

Driving innovation through electronic PROMs in Radiation Oncology routine care

RANZCR ASM 2021

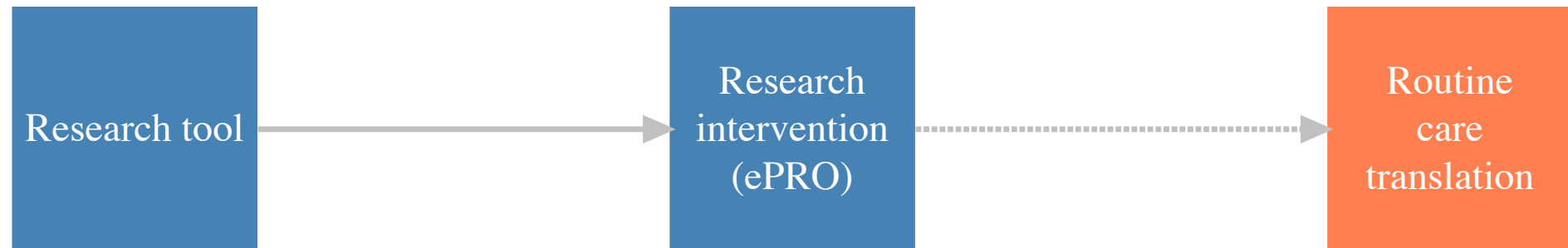
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1. NSCC 2. AIHI 3. USyd 4. CBDRH



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 Challenges

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

ePRO Opportunities

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

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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

Stover, Angela M. PhD^{*,†}; Tompkins Stricker, Carrie PhD, RN[‡]; Hammelef, Karen DNP, RN[‡]; Henson, Sydney BS[†]; Carr, Philip BS[†]; Jansen, Jennifer MPH[†]; Deal, Allison M. MS[†]; Bennett, Antonia V. PhD^{*,†}; Basch, Ethan M. MSc, MD^{*,†,§}

Author Information 

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Clinical GU ePRO team @ NSCC



Journey

2016

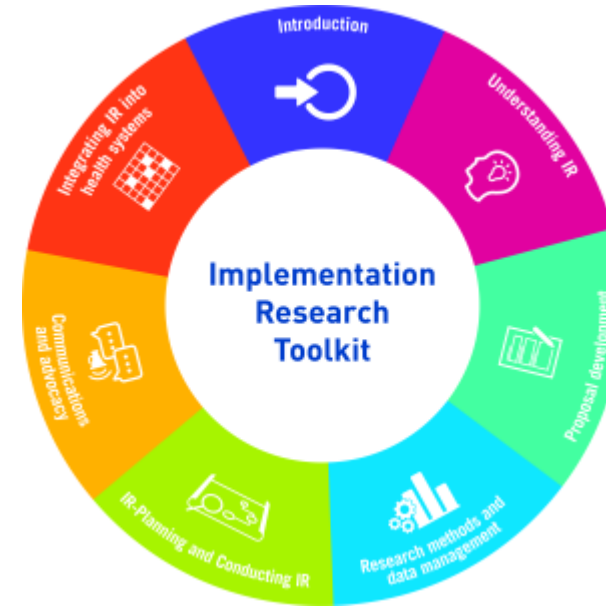
- **Onsite ePRO** collection (iPad in waiting room)
- Completion rates (35-59%; ASM 2017) too low.

