

Radiotherapy research: phone a friend....

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Aims of radiotherapy research

- Improve patient outcomes and experience
- Translatable for all centres
- Reproducible into clinical practice
- Easy to implement



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The big questions in radiotherapy research

- Personalise radiotherapy
- Image guidance
 - Which imaging tool
 - What to target
 - What to avoid
- SBRT



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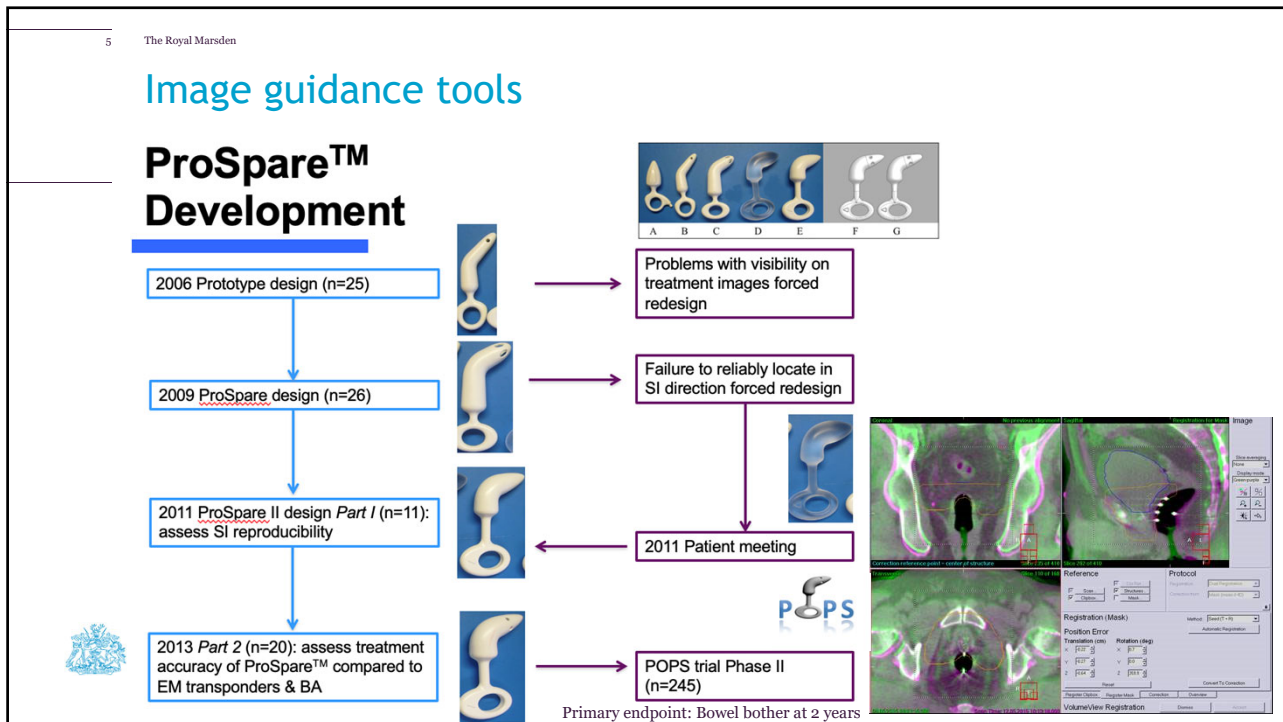
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How we need help....

- You are the most patient facing team during the radiotherapy treatment
 - Understand the challenges of treatment
 - What the issues are
 - How to improve them
- You understand image guidance a lot better than us as you do it daily
 - Data collection
 - What is standard, what is not
- What is feasible



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PINPOINT

Helen McNair, Sophie Alexander, Alison Tree, Emma Harris

- Clinical study of ultrasound guidance of radiotherapy using Elekta Clarity
- 10 patient feasibility study
- Hypothesis: Common sites of recurrence and OAR can be more clearly visualised on US compared to CBCT

Prostate Bed

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PEARLS

PEARLS RADIOTHERAPY PLANNING AND DELIVERY GUIDELINES

A phase II/III trial of Primary radiotherapy for Androgen sensitive prostate cancer patients with Lymph nodes

