

AWARD NUMBER: W81XWH-19-1-0651

TITLE: A Phase 2 Trial of Combined Lutetium-PSMA Theranostics and Docetaxel in Newly Diagnosed Metastatic Hormone-Naïve Prostate Cancer

PRINCIPAL INVESTIGATOR: Professor Michael Hofman

CONTRACTING ORGANIZATION: University of Melbourne, Parkville, Australia

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14. ABSTRACT

This research will conduct a randomised phase II multi-centre trial of ¹⁷⁷Lu-PSMA + ADT followed by standard-of-care docetaxel in comparison to standard-of-care alone (ADT + docetaxel) will be conducted. We postulate that the addition of up-front treatment with ¹⁷⁷Lu-PSMA will more effectively eradicate disease resulting in a higher proportion of patients with undetectable PSA at 12 months. This is an open label, randomised, and stratified, 2-Arm, multi-centre, phase 2 clinical trial recruiting 140 patients at 11 Australian centres. Patients with *de novo* high-volume metastatic hormone-naïve prostate cancer will be randomised to the experimental Arm (¹⁷⁷Lu-PSMA followed by docetaxel) or standard-of-care Arm (docetaxel alone) in a 1:1 ratio. The **primary objective** is to compare the undetectable prostate specific antigen (PSA) rate at 12 months after commencement of protocol therapy in male patients with newly-diagnosed high-volume metastatic hormone-naïve prostate cancer (mHNPC) treated with sequential ¹⁷⁷Lu-PSMA and docetaxel versus those treated with docetaxel alone.

Progress: This is an active RCT. Currently open at 10 sites across Australia. Almost at 50% target recruitment.

15. SUBJECT TERMS

Lutetium-177, PSMA, Prostate Cancer, docetaxel chemotherapy, hormone therapy, mHNPC, PSMA PET

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1. INTRODUCTION:

In our research, we will conduct a randomised study comparing the addition of up-front ¹⁷⁷Lu-PSMA to the existing standard-of-care of Androgen Deprivation Therapy (ADT) + Docetaxel in 140 men with high-volume mHNPc. Patients will be recruited from 12 Australian sites experienced in theranostics. The primary endpoints will be achievement of PSA \leq 0.2ng/mL at 12 months and safety. We anticipate the results we derive will provide evidence of the safety, feasibility and activity of ¹⁷⁷Lu-PSMA in high-volume mHNPc and HRCaP. We anticipate our results will provide a compelling rationale for developing later-phase studies that could transform clinical practice in prostate cancer.

2. KEYWORDS:

Lutetium-177, PSMA, Prostate Cancer, docetaxel chemotherapy, hormone therapy, mHNPc, PSMA PET

3. ACCOMPLISHMENTS:

As per the 1 st annual report the COVID-19 global pandemic is still a disruptive influence in the local landscape. While site activation has caught up patient recruitment is still affected. As government and institutional regulatory advice updates, so too does the activity of the study.

Major Task 1: Study start-up phase (Months 1-3)

Milestones achieved

Please note all of Major Tasks in this section were completed in year 1.

Major Task 2: Patient accrual & treatment (Months 9-27)

Subtask 1: Commence and undertake Study

- Screen, recruit, randomise, deliver therapy as per randomised-arm and follow-up patients as per protocol. Complete study case report forms. Monitor for serious adverse events.

Milestones Achieved

Study begins: 1st participant consented, screened and enrolled	First patient consented on 20 April 2020 and enrolled during COVID-19 pandemic. Reported in Year 1
Monitor study quarterly, specifically patient recruitment quarterly, percentage of case report forms completed and review of serious adverse events by the data safety monitoring committee.	Ongoing. Study is regularly monitored with fortnightly meetings held between PIs and the study management team. At 15 August 2021 61 patients had been randomized to the study with an even distribution between the arms. DSMB meeting was held in July 2021 as per protocol with no study concerns raised.
Complete patient recruitment	Expected date for complete recruitment Q3 2022. This is an adjustment down from previous report that anticipated Q1 2022. This target will continue to be monitored and adjusted accordingly dependent on COVID-19 status in Australia.

