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CONFERENCE

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Synergies in action: The power of collaboration

From a patient's concern to a validated screening tool: Multi-Agency collaboration and the ClarityDX Prostate story in Alberta

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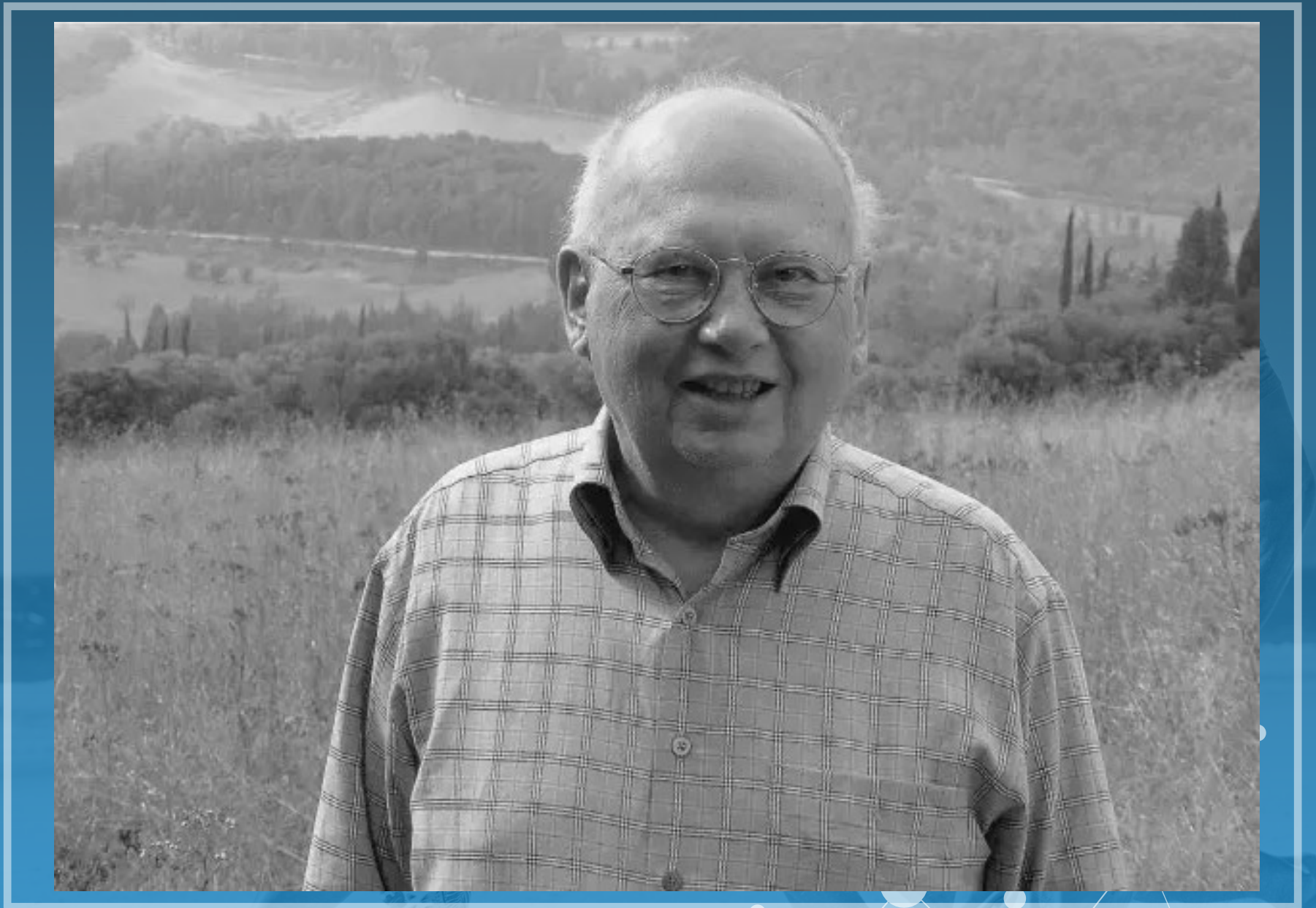
CANADIAN COLLEGE OF
HEALTH LEADERS



COLLÈGE CANADIEN DES
LEADERS EN SANTÉ

Frank Sojonky

Oct. 4, 1928 –
Oct. 15, 2012





ALBERTA
PROSTATE CANCER
RESEARCH INITIATIVE
knowledge | action | impact

The development of biomarkers to predict the outcome of prostate cancer is our **greatest unmet clinical need.**

John D. Lewis Research Group
Bird Dogs Chair in Translational Oncology
Professor, Department of Oncology
University of Alberta

What is APCaRI?