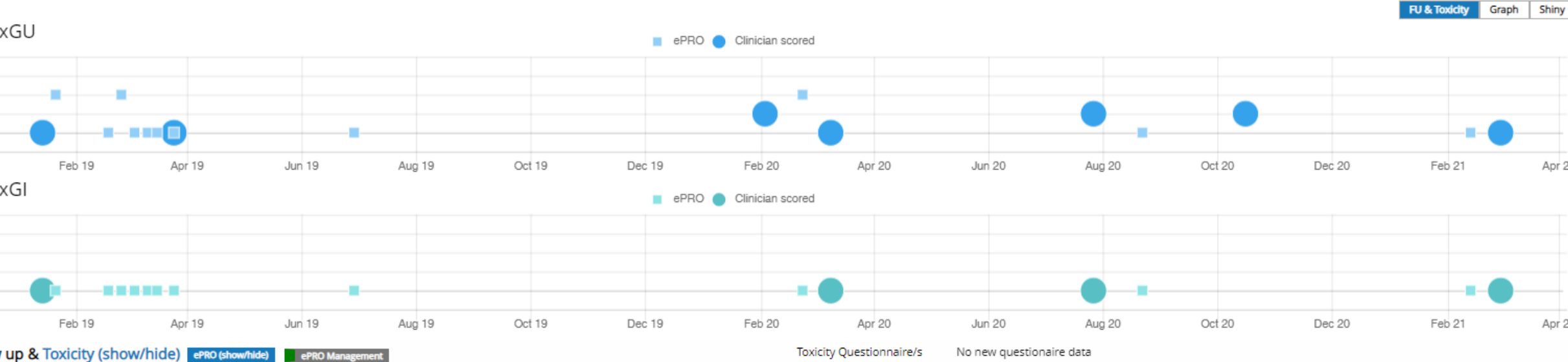
2017

- **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: [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
Urgency	1
Obstruction / Urinary Retention	0
Hematuria (Renal/GU other)	0
Frequency	0
MAX GU (MRTOG)	1

2. Gastrointestinal Toxicity (MRTOG)

	ePro 29/6/19
All are grade 0 Not Applicable	
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	0
Vertebral crush fracture	0
Chest wall pain	0
Other	0

4. Erectile Function (Potency)

Status	0
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)