Major Task 3: Data Analysis (Months 33-36)

Sub Task 1: Report findings of study

- Perform statistical analysis to determine primary objectives (refer to objectives on p1).
- Perform statistical analysis to determine secondary objectives (refer to objectives on p1).
- Disseminate study findings through presentations at international scientific meetings and scientific journals.

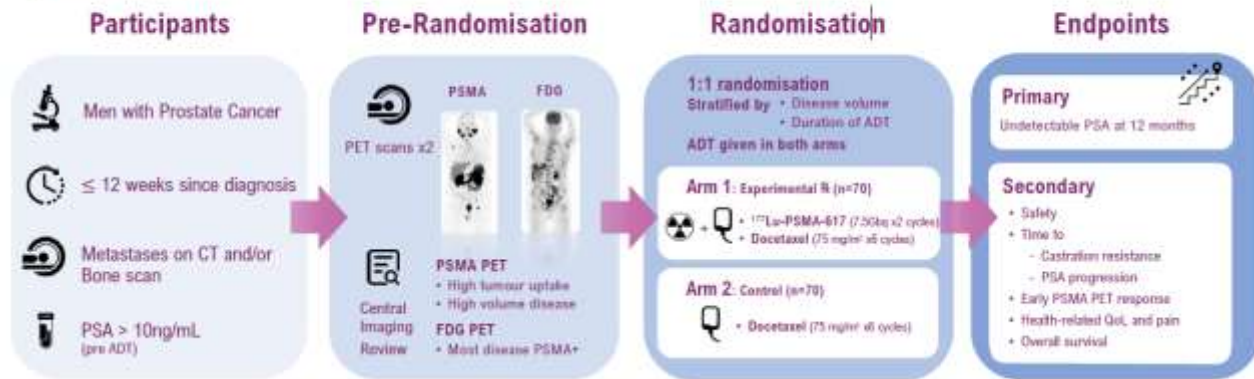
Milestones Achieved

This milestone is yet to be reached.

What was accomplished under these goals?

Methodology (as presented in year 1 report):

A Randomised Phase II Study investigating the safety and benefit of sequential Lutetium-177 PSMA-617 (Lu-PSMA) radionuclide treatment in addition to chemotherapy compared to chemotherapy treatment alone in men with metastatic prostate cancer.



In spite of a challenging external and internal environment brought on by the COVID 19 pandemic – year 2 activity for the study was successful. 10 sites were activated and all sites are actively participating in recruitment and screening of patients. Only 1 site is yet to randomize a patient. Our second annual grant information event was held in January 2021 (face to face and via zoom). This is an important communication tool for disseminating information, and was successful.

In spite of the restrictions that are still in place due to the COVID 19 pandemic (Australia is currently in the middle of a third wave and experiencing more disruption due to lockdowns), recruitment of patients to the study did receive a significant boost as more sites opened throughout 2021. The study is almost 50% recruited.

