

# Driving innovation through electronic PROMs in Radiation Oncology routine care

**RANZCR ASM 2021**

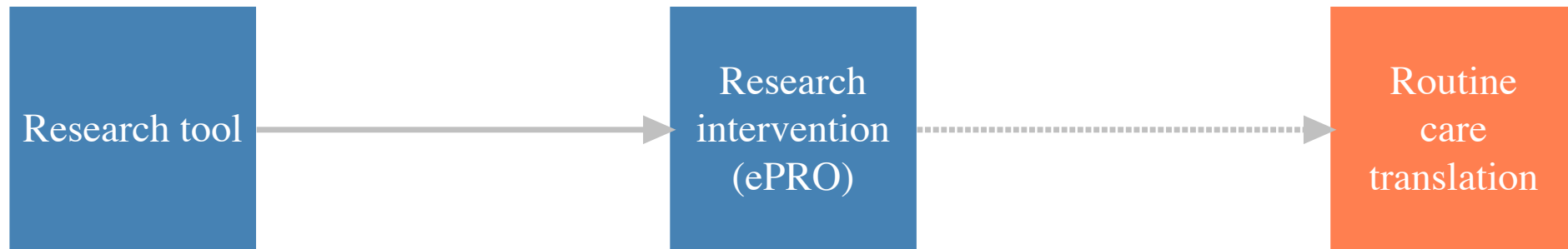
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**1. NSCC 2. AIHI 3. USyd 4. CBDRH**



# Patient-reported Outcome Measures

Patient-reported outcome measures capture a person's perception of their own health through questionnaires (ACSQHC).



# ePRO(M)s

## ePRO Benefits

- Better QoL (symptom control)
- Better communication
- Survival benefit (Basch et al, JCO 2016)

## ePRO Opportunities

- A successful ePRO implementation enables innovative routine care approaches...

## ePRO Challenges

- Complex healthcare workflows
- Culture & Clinician Buy-in
- Technology (Integration)

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### METHODS USED BY PRO SYSTEMS

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## Using Stakeholder Engagement to Overcome Barriers to Implementing Patient-reported Outcomes (PROs) in Cancer Care Delivery

### *Approaches From 3 Prospective Studies*

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# Clinical GU ePRO team @ NSCC



# Journey

## 2016

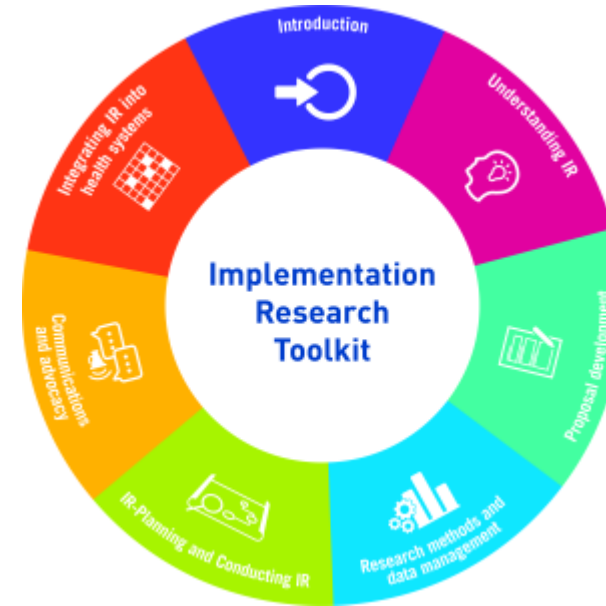
- **Onsite ePRO** collection (iPad in waiting room)
- Completion rates (35-59%; ASM 2017) too low.

