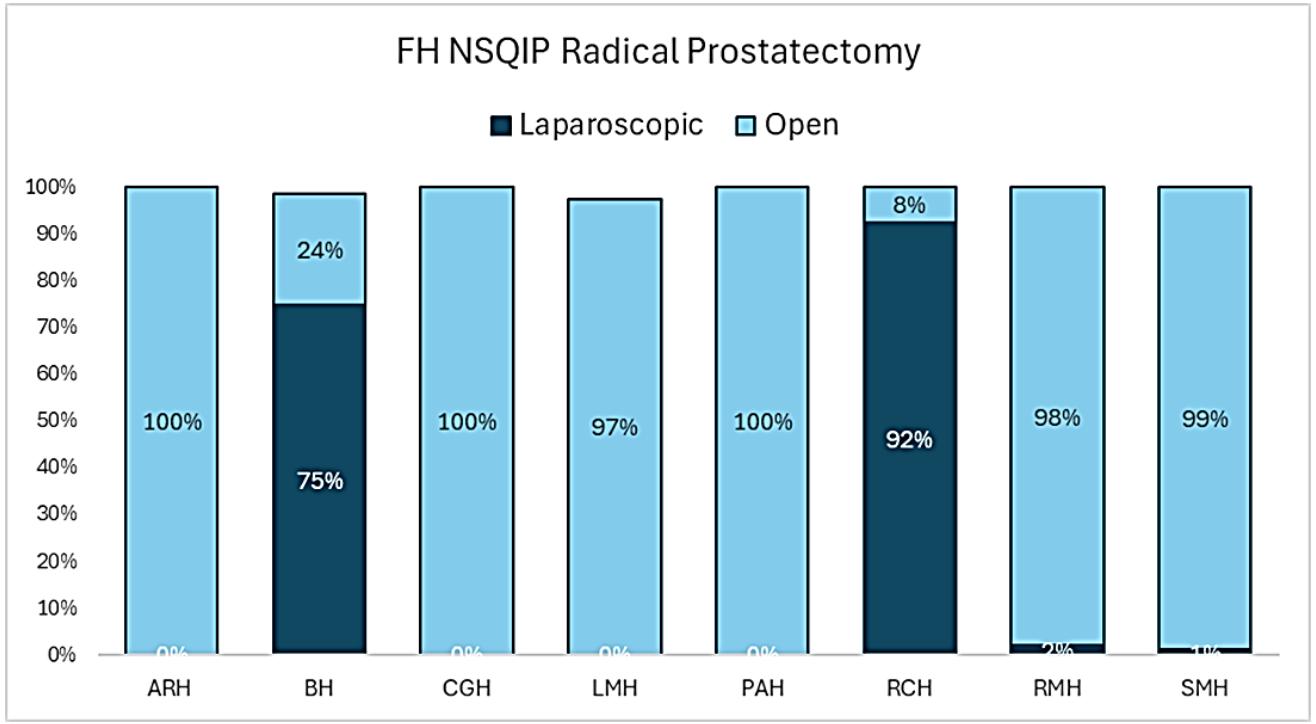
The learning curve for laparoscopic extended pelvic lymphadenectomy for intermediate- and high-risk prostate cancer: implications for compliance with existing guidelines

Christopher G. Eden, Evangelos Zacharakis and Simon Bott*

Fig. 3 The cumulative sum of all complications using a competence level of 0.95 (Pearson = 0.96).