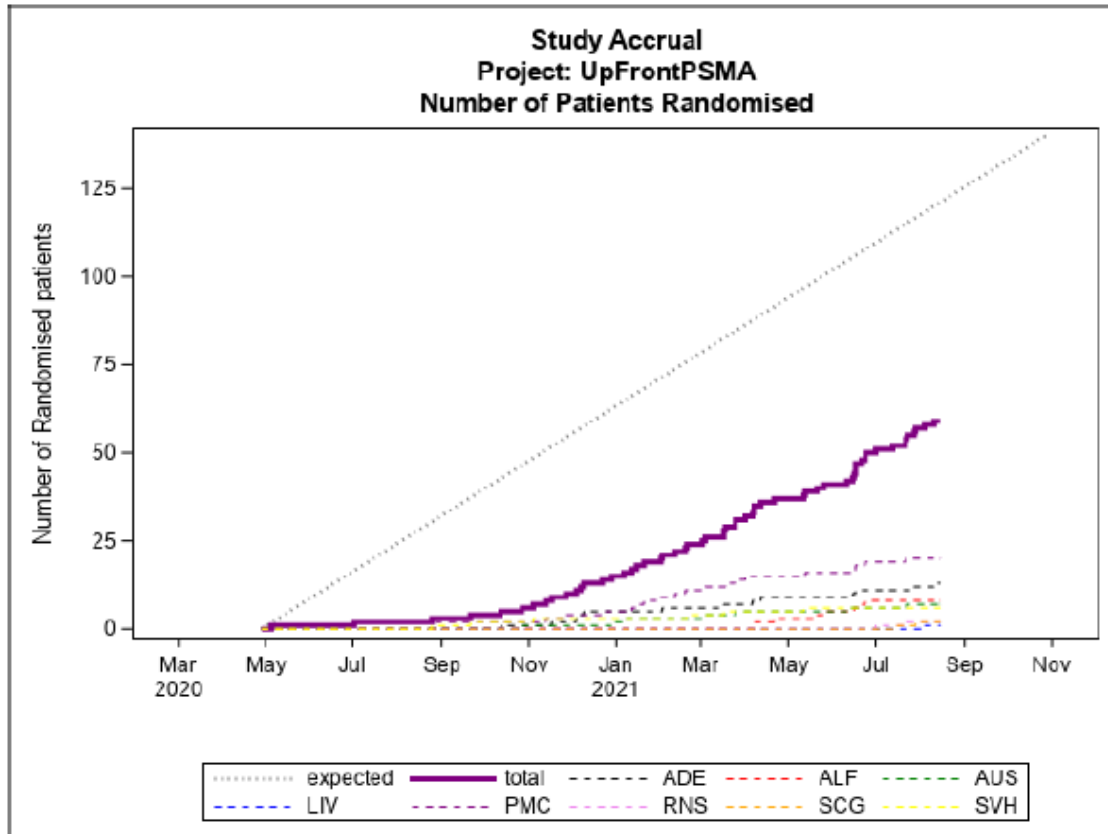
Deadlines however are still impacted. Recruitment will unlikely be complete until well into the second half of 2022.

2020/2021 12 month highlights are:

- Activation of 10 study sites.
- ARTnet accreditation of all participating sites (standard in person site visits were adapted to virtual without compromising quality and safety)
- Activation of 10/12 clinical trial sites nationally
- Randomisation of 61/140 Men to #UpFrontPSMA
- Publication of UpFrontPSMA protocol in BJUI, Mar 7, 2021 DOI: 10.1111/bju.15384 this was promoted in positive social media coverage, especially on Twitter #UpFrontPSMA.
- DSMB meeting held June 2021 (after 20 patients recruited to both arms of study) with no concerns raised
- 4 issues of Study newsletter produced and circulated to stakeholders
- 2nd formal grant education session held for all CIs in January 2021

- Ongoing effective and supportive relationships with entire study team BaCT, ANZUP, ARTnet, PMCC OCR, Study sites and Investigators, Movember, USDoD, ANSTO, Endocyte/AAA/Novartis, University of Melbourne.
- Highlighting of study during Live Prostate Cancer Foundation (USA) grant reporting session
- DoD quarterly reporting milestones met.

Figure 1: Study Accrual



What opportunities for training and professional development has the project provided?

Due to COVID-19 there has been no scope in the past 12 months to attend in person any national or international conferences in this 12 month period. We hope when Australia’s national and international borders are opened again there will be more opportunity for conference presentations and attendance. Online conference attendance is encouraged for all team members.

How were the results disseminated to communities of interest?

In the new era of COVID-19 and the rapid response to meeting “online”, the UpFrontPSMA alliance has been able to adapt to and adopt all new online meeting and webinar activities. PI Prof. Michael Hofman and in 2020/2021 there has been continued online engagement. While not all reported presentations below specifically relate to the study, they encompass the ongoing research into PSMA Theranostics currently being run. UpFront PSMA, as one of the world’s pioneering studies in the early use of Lu-PSMA Theranostics, has been referred to as the next generation research paradigm. The active participation in webinars and podcasts has had a dramatic effect on our international outreach capability, which is significant.

Webinars and Podcasts

- Theragnostics Talks (SAM Nordic): **ProPSMA and TheraP – changing patient care – with Michael Hofman**. August 18, 2021
- National Alliance of State Prostate Cancer Coalitions (NASPCC), Webinar Series Presents: **“TheraP/VISION Trial on Lutetium-PSMA”**, August 2, 2021.
- **TheraP “Deep Dive”**, Prostate Cancer Foundation (PCF) together with ProsTIC, 25 Feb, 2021. FDA approves PSMA PET/CT! We chat with UCSF team, GU Cast, 3 Dec, 2020
- **Going Nuclear | GU Oncology highlights from #EANM20**, GU Cast, 10 Nov, 2020
- **PSMA Theranostics**, Apology Proton Cancer Centre (India), Webinar, 21 Oct, 2021
- **Global Prostate Cancer Foundation Journal Club: #Next Generation PSMA**, Prostate Cancer Foundation (PCF) together with ProsTIC, 8 October 2020.

