

Driving innovation through electronic PROMs in Radiation Oncology routine care

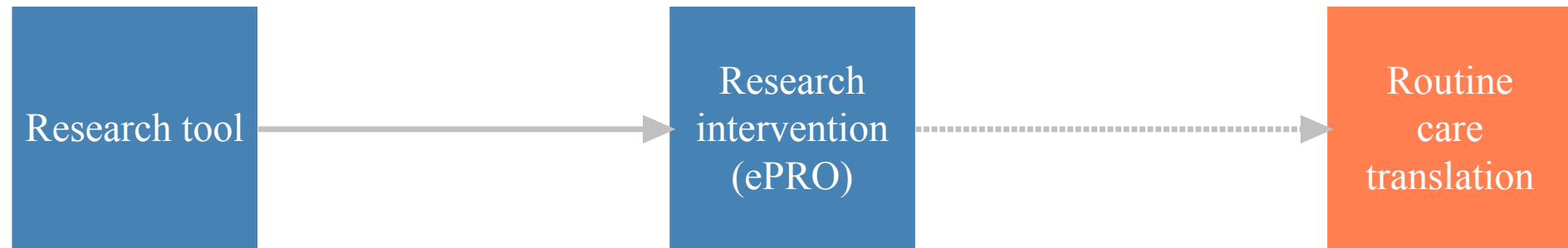
RANZCR ASM 2021

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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 (x2 RCTs)

More ePRO Opportunities

- Toxicity monitoring over time (SBRT)
- Safe remote FU: ⬆️ Convenience ? ⬇️ Cost
- Embedded RW trials
- Innovative care pathways

ePRO Challenges

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

METHODS USED BY PRO SYSTEMS

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%) were **promising but insufficient**
- Patients' ability to complete ePRO was rarely an issue!

Main barriers:

- Logistical (unavailable devices / volunteers)
- Suboptimal timing
- Missing EMR integration

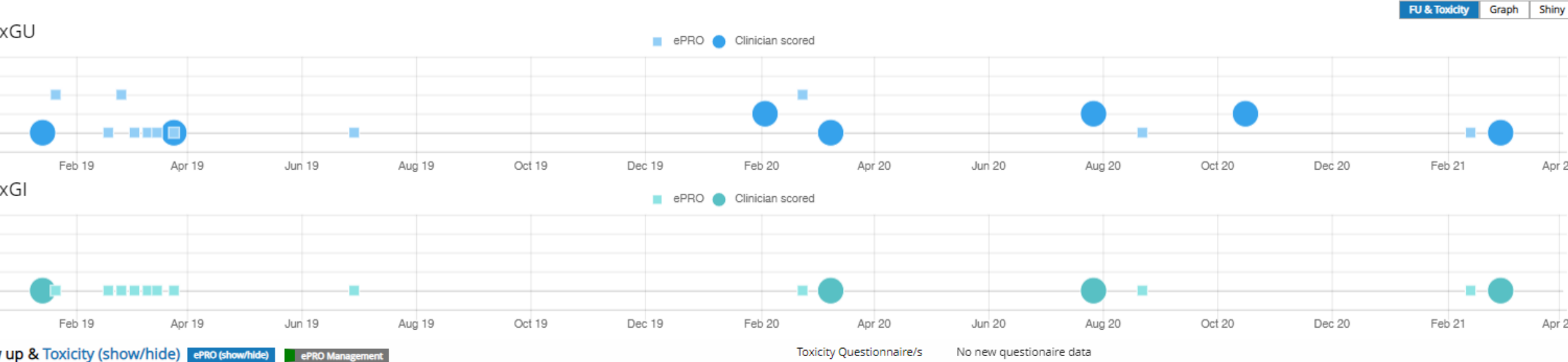
2017

- **Offsite ePRO:** Unsuccessful search for commercial vendor (survey designer and/or API)

2018

- Discovery of **REDCap** as "ePRO survey engine"
- Major upgrade of in-house research information system
- Integration of REDCap for ePRO collection





of Assessment: 3/02/2020 | Doctor Reviewing: J. Toby | Current Follow-Up: [dropdown]

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.