PQI PHYSICIAN QUALITY IMPROVEMENT
Specialist Services Committee

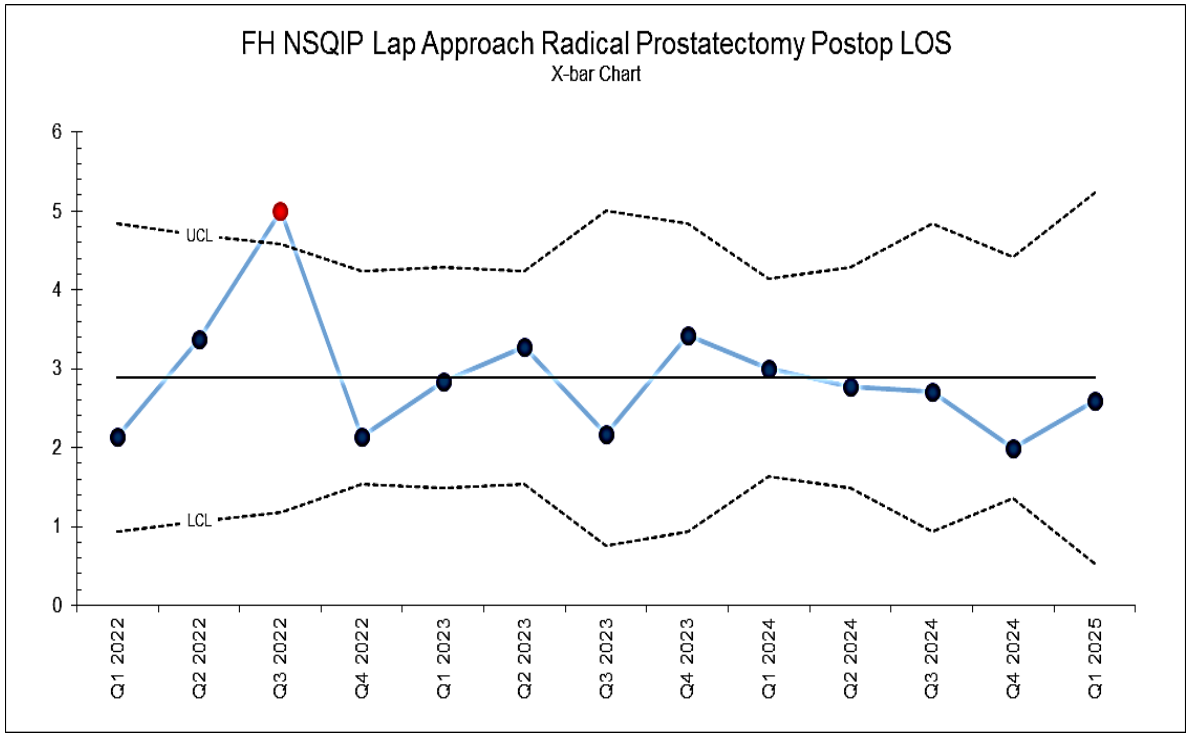


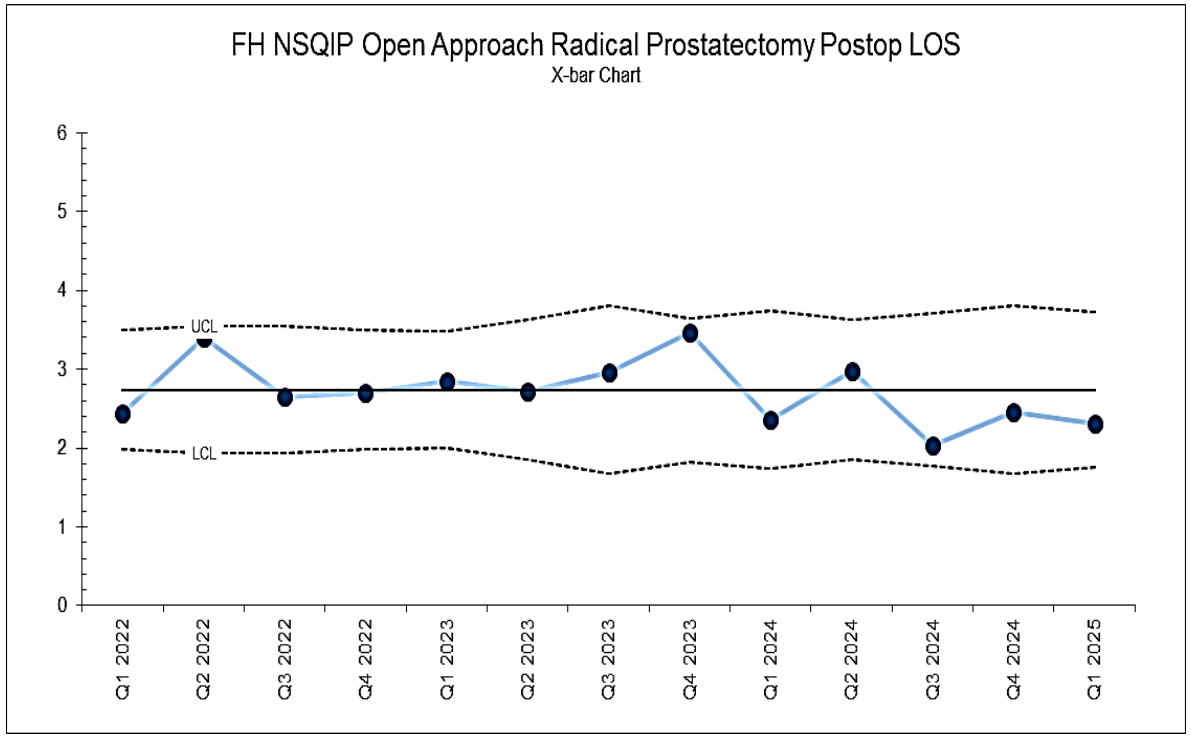
FH Clinical Quality & Patient Safety
Exceptional quality every day
for every person, everywhere