Invited Lectures International

- **TheraP (ANZUP 1603) Phase 2 trial of 177Lu-PSMA-617 vs cabazitaxel: results + contrasts to VISION**, EAU21 Virtual, Live Plenary Session, 11 Jul 2021.
- **Believing is seeing: evolving role of theranostics for imaging and treatment of prostate cancer**, Meet the Oncology Expert Grand Round, Institut Jules Bordet, Jun 2021.
- **Theranostics - giving diagnostics a powerful purpose, RADAIM21: back to business**, Byron Bay, Jun 2021.
- **ProPSMA, TheraP and UpFrontPSMA Study Updates, 51st Australia and New Zealand Society of Nuclear Medicine (ANZSNM) Scientific Meeting: Unlocking the Potential of Nuclear Medicine**, May 21-23, 2011. [Live and Virtual]
- **A New Era of Treating Prostate Cancer: Improving Outcomes with Theranostics**, TATTOOS Mini-Symposium: Paul Scherer Institut (PSI), April 26, 2021. [Virtual]
- **Theranostics, Nucleärmedizin Post Congress Symposium: Stars of Molecular Imaging and Therapy**, April 31, 2021. [Virtual]
- **Nuclear Medicine in Precision Oncology: Advancing Prostate Cancer Care, 2021 RACP Congress: Transformation - Adapting for the Future**, April 29 - May 14, 2021. [Virtual]
- **Theranostics for Metastatic Disease, e-PROSPECT21: Progress and Precision**, March 18, 2021. [Virtual]
- **Practice Changing PSMA Clinical Trials**, Philippine Society of Nuclear Medicine 36th Annual Convention: Advancing Nuclear Medicine Amid the COVID-19 Pandemic, February 6-6, 2021. [Virtual].
- **TheraP Phase II trial Initial Results**, 2020 Annual Meeting of China Anti-Cancer Association: Genitourinary Cancer Committee and The 10th Shanghai Genitourinary Oncology International Symposium, Dec 7-17, 2020. [Plenary Speaker] [Virtual]
- **What next for PSMA imaging and theranostics?** MD Anderson Cancer Center Global Academic Programs 2020 (GAP2020), 17-19 Nov, 2020. [Virtual]
- **ProPSMA Study Results, 2020 Annual Meeting of China Anti-Cancer Association: Genitourinary Cancer Committee and The 10th Shanghai Genitourinary Oncology International Symposium**, Dec 7-17, 2020. [Plenary Speaker] [Virtual]
- **Evolving Theranostics in Prostate Cancer**, Rural Alliance in Nuclear Scintigraphy (RAINS) Integrative Imaging Symposium, 31 Oct - 1 Nov, 2020. [Virtual]
- **Is Theranostics the Future of Nuclear Medicine**, Plenary lecture (What's Cooking? Next Generation Radiopharmaceuticals), EANM 2020 Congress Virtual, October 22 - 30, 2020. [Plenary Speaker]
- **ProPSMA study - A prospective randomised multi-centre study of Prostate Specific Membrane Antigen (PSMA) PET/CT imaging for staging high-risk prostate cancer prior to curative-intent surgery or radiotherapy** (Hot Topic Session - Best Clinical Trials), EANM 2020 Congress Virtual, October 22 - 30, 2020. [Plenary Speaker]
- **TheraP Study - A randomised phase II trial of 177LuPSMA-617 (Lu-PSMA) theranostic versus cabazitaxel in metastatic castration resistant prostate cancer (mCRPC) progressing after docetaxel** (Hot Topic Session - Best Clinical Trials), EANM 2020 Congress Virtual, October 22 - 30, 2020. [Plenary Speaker]
- **TheraP trial and Beyond**, Association of Nuclear Medicine Physicians of India (ANMPICON) 2020 Virtual Meeting, India October 2, 2020. [Plenary Speaker including live Q&A]