RADIOTHERAPY PLANNING AND DELIVERY GUIDELINES

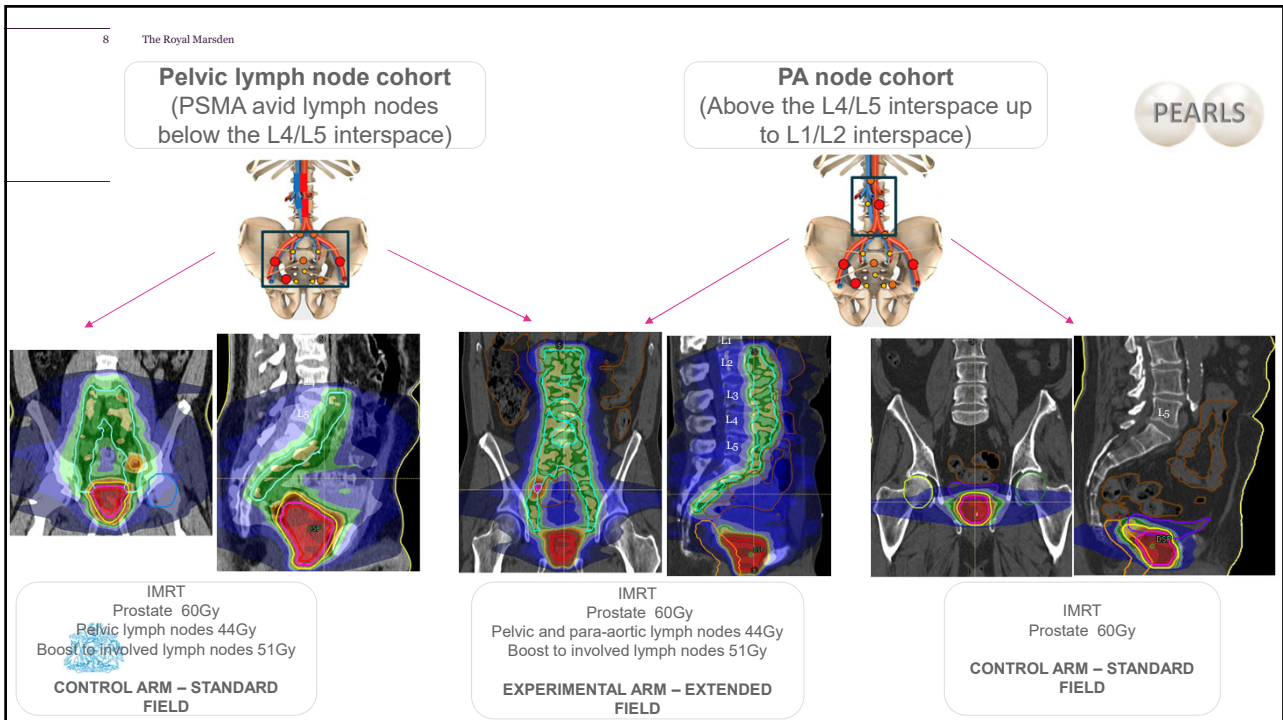
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PEARLS RT planning and delivery guidance document:

“If this deviation occurs a second time refer to a locally assigned responsible person (e.g. PI, senior radiographer, IGRT lead, physicist) for clinical and dosimetric review”

1	■ Bowel	At most 158.00 cm ³ volume at 3600 cGy dose	80.70 cm ³	● Yes	0 %
1	■ Bowel	At most 70.00 cm ³ volume at 4000 cGy dose	38.73 cm ³	● Yes	0 %
1	■ Bowel	At most 28.00 cm ³ volume at 4400 cGy dose	0.39 cm ³	● Yes	0 %
1	■ Bowel	At most 6.00 cm ³ volume at 4800 cGy dose	0.01 cm ³	● Yes	0 %
1	■ Bowel	At most 0.01 cm ³ volume at 5200 cGy dose	0.00 cm ³	● Yes	0 %

Slide courtesy of Sophie Alexander

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The ROYAL MARSDEN NHS Foundation Trust **RTTQA** Radiotherapy Trials Quality Assurance

Olivia Naismith
National Radiotherapy Trials Quality Assurance Group, Royal Marsden Hospital, UK

Development and QA of IGRT procedures for node-positive prostate cancer patients in the PEARLS trial

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¹The Royal Marsden NHS Foundation Trust, UK; ²National Radiotherapy Quality Assurance Group; ³University College London Hospitals NHS Foundation Trust, UK; ⁴Heaun Vernon Cancer Centre, UK; ⁵Institute of Cancer Research, UK

Fraction	Reference between bone and prostate isocentre and RT delivered?			Any intervention taken? (i.e. offline review, re-setup, review by locally assigned responsible person, etc.)
	c<5mm	>5mm but <10mm	>10mm	
1	Yes			Yes Offline review
2	Yes	Yes		Yes Offline review
3	Yes			Yes Offline review
4	Yes			Yes Offline review
5	Yes			Yes
6	Yes			Yes Offline review - discussed with clinician
7	Yes	Yes		Yes Re-setup to improve pitch. Reviewed by local responsible person.
8	Yes			Yes Additional set up instructions added - pitch improved.
9	Yes			Yes
10	Yes	Yes		Yes Reset up to improve pitch, 2nd set up accepted.
11	Yes			Yes
12	Yes			Yes
13	Yes			Yes
14	Yes			Yes Offline reviewed - consultant accepts coverage.
15	Yes			Yes Offline reviewed
16	Yes			Yes
17	Yes			Yes
18	Yes			Yes
19	Yes			Yes
20	Yes			Yes

Treatment arm	Prostate / Nodes deviation at treatment		No. fractions re-setup				
	No patients treated	No. fractions delivered	≤5 mm	>5mm and ≤10mm	>10mm	Re-setup for patient position or anatomy	Re-setup for prostate/nodes deviation >10mm
Both arms	57	1140	94.3% (1075)	5.7% (65)	0	5.3% (60)	0.3% (3)
PA nodes	32	640	93.9% (601)	6.1% (39)	0	5.6% (36)	0.2% (1)
Pelvic nodes	25	500	94.8% (474)	5.2% (26)	0	4.6% (23)	0.4% (2)

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The team

- How to be/get involved in research
- Role in the research team
- Outputs
- Goal –
 - improve outcomes for our patients
 - work satisfaction / enjoyment