fraserhealth
Better health. Best in health care.

ACS NSQIP PARTICIPANT
A QUALITY PROGRAM of the AMERICAN COLLEGE OF SURGEONS

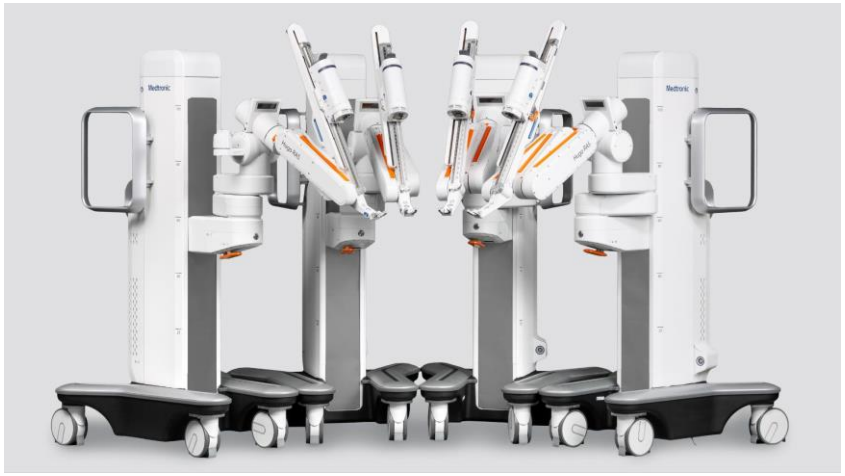
Length of stay = lap is similar to open…