- **Conquering Advanced Prostate Cancer: Key Scientific Updates in 2020**, Hybrid Virtual Meeting, Hong Kong, 24 Sep, 2020. [sponsored by Astellas]
- **PSMA Theranostics, Keynote lecture**, European Organisation for Research and Treatment of Cancer (EORTC) Imaging Group Meeting, 21 Sep, 2020. [Virtual meeting in COVID-19 times]

Invited Lectures (local)

- **Improving outcomes for men with prostate cancer with more accurate imaging**, VCCC Monday Lunch Live, 09 Aug 2021. Theranostics Update

What do you plan to do during the next reporting period to accomplish the goals?

Based on the plan for Milestones as submitted in the Project Grant application, year 3 activities for UpFrontPSMA are centered on completing patient recruitment and monitoring of study activities. Due to lagging recruitment – consideration will be given to identifying potential additional study sites if deemed feasible. The third annual PCRA information session will also be scheduled. We anticipate being able to begin Major task 3: Data Analysis by the end of 2022, to begin reporting study findings.

4. IMPACT:

Nothing to report

What was the impact on other disciplines?

Nothing to report

What was the impact on technology transfer?

Nothing to report

What was the impact on society beyond science and technology?

Nothing to report.

5. CHANGES/PROBLEMS:

Changes in approach and reasons for change

Nothing to report

Actual or anticipated problems or delays and actions or plans to resolve them

2. COVID-19 Pandemic

The global COVID-19 pandemic continues to affect patient recruitment and the ability for our studies to progress at pace. Australia is facing a 3rd wave of the pandemic which now includes the COVID19 Delta strain. The Australian national vaccination rollout has been slow, and as a result a majority of states went back into lockdown with COVID 19 case numbers increasing significantly. This is specifically putting pressure on the New South Wales and Victorian Health Care Systems and the flow on affects to cancer diagnosis and treatment. Both of these states have multiple UpFrontPSMA sites which will again affect recruitment ability in the short term. There is actually nothing the study team can do to counter this issue, however this is not a national problem currently, and supporting interstate participation of recruiting sites is our highest priority.

Changes that had a significant impact on expenditures

Budget expenditure continues to track at a slightly slower than anticipated pace due to COVID 19 influence on trial recruitment.

*Salaries are on track.

*Material and supplies are increasing in line with increased patient recruitment in year 2 and research progress.

*Foreign Travel and Publication costs continue to lag

An application to adjust the budget to include the purchase of an HPLC machine (not anticipated to be required in the original grant proposal) was submitted. The equipment (QC item). For noting: the HPLC-scanner is a flexible controlling unit designed for the remote detection of a wide range of radioisotopes with TLC and HPLC for highest level control of our radiopharmaceutical production of LuPSMA617 – the therapy being used in our trial. The extra volume of production our trial is creating, along with the strict QC parameters identified this need. Permission was granted as budget expenditure adjustments were possible, and the purchase did not change the overall grant funding allocation.

Significant changes in use or care of human subjects, vertebrate animals, biohazards, and/or select agents

Significant changes in use or care of human subjects

Nothing to report

Significant changes in use or care of vertebrate animals

Nothing to report

Significant changes in use of biohazards and/or select agents

Nothing to report

6. PRODUCTS:

Nothing to report

Books or other non-periodical, one-time publications.

Nothing to report

Other publications, conference papers and presentations.