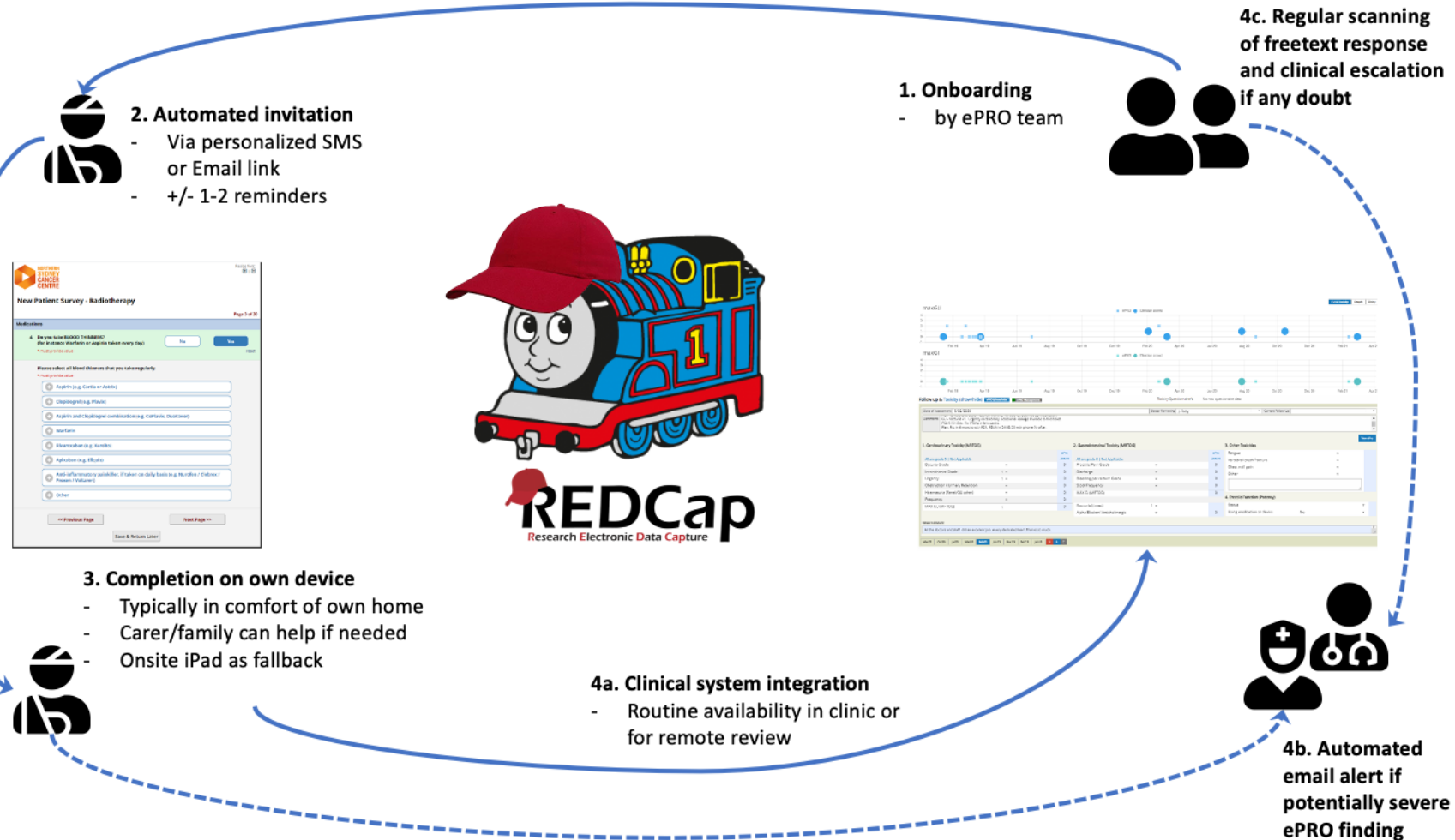
* must provide value

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:

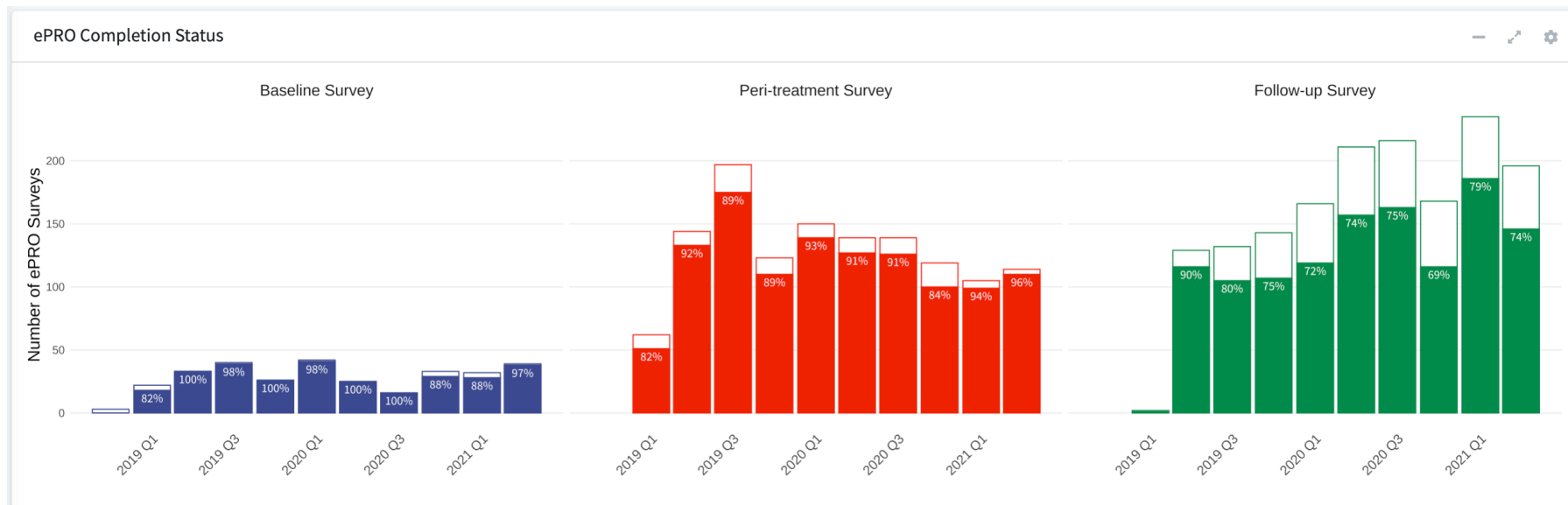
- **Baseline** (ePRO prior to new patient appointment)
- **Peri-treatment** (abridged; weekly ePRO during and in first month post RT)
- **Follow-up** (6 monthly ePRO)