Robotics is the future to better surgery





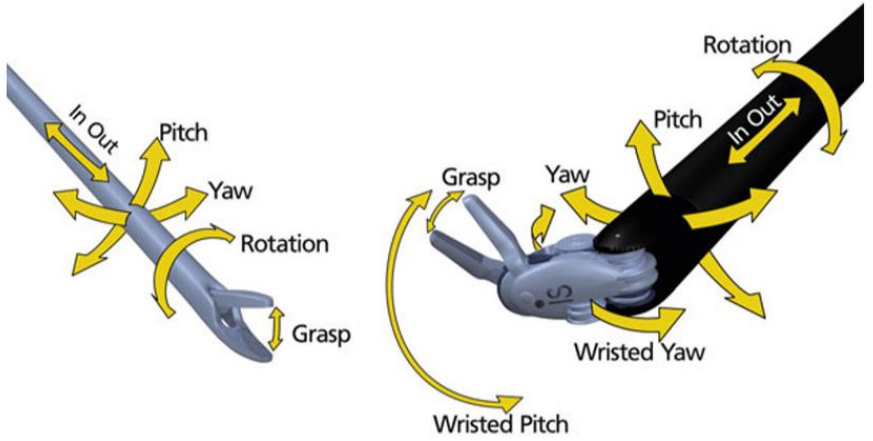


Robotics is the future to better surgery

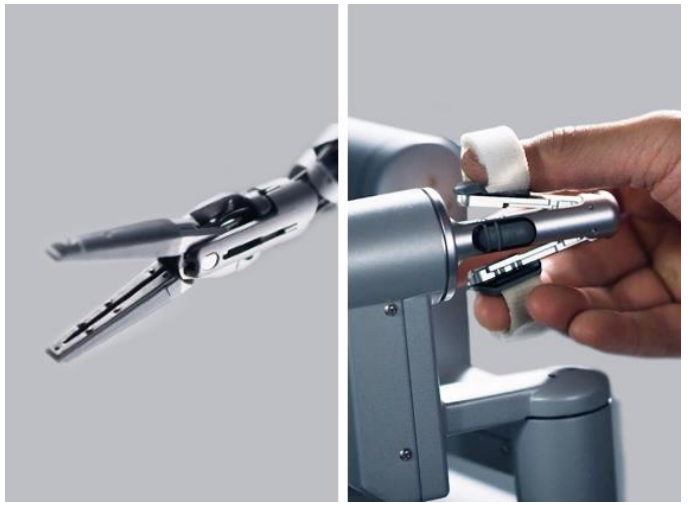


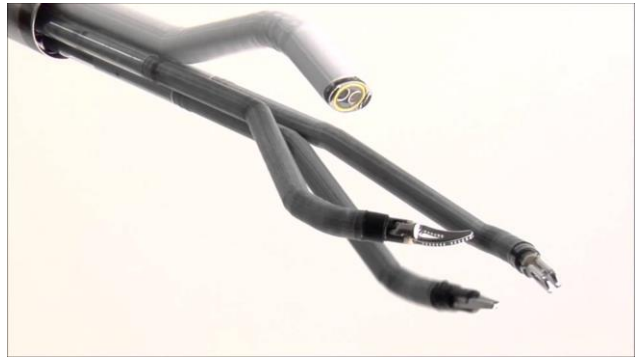


3D Vision









Endowrist Technology

Learning curve for robotic prostatectomy is <100 cases

Positive surgical margin rates during the robot-assisted laparoscopic radical prostatectomy learning curve of an experienced laparoscopic surgeon

Anthony F. Adili, MBBCH; Julia Di Giovanni, MBBCH; Emma Kolesar; Nathan C. Wong, MD; Jen Hoogenes; Shawn Dason, MD, FRCSC; Bobby Shayegan, MD, FRCSC

Division of Urology, McMaster University, Hamilton, ON, Canada

Table 3. Pathological characteristics of study participants

Property	Q1	Q2	Q3	Q4	Overall
Gleason 6 (n)	23	19	19	15	19
Gleason 7 (n)	67	70	65	68	67.5
Gleason 8–10 (n)	7	9	11	12	9.8
ECE (n)	39	29	44	41	38.3
SVI (n)	11	8	17	10	11.5
N1 disease (n)	4	2	4	2	3
Prostate weight (g)	48.4	52.8	52.5	55.1	52.2
Positive margins (n)	29	15	19	19	20.5
T3 positive margins (n)	17	8	16	12	13.3
T2 positive margins (n)	12	7	3	7	7.3
Apical margins (n)	18	10	8	7	10.8

No statistically significant differences were noted between quartiles. ECE: extracapsular extension; SVI: seminal vesicle invasion.

Table 4. All-stage, T3, and T2 margin rates compared between quartile 1 and the most recent quartile (Q4)

Property	All-stage	T3	T2
Q1 positive margins	29	17	12
Q4 positive margins	19	12	7
Odds ratio	1.74	1.45	1.69
95% confidence interval	0.90–3.40	0.62–3.40	0.62–4.60
p	0.1	0.3	0.3

Surgical simulation is safe and effective

A randomized comparison of two robotic virtual reality simulators and evaluation of trainees' skills transfer to a simulated robotic urethrovesical anastomosis task

Jen Hoogenes[a,*] Nathan Wong[a,*], Badr Al-Harbi[a], Kevin S. Kim[a], Saahil Vij[a], Elisa Bolognone[a], Mackenzie Quantz[b], , Yanbo Guo[a], Bobby Shayegan[a] Edward D. Matsumoto[a]