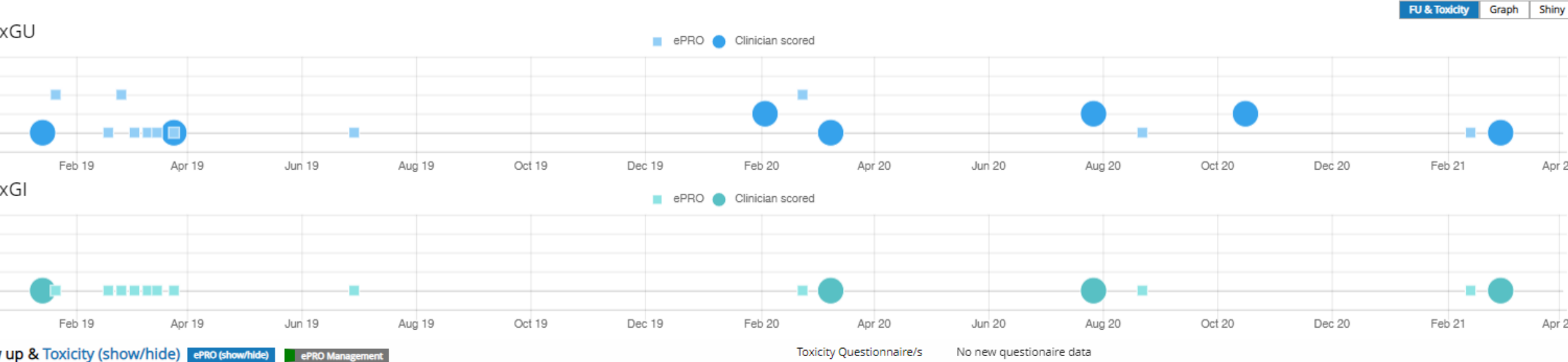
## 2017

- **Offsite ePRO**: No commercial vendor
- Re-Discovery of **REDCap** as "ePRO survey engine" (survey designer & API)

## 2018

- Re-implementation of in-house clinical research system enabling REDCap **Integration**





of Assessment: 3/02/2020

Doctor Reviewing: J. Toby

Current Follow-Up:

Comments: GU - nocturia x1. Urgency occasionally, occasional leakage if unable to find toilet. PSA 5.1 in Dec. For PSMA in few weeks. Plan: F/u in 6 months with PSA. PSMA in 24/03/20 with phone f/u after.

View ePro

### 1. Genitourinary Toxicity (MRTOG)

	ePro
All are grade 0   Not Applicable	29/6/19
Nocturia Grade	0
Incontinence Grade	1
Urgency	1
Obstruction / Urinary Retention	0
Hematuria (Renal/GU other)	0
Frequency	0
MAX GU (MRTOG)	1

### 2. Gastrointestinal Toxicity (MRTOG)

	ePro
All are grade 0   Not Applicable	29/6/19
Proctitis/Pain Grade	0
Discharge	0
Bleeding per rectum Grade	0
Stool Frequency	0
MAX GI (MRTOG)	0
Nocturia (times)	1
Alpha Blocker/ Anticholinergic	0

### 3. Other Toxicities

Fatigue	▼
Vertebral crush fracture	▼
Chest wall pain	▼
Other	▼

### 4. Erectile Function (Potency)

Status	▼
Using medication or device	No

Comment: The doctors and staff did an excellent job. A very dedicated team. Thanks so much.