The logo for the REQUIRE consortium. The word "REQUIRE" is written in a bold, black, sans-serif font. The letter "Q" is stylized with a grey outline and contains several small white stars. The letter "U" is also stylized with a grey outline and contains a white DNA double helix.

ePRO Coverage & Completion

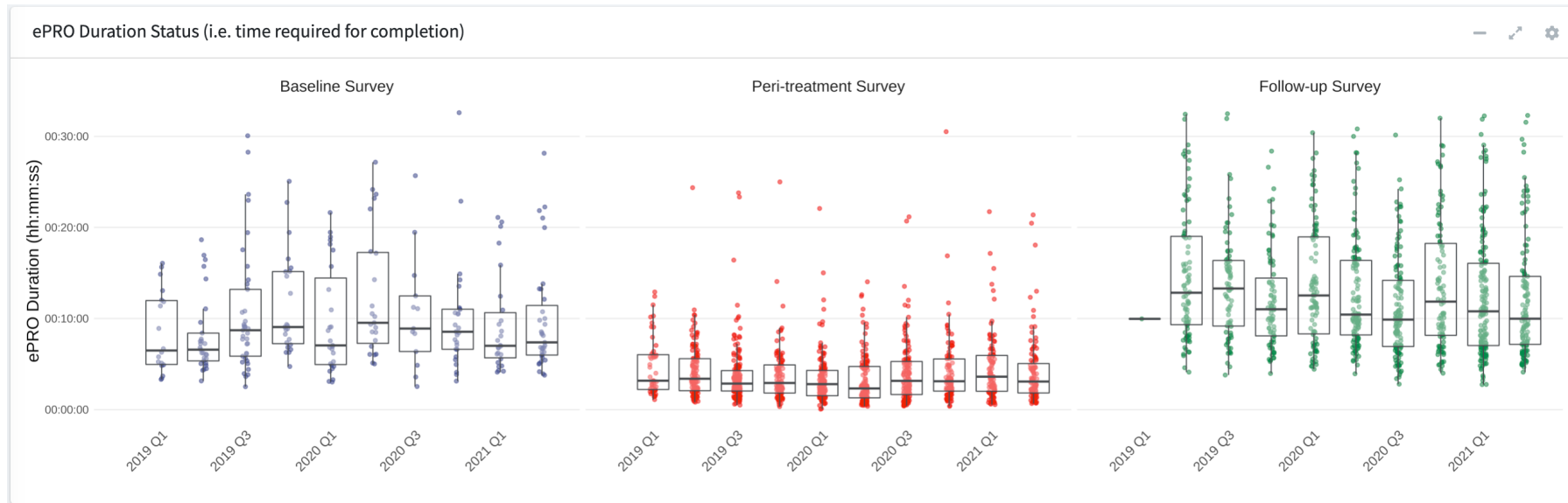
Between Jan 2019 - June 2021 (30mo) n=3201 invitations (+/- reminders) for separate ePROs were sent as part of NSCC prostate cancer clinic.

	Baseline	Peri-treatment	Follow-up
Coverage (only for 2019)	85%	-	-
Completion (Jan 2019 - Jun 2021)	94% (293/311)	91% (1170/1292)	76% (1216/1598)



ePRO Duration

	Baseline	Peri-treatment	Follow-up
1st Quartile	6.0 min	1.8 min	7.7 min
Median	8.2 min	3.0 min	11.1 min
3rd Quartile	12.7 min	5.1 min	16.1 min



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: <https://thiloschuler.me/project/epro-driven-crisp>

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:

<https://thiloschuler.shinyapps.io/prospector-asm21>



Link to ePRO-driven referral process incl video):

<https://thiloschuler.me/project/e-pro-driven-crisp>



Thank you