The Alberta Prostate Cancer Research Initiative (APCaRI) is a multi-disciplinary team of:

- Prostate cancer researchers
- Physicians & Clinical research scientists
- Patients
- Industry partners and
- Not for profit networks
- Hospitals & Diagnostic labs



We are working together!

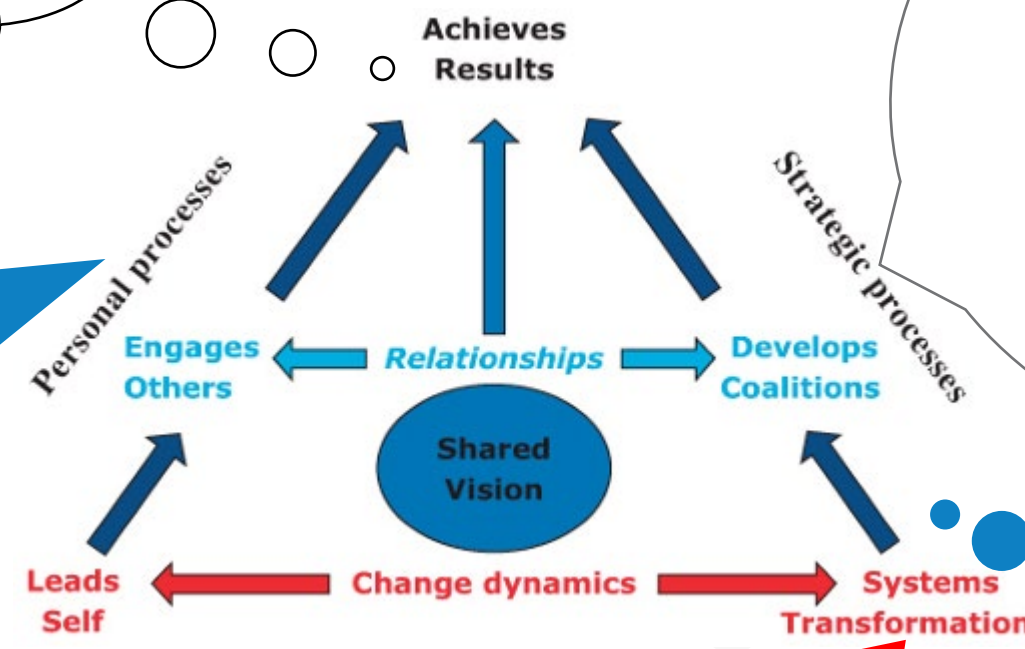
Researchers and Clinicians to positively impact the outcomes and quality of life of those living with prostate cancer by accelerating the translation of new research ideas from the laboratory to the clinic.

ClarityDX[®] prostate

Improved patient experience, better health outcomes, at a lower cost with clinician well-being and health equity

APCaRI – primary care providers, urologists, patients, nurses, researchers, academics
 Alberta Health – Innovation and Business Intelligence Team, Evidence Decision Support Program
 Alberta Ministry of Health

Visionary Leaders
 Leveraging connections
 Annual APCaRI Conference
 Patient testimonials
 49 publications from research



Alberta Province-wide Health Technology Evaluation Trial / Clinical Utility Study to assess clinical decision making, health outcome metrics, systems utilization

To inform and define the future patient-centred clinical pathway for prostate cancer risk stratification

ClarityDX Prostate was developed and validated in a study that included 3,488 patients from across the world