Publication & Citation		
Publication	Journal Impact Factor	No. of Citation
Andrei Gafita, Jeremie Calais, Tristan R Grogan, Boris Hadaschik, Hui Wang, Manuel Weber, Shahneen Sandhu, Clemens Kratochwil, Rouzbeh Esfandiari, Robert Tauber, Anna Zeldin, Hendrik Rathke, Wesley R Armstrong, Andrew Robertson, Pan Thin, Calogero D'Alessandria, Matthew B Rettig, Ebrahim S Delpassand, Uwe Haberkorn, David Elashoff, Ken Herrmann, Johannes Czernin, Michael S Hofman, Wolfgang P Fendler, Matthias Eiber; Nomograms to predict outcomes after ⁷⁷Lu-PSMA therapy in men with metastatic castration-resistant prostate cancer: an international, multicentre, retrospective study. Lancet Oncology. 2021 July 8.	41.32	Just published
Hofman MS, Emmett L, Sandhu S, Iravani A, Joshua AM, Goh JC, Pattison DA, Tan TH, Kirkwood ID, Ng S, Francis RJ, Gedye C, Rutherford NK, Weickhardt A, Scott AM, Lee ST, Kwan EM, Azad AA, Ramdave S, Redfern AD, Macdonald W, Guminski A, Hsiao E, Chua W, Lin P, Zhang AY, McJannett MM, Stockler MR, Violet JA, Williams SG, Martin AJ, Davis ID; TheraP Trial Investigators and the Australian and New Zealand Urogenital and Prostate Cancer Trials Group. [¹⁷⁷ Lu]Lu-PSMA-617 versus cabazitaxel in patients with metastatic castration-resistant prostate cancer (TheraP): a randomised, open-label, phase 2 trial. Lancet. 2021 Feb 27;397(10276):797-804.	60.39	28
Emmett L, Subramaniam S, Joshua A, Crumbaker M, Martin A, Zhang AY, Rana N, Langford A, Mitchell J, Yip S, Francis R, Hofman MS, Sandhu S, Azad A, Gedye C, McJannett M, Stockler MR, Davis ID; Australian and New Zealand Urogenital and Prostate Cancer Trials Group (ANZUP) and the ENZA-p investigators. ENZA-p trial protocol: A randomised phase II trial using PSMA as a therapeutic target and prognostic indicator in men with metastatic castration-resistant prostate cancer treated with enzalutamide (ANZUP 1901). BJU Int. 2021 May 24.	4.81	recently published
Gafita A, Wang H, Robertson A, Armstrong WR, Zaum R, Weber M, Yagubbayli F, Kratochwil C, Grogan TR, Nguyen K, Navarro F, Esfandiari R, Rauscher I, Menze B, Elashoff D, Delpassand ES, Herrmann K, Czernin J, Hofman MS, Calais J, Fendler WP, Eiber M. Tumor sink effect in ⁶⁸Ga-PSMA-11 PET: Myth or Reality? J Nucl Med. 2021 May 28	10.57	0
Dhiantravan N, Emmett L, Joshua AM, Pattison DA, Francis RJ, Williams S, Sandhu S, Davis ID, Vela I, Neha N, Bressel M, Murphy DG, Hofman MS, Azad AA. UpFrontPSMA: A Randomised Phase 2 Study of Sequential	4.81	1