## New Patient Survey - Radiotherapy

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### Medications

4. Do you take BLOOD THINNERS?  
(for instance Warfarin or Aspirin taken every day)

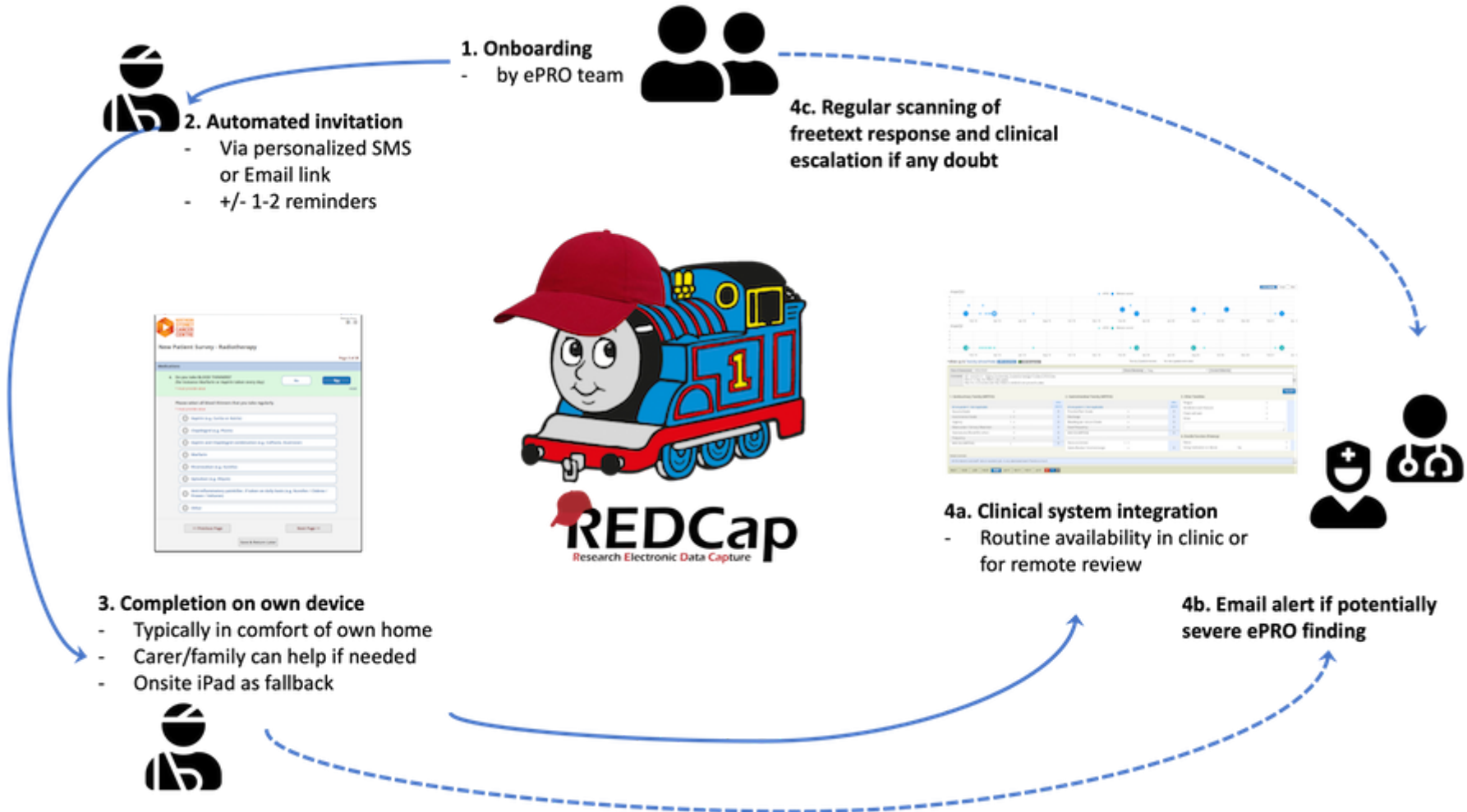
\* must provide value

Please select all blood thinners that you take regularly.

\* must provide value

 Aspirin (e.g. Cartia or Astrix) Clopidogrel (e.g. Plavix) Aspirin and Clopidogrel combination (e.g. CoPlavix, DuoCover) Warfarin Rivaroxaban (e.g. Xarelto) Apixaban (e.g. Eliquis) Anti-inflammatory painkiller, if taken on daily basis (e.g. Nurofen / Clebrex / Proxen / Voltaren) Other

# REDCap as ePRO Survey Engine





# Surveys and Frequencies in our GU Practice

Superset of international **REQUIRE** consortium's questionnaire:

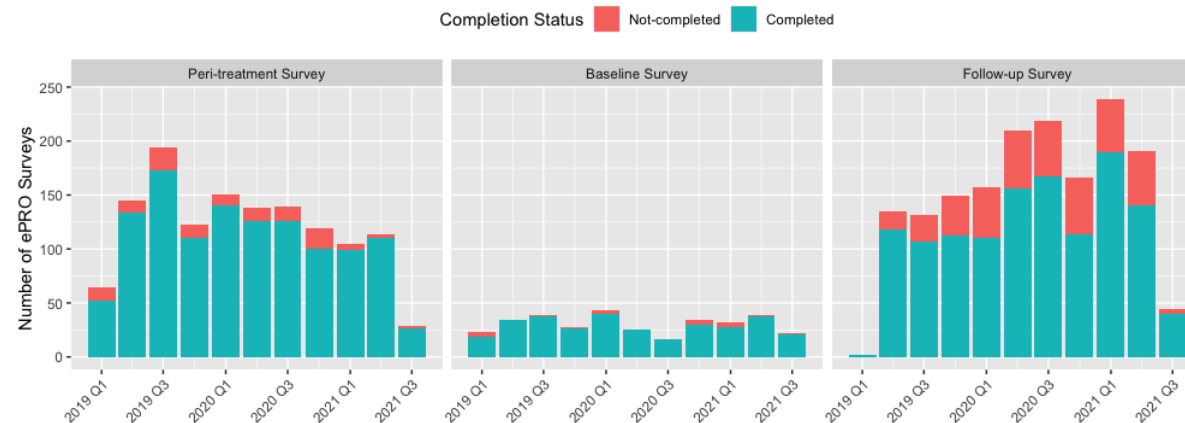
- **Baseline** (ePRO prior to new patient appointment)
- **Peri-treatment** (abridged; weekly ePRO during and in first month post RT)
- **Follow-up** (6 monthly ePRO)