Kipnes Urology Centre
Edmonton, AB, CANADA



Prostate Cancer Centre
Calgary, AB, CANADA



Baltimore, MD, USA



Los Angeles, CA, USA

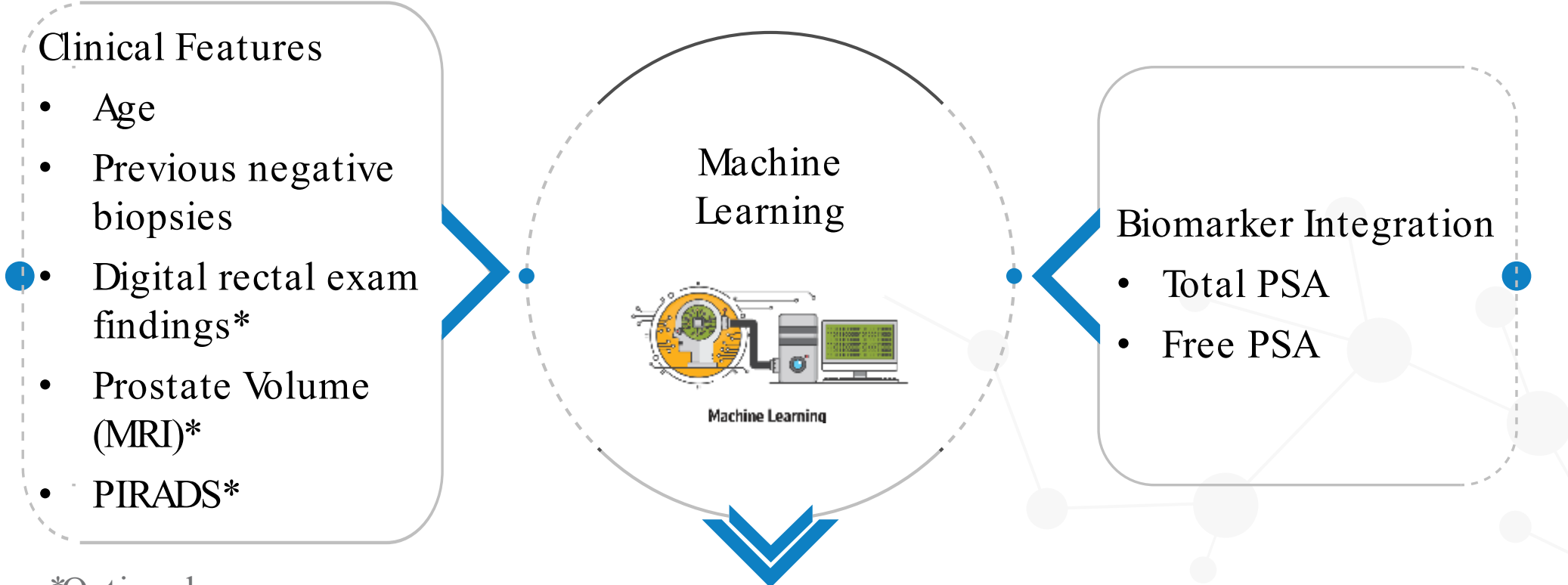


Thomayer University Hospital
Prague, Czech Republic



ClarityDX Prostate uses an optimized machine learning model to accurately predict clinically significant prostate cancer

Our Machine Learning Pipeline significantly improves predictive power



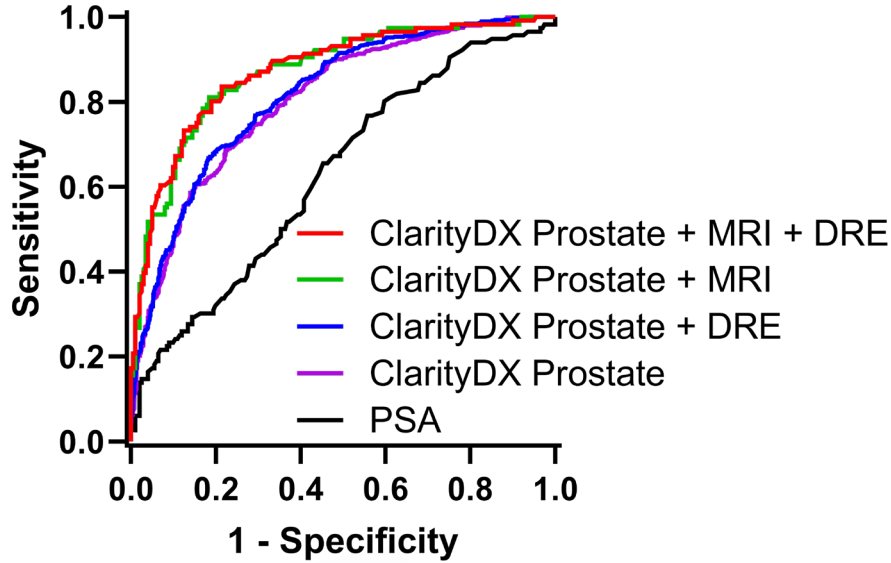
*Optional

Risk score
Probability of clinically significant ($GG \geq 2$) prostate cancer

In a 3,448-patient clinical study, we found that ClarityDX Prostate is 3-4x more accurate than PSA alone