¹⁷⁷Lu-PSMA617 and Docetaxel versus Docetaxel in Metastatic Hormone-Naïve Prostate Cancer. BJU Int. 2021 Mar 7		
Le Pennec R, Iravani A, Woon B, Dissaux B, Gest B, Le Floch PY, Salatin PY, Le Gal G, Hofman MS, Hicks RJ, Le Roux PY. Gallium-68 Ventilation/Perfusion PET-CT and CT Pulmonary Angiography for Pulmonary Embolism Diagnosis: An Interobserver Agreement Study. Front Med 2021 Feb 16	4.47	0
McIntosh L, Jackson P, Hardcastle N, Bressel M, Kron T, Callahan JW, Steinfort D, Bucknell N, Hofman MS, Siva S. Automated assessment of functional lung imaging with ⁶⁸Ga-ventilation/perfusion PET/CT using iterative histogram analysis. EJNMMI Phys. 2021 Mar 7;8(1):23.	3.01	0
McIntosh L, Jackson P, Hardcastle N, Bressel M, Kron T, Callahan JW, Steinfort D, Bucknell N, Hofman MS, Siva S. Automated assessment of functional lung imaging with ⁶⁸Ga-ventilation/perfusion PET/CT using iterative histogram analysis. EJNMMI Phys. 2021 Mar 7;8(1):23.	3.01	0
Subramaniam S, Callahan J, Bressel M, Hofman MS, Mitchell C, Hendry S, Vissers FL, Van der Hiel B, Patel D, Van Houdt WJ, Tseng WW, Gyorki DE. The role of ¹⁸F-FDG PET/CT in retroperitoneal sarcomas-A multicenter retrospective study. J Surg Oncol. 2021 Mar;123(4):1081-1087	1.96	1
Osman MM, Iravani A, Hofman MS, Hicks RJ. Intra-patient comparison of physiologic ⁶⁸Ga-PSMA-11 and ¹⁸F-DCFPyL PET/CT uptake in ganglia in prostate cancer patients: a pictorial essay. Cancer Imaging. 2021 Apr 16;21(1):35.	2.19	0
de Feria Cardet RE, Hofman MS, Segard T, Yim J, Williams S, Francis RJ, Frydenberg M, Lawrentschuk N, Murphy DG, De Abreu Lourenco R. Is Prostate-specific Membrane Antigen Positron Emission Tomography/Computed Tomography Imaging Cost-effective in Prostate Cancer: An Analysis Informed by the proPSMA Trial. Eur Urol. 2021 Mar;79(3):413-418.	17.95	6
Dhiantravan N, Violet J, Eapen R, Alghazo O, Scalzo M, Jackson P, Keam SP, Mitchell C, Neeson PJ, Sandhu S, Williams SG, Moon D, Lawrentschuk N, Azad A, Hofman MS, Murphy DG. Clinical Trial Protocol for LuTectomy: A Single-arm Study of the Dosimetry, Safety, and Potential Benefit of ¹⁷⁷Lu-PSMA-617 Prior to Prostatectomy. Eur Urol Focus. 2020 Nov 7	3.73	4
Price A, Jackson, Michael S, Hofman, Rodney J, Hicks, Mark Scalzo, John Violet. Radiation Dosimetry in ¹⁷⁷Lu-PSMA-617 Therapy Using a Single Post treatment SPECT/CT Scan: A Novel Methodology to Generate Time- and Tissue-Specific Dose Factors. The Journal of Nuclear Medicine. 2020 July, Vol 61, No. 7: 1030-1036	10.57	13
Davies A, Foo M, Gan CL, Kourambas J, Redgrave N, Donnellan S, Appu S, Williams S, Coleman A, Segelov E, Bradley J, Soo G, Ramdave S, Kwan EM, Azad AA. ⁶⁸Ga-prostate specific membrane antigen (PSMA) PET/CT as a clinical decision-making tool in biochemically recurrent prostate cancer. Asia Pac J Clin Oncol (in press)	2.01	0
Risbridger GP, Clark AK, Porter LH, Toivanen R, Bakshi A, Lister NL, Pook P, Pezaro CJ, Sandhu S, Keerthikumar S, Quezada Urban R, Papargiris M, Kraska J, Madsen H, Wang H, Richards MG, Niranjana B, O'Dea S, Teng L, Wheelahan W, Li Z, Choo N, MURAL, Ouyang JF, Thorne H, Devereux L, kConFab, Hicks R, Sengupta S, Harewood L, Iddawala M, Azad AA, Goad J, Grummet J, Kourambas J, Kwan EM, Moon D, Murphy DG, Pedersen J, Clouston D, Norden S, Ryan A, Furic L, Goode DL, Frydenberg M, Lawrence MG, Taylor RA (2021) The MURAL collection of prostate cancer	14.92	0 This paper reports the MURAL PDX collection which represents a major proportion of the prostate cancer PDXs available world-wide. Expected media attention when the publication is released -August – September 2021

patient-derived xenografts enables discovery through preclinical models of uro-oncology Nature Communications, In Press, Accepted July 27th 2021		
Choo N, Ramm S, Luu J, Winter JM, Selth LA, Dwyer AR, Frydenberg M, Grummet J, Sandhu S, Hickey TE, Tilley WD, Taylor RA, Risbridger GP, Lawrence MG, Simpson KJ. (20210 High-Throughput Imaging Assay for Drug Screening of 3D Prostate Cancer Organoids. SLAS Discov. 2021 Jun 11:24725552211020668. doi: 10.1177/24725552211020668. PMID: 34111999	2.62	
Lai J, Mardiana S, House IG, Sek K, Henderson MA, Giuffrida L, Chen A, Todd KL, Petley EV, Chan JD, Solomon BL, Trapani JA, Kedzierska K, Vervoort SJ, Wiathman J, Darcy PK, Beavis PA: Adoptive cellular therapy with T cells expressing the dendritic cell growth factor Flt3L drives epitope spreading and anti-tumour immunity. Nature Immunol 21: 914-926, 2020.	20.47	35
Chan JD, von Scheidt B, Zeng B, Oliver AJ, Davey AS, Thomas R, Trapani JA, Darcy PK, Kershaw MH, Dolcetti R, Slaney C: Enhancing CAR T cell immunotherapy against cancer using a nanoemulsion-based vaccine targeting cross-presenting dendritic cells. Clinical Translational Immunology 9: e1157, 2020.	5.94	4
Pereraz MPJ, Thomas PB, Risbridger GP, Taylor RA, Azad A, Williams ED, Vela I (2021) Chimeric antigen receptor T-cell therapy in metastatic castrate resistant prostate cancer (in review).		0