The word "REQUIRE" in a bold, sans-serif font. The letter "Q" is stylized with a grey trail of stars. The letter "I" is replaced by a grey DNA double helix.

# ePRO Coverage & Completion

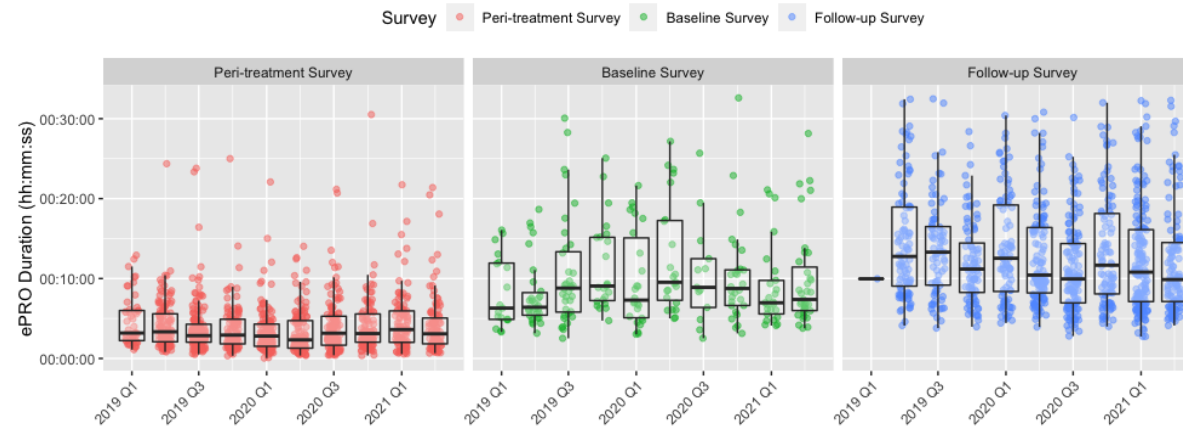
Between Jan 2019 - June 2021 (30mo) n=3324 invitations for separate ePROs were sent as part of NSCC prostate cancer clinic

	Baseline	Peri-treatment	Follow-up
Coverage (only for 2019)	85%	-	-
Completion (Jan 2019 - Jun 2021)	94% (319/340)	90% (1200/1332)	76% (1262/1652)



# ePRO Duration

	Baseline	Peri-treatment	Follow-up
1st Quartile	361s (6.0min)	110s (1.8min)	463s (7.7min)
Median	500 (8.3min)	181 (3.0min)	666 (11.1min)
3rd Quartile	761s (12.7min)	307s (5.1min)	967s (16.12min)



## Toxicity monitoring over time

- Longitudinal (late) toxicity monitoring ➡ more reliable including less interrater issues with **ePROs**.
- Trend for hypo#/SBRT with acute symptom peaks post RT course ➡ remote **ePROs** +/- alerts can capture them and trigger actions.

## Safe, risk-adapted remote follow-up

- Even before COVID-19 we had started to integrate **ePROs** into our phone follow-up program
- We are working on an **ePRO**-only approach under certain circumstances

## Embedded, pragmatic real-world clinical trials

- Our ongoing in-house prostate cancer RCT (def. hypo# vs SBRT) has recruited n=188 pts in 2 years
- Without **ePROs** this wouldn't have been possible in a small 3 linac department.

## Innovative care pathways

- Recent presentation on **ePRO**-driven referral pathway to community services
- Slides and **video** here: [URL]

# Conclusion

Routine care ePROs are **challenging on multiple levels**, but definitely **feasible** and well worth the effort as they open **exciting opportunities** to improve the care for our patients.



Link to ePRO Dashboard:

[URL] & [QR code]

Link to ePRO-driven referral process VIDEO:

[URL] & [QR code]