1. Genitourinary Toxicity (MRTOG)

	ePro 29/6/19
Urinary Grade	0
Incontinence Grade	1
Frequency	1
Obstruction / Urinary Retention	0
Hematuria (Renal/GU other)	0
Frequency	0
MAX GU (MRTOG)	1

2. Gastrointestinal Toxicity (MRTOG)

	ePro 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 Survey Engine



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)

ePRO Coverage & Completion

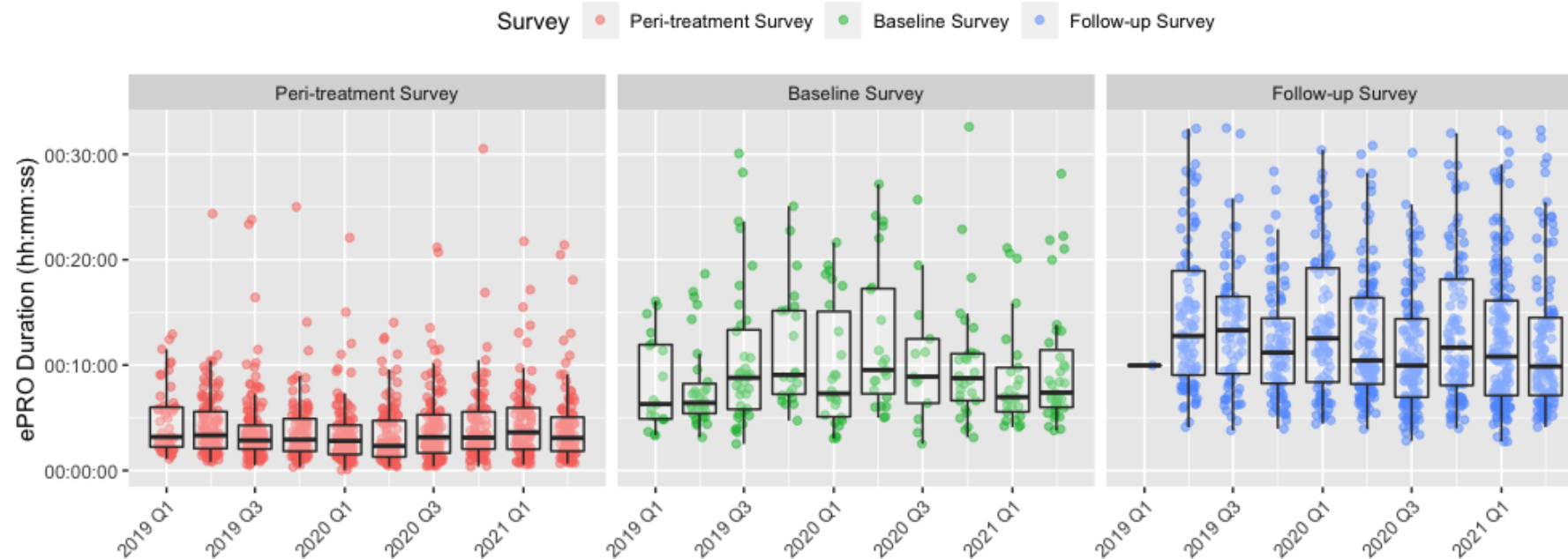
Between Jan 2019 - June 2021 (30mo) n=2781 completed ePROs in prostate/bladder cancer clinic (~90/mo)

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



Innovations & Conclusion

More ePRO Opportunities

- Toxicity monitoring over time: We are collecting for 2.5 years now successfully (SBRT benefit)
- Safe remote FU: started even before COVID (still room for improvement - risk adaptation)
- Embedded RW trials: Inhouse OPTIMAL trial n=188 pts in 2 years recruited
- Innovative care pathways : see VIDEO

The effort to ePROs are very well worth it and together with wearables existing things are possible

Thanks!

Slides created via the R package **xaringan**.

The chakra comes from **remark.js**, **knitr**, and **R Markdown**.