*these manuscripts do not all directly relate to UpFrontPSMA. The findings, however, have contributed indirectly to this research and DoD is consistently acknowledged as funders of future research activity like UpFrontPSMA

Website(s) or other Internet site(s)

Nothing to report

- **Technologies or techniques**

Nothing to report

- **Inventions, patent applications, and/or licenses**

Nothing to report

- **Other Products**

Nothing to report

7. PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS

In 2020/2021 there were some changes to staffing

1. Dr John Violet Co PI tragically passed away (role not replaced)
2. Dr Nattakorn Dhantravan accepted a full time position at Royal Brisbane Hospital, Queensland Australia (PhD candidature - not replaced, however central scan reading review position has been absorbed by another PMCC Nuclear Medicine Physician, Dr Javad Saghebi)
3. Ms Annette Van Der Heyden was promoted and clinical trial coordination and administration now supported by Mr Gaurav Sharma.

Name:	Professor Michael Hofman
Project Role:	PI
Research Identifier:	ORCID 0000-0001-8622-159X
Nearest Person Month Worked:	6
Contribution to Project	PI Study design Writing Protocols Submitting Ethics documents
Funding Support	n/a

Name:	Associate Professor Arun Azad
Project Role:	Co-PI
Research Identifier:	ORCID 0000-0002-0579-4052
Nearest Person Month Worked:	5
Contribution to Project	Co PI Study design Writing Protocols Submitting Ethics documents
Funding Support	n/a

Name:	Professor Declan Murphy
Project Role:	Co-PI
Research Identifier:	ORCID 0000-0002-7500-5899
Nearest Person Month Worked:	2
Contribution to Project	Co PI Protocol Review
Funding Support	n/a

Name:	Professor Scott Williams
Project Role:	Co-PI
Research Identifier:	ORCID 0000-0002-1357-0884
Nearest Person Month Worked:	2
Contribution to Project	Co PI Study design Writing Protocols
Funding Support	n/a

Name:	Dr Javad Saghebi
Project Role:	Central Review Consultant
Research Identifier:	N/A
Nearest Person Month Worked:	1
Contribution to Project	Consultant seeing trial patients Central Review team member
Funding Support	DoD 20%

Name:	Mr Gaurav Sharma
Project Role:	Project Officer/Research Coordinator
Research Identifier:	N/A
Nearest Person Month Worked:	4
Contribution to Project	Administration support (Note Mr Sharma replaced Dr Bec Loh)
Funding Support	DoD (50%)

Other Collaborating Organisations

- Australian and New Zealand Urogenital and Prostate Cancer Trials Group (ANZUP): Review of protocol, clinical expertise network, information sharing and project promotion, co-badging partner.
- Centre for Biostatistics and Clinical Trials (BaCT): Will provide biostatistics support for the study
- Australasian Radiopharmaceutical Trials network (ARTnet): Review of protocol and providing Nuclear Medicine expertise.
- Australian Nuclear Science and Technology Organisation (ANSTO): Supplier of subsidised Lutetium-177
- Endocyte/Advanced Accelerator Applications (AAA), the radioligand business of Novartis, manufacturer of PSMA-617: supplying FOC PSMA-11 & PSMA-617 to patients on experimental arm of study and financial support.

Has there been a change in the active other support of the PD/PI(s) or senior/key personnel since the last reporting period?

Nothing to report

What other organizations were involved as partners?

Nothing to report

8. SPECIAL REPORTING REQUIREMENTS

Nothing to report

9. APPENDICES

Not required