Table 2. GEARS and RACE scores for final UVA task in the OR comparing dV-Trainer and dVSSS

		GEARS (/30)	*p*-value	Race (/30)	*p*-value
MS	dV-T	19.4		19.1 ± 5.4	
	dVSSS	21.3	0.33	22.5 ± 4.2	0.05
JR	dV-T	16.1		16.2 ± 5.4	
	dVSSS	21.9	**<0.01**	22.5 ± 5.3	**<0.01**
SR	dV-T	25.1		26.3 ± 3.7	
	dVSSS	22.0	0.14	24.22 ± 2.1	0.15

Techniques: Utility of a 3D printed bladder model for teaching minimally invasive urethrovesical anastomosis

Nathan C. Wong, MD[1]; Jen Hoogenes, PhD(c)[1]; Yanbo Guo, MD[1]; Mackenize A. Quantz, MD[2]; Edward D. Matsumoto, MD[1]

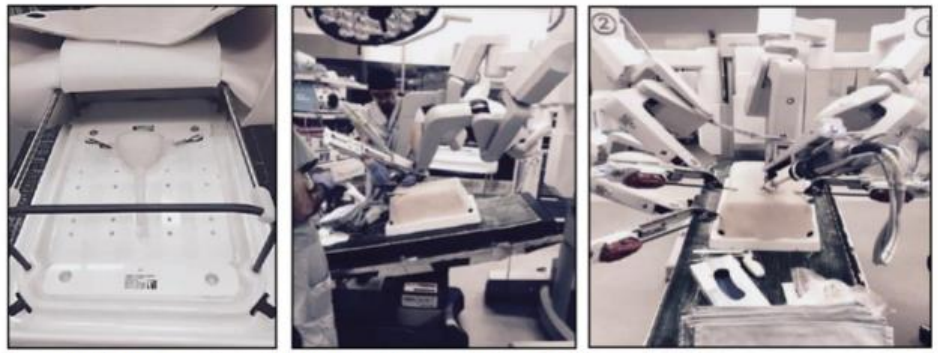
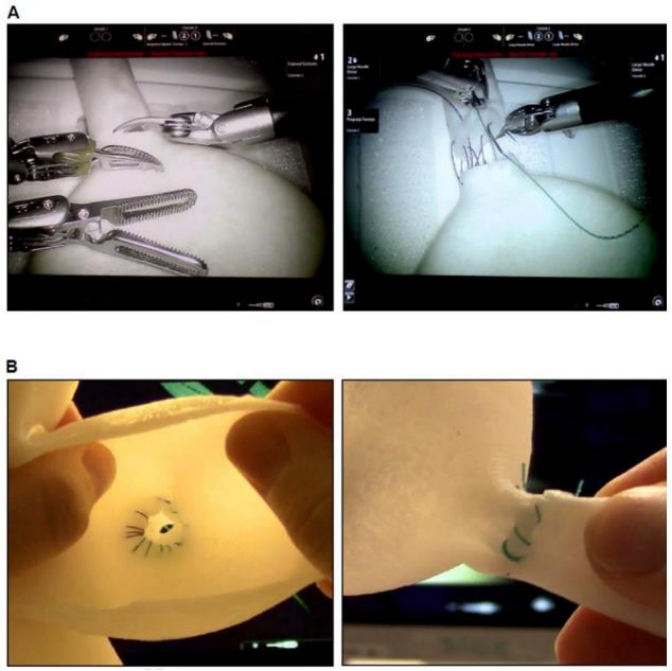
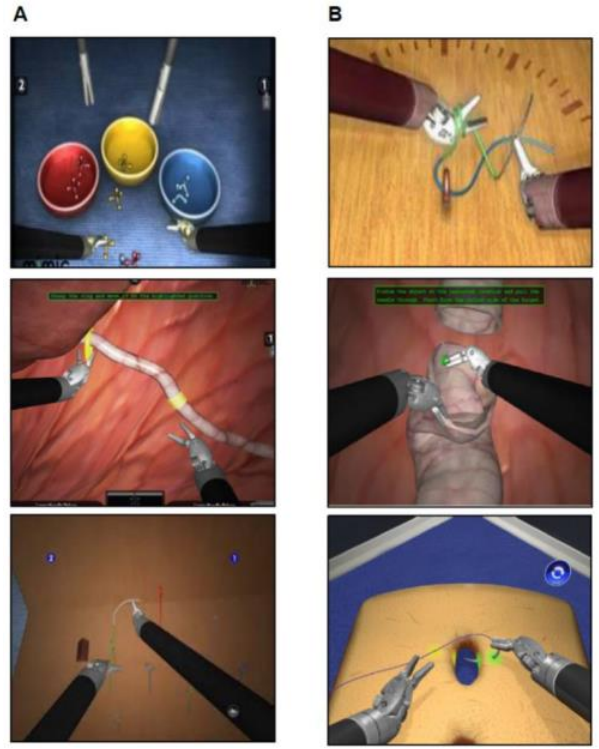