Predicting grade group ≥ 2 prostate cancer



	AUC	Sens	Spec	PPV	NPV
ClarityDX Prostate	0.80	95	32	52	89
ClarityDX Prostate + DRE	0.82	95	35	54	94
ClarityDX Prostate + MRI	0.87	95	45	50	94
ClarityDX Prostate +DRE+MRI	0.87	95	47	51	94
PSA	0.63	95	12	38	80

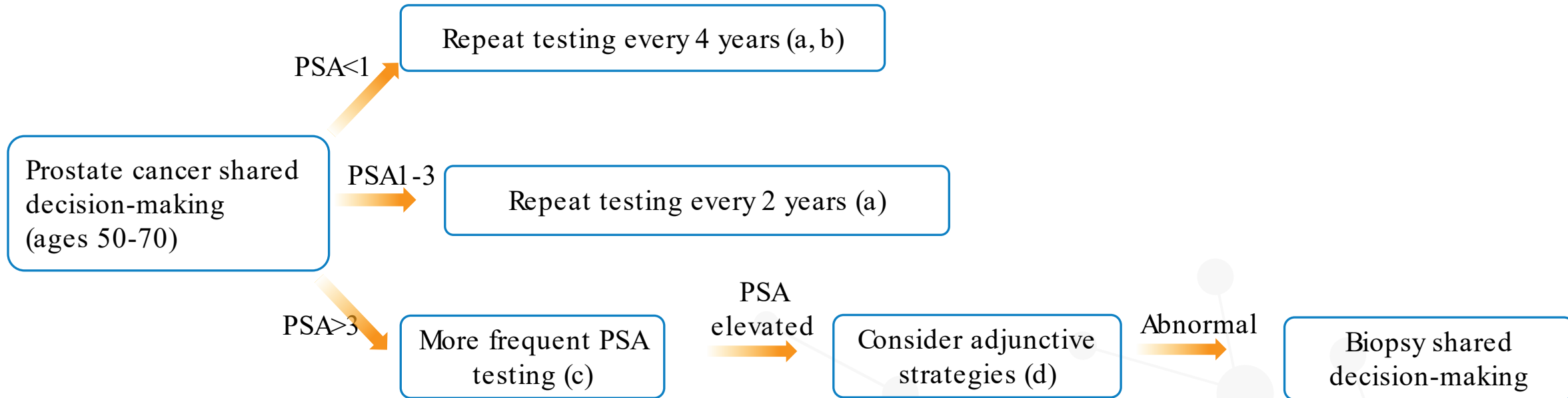
Using ClarityDX Prostate will reduce the number of unnecessary prostate biopsies by up to 47%

npj | digital medicine
 Published in partnership with Seoul National University Bundang Hospital
<https://doi.org/10.1038/s41746-024-01167-9>
Development of an effective predictive screening tool for prostate cancer using the ClarityDX machine learning platform
 M. Eric Hyndman^{1,2,12}, Robert J. Paproski^{2,12}, Adam Kinnaird^{2,4}, Adrian Fairey^{2,5}, Leonard Marks², Christian P. Pavlovich⁶, Sean A. Fletcher⁶, Roman Zachoval⁷, Vanda Adamcova⁷, Jiri Stejskal⁷, Armen Aprikyan⁸, Christopher J. D. Wallis^{9,10,11}, Desmond Pink², Catalina Vasquez², Perrin H. Beatty² & John D. Lewis^{2,4}

THE LANCET
 Digital Health

Reducing prostate biopsies

What if we could improve the accuracy of the PSA test to only biopsy those men who really need it?

