

Fig. 1

1. [REDACTED] DOB 1962-08-08	Pluvicto
Progress 4/6	
2025-10-09 Administered: 191.78 mCi	2025-11-20 Administered: 200 mCi
2026-01-08 Administered: 206.9 mCi	2026-02-26 Administered: 200.2
04/02/2026	05/14/2026

2. [REDACTED] DOB 1965-05-09	Pluvicto
Progress 5/6	
2025-09-11 Administered: 206.1 mCi	2025-10-23 Administered: 199.3 mCi
2025-12-04 Administered: 199.6 mCi	2026-01-15 Administered: 204.6 mCi
2026-02-26 Administered: 199.8	04/09/2026

METHODS AND MATERIALS

The TWMT is designed as a web-based server-client system to manage Theranostic workflow efficiently, collect data and reduce paperwork. Server end is implemented with python, which takes patient information from RadOnc EMR system and input from end user on the day of treatment to build a local database shared in the department. Client browser from anywhere inside department could access the TWMT interface and the dynamic web content is built with HTML, CSS and JavaScript.

RESULTS

The TWMT is built in house with three modules including patient schedule, treatment sessions and waste management. Patient schedule is directly obtained from EMR system. Treatment sessions requires end user input which contains pre-treatment information including prescribed dose activity, assayed dose activity, dose package information along with time of administration and post treatment information including time of post survey, patient post injection survey readings and residual activity. Percentage difference from prescribed dose will be calculated in the background and reflected in the dynamic web content. Patient survey readings will be analyzed against historical data to alert physicist if anything unusual for patient release. Patient treatment post treatment survey document and waste management document could be generated in the template in compliance. Various reports can be generated for management reporting purpose and data analysis.

Pluvicto Session - Edit

Fig. 2

Patient

Personnel

Dose Assay

Dose Verification

Patient Release

Survey

Lot Number

Drawn By

135518

MB

Assayed Activity

Volume (cc)

206

12

Close

Save Session

Decay Room

Waste Logs

Weekly Wipes

Decay Room Waste Logs

Quarter	Start Date	Days in Decay	Disposal By	Disposal Date	Disposal method	Box #	Patient	Dose #	Action & Status
3	9/11/2025	67	ZL	11/17/2025	blowaste	1	Brink, Michael	1	Disposed
3	9/25/2025	77	zl	12/11/2025	blowaste	2	Brink, Michael	4	Disposed
4	10/9/2025	85	zl	1/2/2026	blowaste	3	Brink, Michael	1	Disposed
4	10/9/2025	85	zl	1/2/2026	blowaste	3	Brink, Michael	1	Disposed
4	10/9/2025	85	zl	1/2/2026	blowaste	3	Brink, Michael	1	Disposed
4	10/23/2025	71	zl	1/2/2026	blowaste	4	Brink, Michael	2	Disposed
4	11/6/2025	75	zl	1/20/2026	blowaste	5	Brink, Michael	5	Disposed
4	11/6/2025	75	zl	1/20/2026	blowaste	5	Brink, Michael	5	Disposed
4	11/20/2025	67	zl	1/26/2026	blowaste	6	Brink, Michael	2	Disposed
4	12/4/2025	67	zl	2/9/2026	blowaste	7	Brink, Michael	3	Disposed
4	12/11/2025	67	zl	2/16/2026	blowaste	8	Brink, Michael	1	Disposed
1	1/2/2026	196		3/10/2026	blowaste	9	Brink, Michael	6	Disposed
1	1/15/2026	183		3/23/2026	blowaste	10	Brink, Michael	2	Disposed
1	1/15/2026	183		3/23/2026	blowaste	10	Brink, Michael	2	Disposed

Waste Logs

Weekly Wipes

Fig. 3

Weekly Wipes Records

Pages: 0 1 2

Date	Year	Week	Background (CPM)	Door (DPM)	Chair (DPM)	Floor (DPM)	Rack (DPM)	Survey By	Action & Status	Note
2026-02-25	2026	9	130	0	0	0	0	YM	Completed	
2026-02-19	2026	8	103	18	28	34	23	YM	Completed	
2026-02-12	2026	7	136	0	0	0	0	YM	Completed	
2026-02-05	2026	6	123	0	38.5	0	0	YM	Completed	
2026-01-29	2026	5	102	21.5	0	21.5	33.8	YM	Completed	
2026-01-22	2026	4	109	29	8	41	49	YM	Completed	
2026-01-15	2026	3	114	4	0	19	23	-	Completed	
2026-01-08	2026	2	107	22	2	13	16	-	Completed	
2026-01-02	2026	1	134	11	0	53	133.8	-	Completed	

DISCUSSION

The rapid rising of Theranostic cases in radiation oncology introduce opportunity for physicists and RadOnc administrators to manage the workflow more efficiently. Traditional practice of Theranostic especially in the NucMed department is purely paperwork, leading to type in errors, calculation errors resulting in inspection issues and multiple entries due to multiple sources’ paperwork needs. Our TWMT is innovate as it organizes all the patient data, treatment data and waste management data in the tool and significantly reduces duplicate entries and paperwork. All the data will be saved in a local database which makes data analysis and multiple report generation possible.

Patient schedule module (PSM) includes Patient’s information and patient’s schedule along with prescription information which are automatically populated from RadOnc EMR system. (Fig 1).

Physicists will fill in the RX information in the details of the treatment session module (TSM, Fig 2) and the administered activity will reflect on PSM as well. Patient release measurement is entered and tracked in the TSM. In the waste management module (WMM), weekly wipe test and patient waste log is stored and analyzed in separate tabs (Fig 3). Future development includes data extraction and collection from labs and images post treatment for potential adaptive therapy.

CONCLUSIONS

The developed TWMT is lightweight and improves Theranostic program efficiency significantly while reduce errors and duplications. The data analysis tool in built will be the foundation of future adaptive Theranostic therapy.

Weekly Wipes Form

Date: 03/17/2026

Standard Readings (DPM)

Background (CPM) Door Chair Rack Floor

Ludlum Readings (mR/hr)

Lud. Bkg Lud. Door Lud. Chair Lud. Rack Lud. Floor

Survey By: Select

Comments:

Cancel Submit

REFERENCES

1. [PLUVICTO® and Luthathera® \(lutetium Lu 177\)](#)