Figure 1_Hoogenes et al._FINAL EDITED_bestsetConverted.png





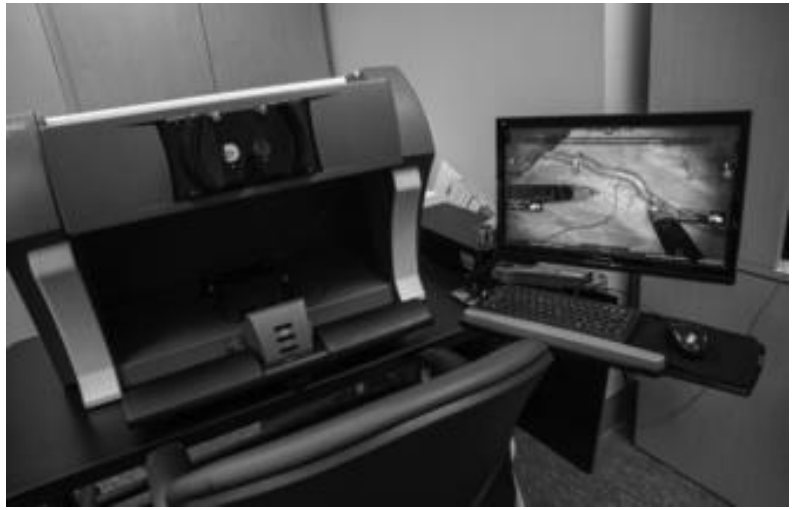
Virtual reality surgical simulation is a safe and effective way to teach robotic surgery to learners

Development, implementation, and evaluation of a competency-based didactic and simulation-focused boot camp for incoming urology residents: Report of the first three years

Yuding Wang, MD[1]; Jen Hoogenes, MS, MSc, PhD[1]; Roderick Clark, MD[2]; Nathan C. Wong, MD[1,3]; Udi Blankstein, MD[1]; Harkanwal Randhawa, MD[1]; Catherine Lovatt, MD[1]; Kevin Kim, MSc, MD/PhD[c][1,4]; Noah Stern, MD[2]; Jeffrey Law, MD[2]; Samir Sami, MD[2]; Michael Uy, MD[1]; Courtney Moore, MSc, MBChB[c][1,4,5]; Bobby Shayegan, MD[1,6]; Anil Kapoor, MEng, MD[1,6]; Shahid Lambe, MD[1,6]; Timothy Davies, MD[1,6]; Sumit Dave, MSc, MCh, MD[2]; Alp Sener, MD, PhD[2]; Edward D. Matsumoto, MEd, MD[1,6]







OPINION

Why we need robots in our operating rooms



Dr. Nathan Wong and a team of skilled health technicians at St. Joseph's Hospital in Hamilton support a robot assisted prostatectomy on Thursday, July 27, 2017.