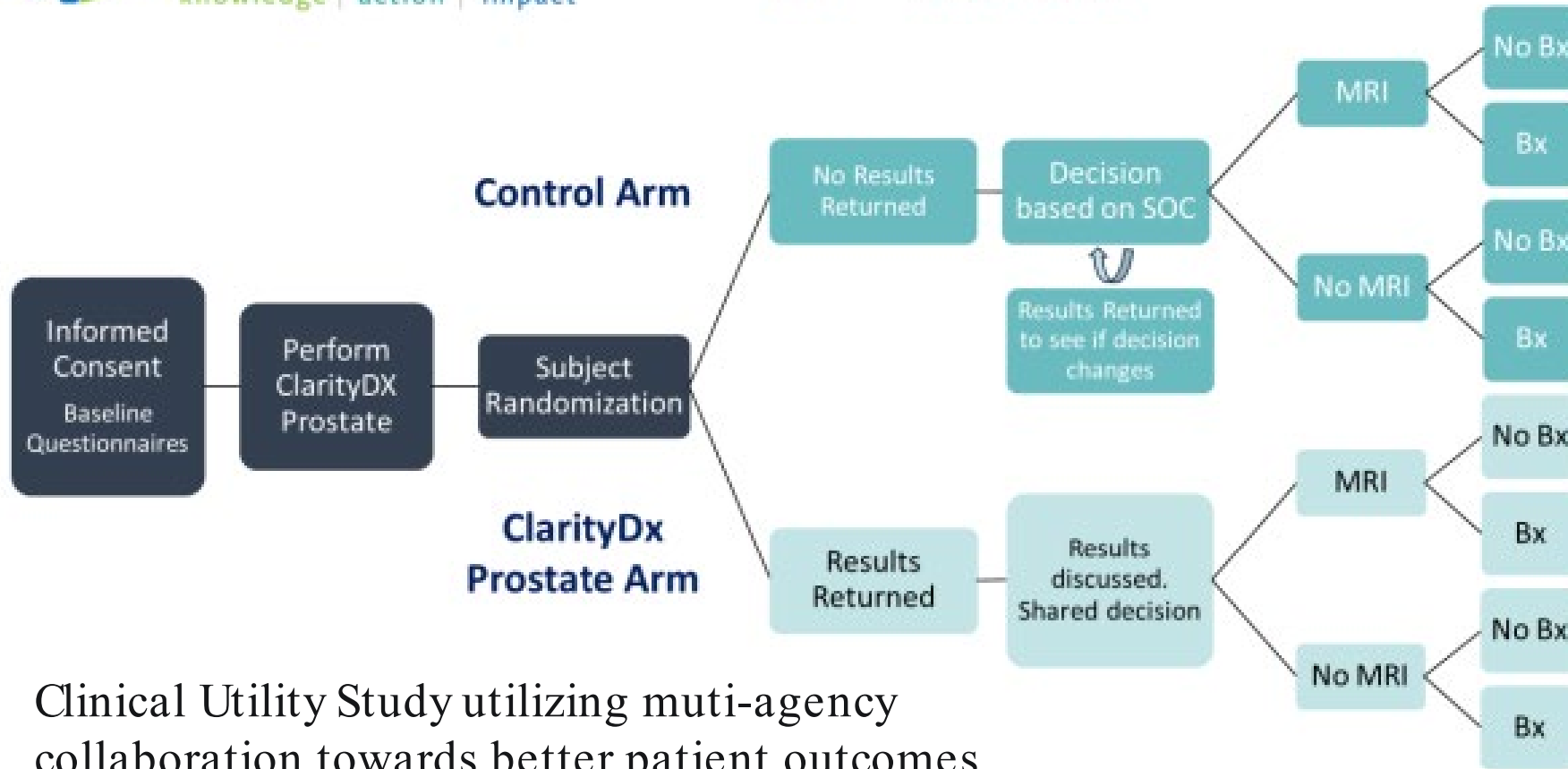


Prostate cancer screening pathway. (a) Discontinue screening if life expectancy < 10 years; (b) consider discontinuation of screening if age > 60 and PSA < 1 ng/ml; (c) more frequent testing interval can be considered; the optimal frequency is unknown; (d) for example risk calculators, %free PSA, etc.

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



- Avoid 32%- 47% of biopsies
- Prioritization of high-risk cases



Clinical Utility Study utilizing multi-agency collaboration towards better patient outcomes.

Synergies in action

→ Quantitatively assess the effects of ClarityDX Prostate on reducing overtreatment (consultations, biopsies, MRIs) while prioritizing high risk cases for investigation and treatment.

→ Thereby saving lives, saving quality of life, while reducing costs, and increasing effective and appropriate health resource allocation