THE GLOBE AND MAIL

We can also use AI to improve patient care

BJUI
BJU International

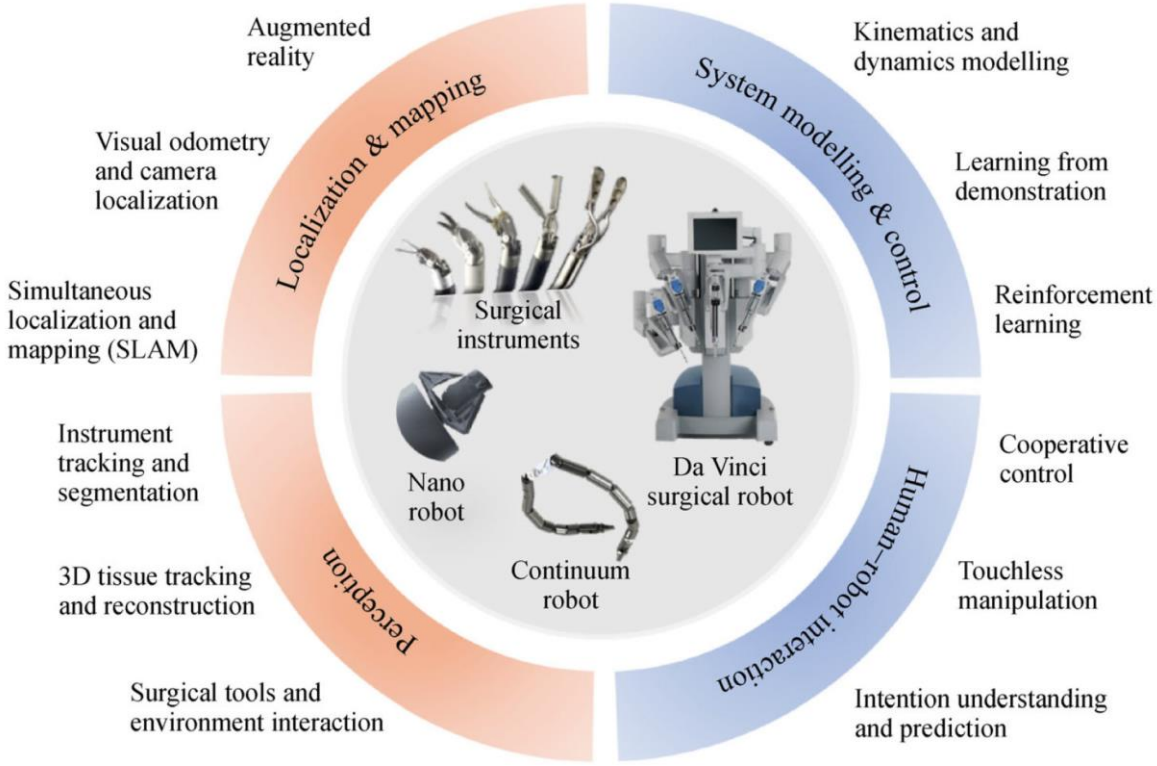
Urological Oncology

Use of machine learning to predict early biochemical recurrence after robot-assisted prostatectomy

Nathan C. Wong ✉, Cameron Lam, Lisa Patterson, Bobby Shayegan

Patient centered care for prostate cancer—how can artificial intelligence and machine learning help make the right decision for the right patient?

Nathan C. Wong, Bobby Shayegan



There is a paucity of robotics in Western Canada providing RCH an opportunity to advance patient care in our community



Over 42,500

Canadians have been treated with robotic surgery since 2003

31 Da Vinci Systems

in **5** Provinces

PHSA Surgical Robotics RFP 2023

VICTORIA HOSPITALS FOUNDATION

Giving makes us all better

KGH FOUNDATION

LGH LIONS GATE HOSPITAL FOUNDATION







Robot wars: The battle for robotic surgery at community hospitals across Canada

Brian Yang[1], Troy Sitland[2], Nathan C. Wong[3]

[1]Royal Columbian Hospital, Fraser Health, New Westminster, BC, Canada; [2]Moncton Hospital, Moncton, NB, Canada; [3]Department of Urologic Sciences, University of British Columbia, Vancouver, BC, Canada

BC Urology Robotics Metrics

- OR time (skin to skin)
- Length of stay
- Margin status (stratified by T stage)
- Complications
- ER visits



ROYAL COLUMBIAN
Hospital Foundation

Thank you. Questions?

@NathanCWongMD

