

Service Evaluation of PDR Brachytherapy Pathway for the Treatment of Endometrial Cancer

Figueroa Merino, S.N. MSc^{1,2}, Burke, G. PgCLTHE¹, Taylor, A. PhD^{1,2}, Harrison, R.², Morrison, R. MSc²
 1. Sheffield Hallam University, 2. Weston Park Hospital, Sheffield

BACKGROUND

Pulse Dose Rate (PDR) brachytherapy is used for patients with early stages of endometrial cancer [1]. This treatment is invasive, uncomfortable, painful and causes of anxiety. It can result in patients experiencing fear and humiliation, sometimes considered as one of their "worst experiences" [2]. It can be difficult for the patient to tolerate due to restricted mobility and bed bound requirement [3]. Although this treatment can be delivered in 12 to 21 hours [4], treatment times from when patient arrives to theatre to when patient finish treatment have been recorded as long as 28 hours with in the local department. A service evaluation was undertaken to review the delivery of the Pulse Dose Rate service, aiming to discovering trends or bottlenecks which could be addressed to improve patient experience.

METHOD

Local and university ethical approvals were obtained. A review of the Pulse Dose Rate service was undertaken (Fig 1) to identify key activities and timestamps which were to be examined during the service evaluation (fig. 2). A total of 19 activities were identified.

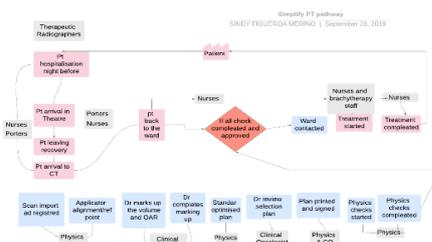


Fig.1 PDR brachytherapy patient pathway

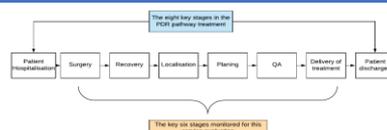


Fig.2 Highlighting the main six stages covered in this service evaluation.

The data collection log was co-designed between key stakeholders to record information specific to each of the 19 activities (table 1). Data included activity length and beginning and end times. There was also space for the health professionals involved in the activity to record comments; this allowed details of any specifics or complications which impacted on the activity length to be noted, aiding the analysis.

The timestamps survey included all patients receiving Pulse Dose Rate for endometrial and cervical cancer during February to September 2019.

Activity	Professional
Ready for Surgery	Surgery
ab Procedure start	
bc Procedure Finish	Recovery
cd Arrival time in CT or MRI	
de Time complete in CT or MRI (E)	Localisation
ef Scan imported and registered (with diagnostic)	
fg Applicator alignment/ref point definition	
gh Dr starts to mark-up volumes	
hi Dr completes marking up	
ij Standard and optimised planning completed (E)	
jk Dr review/selection of plan	Planning
kl Plan printed/signed ready for checking	
lm Plan signed by Dr	
mn Physics checks started	
no Physics checks completed	
op Ward contacted	QA
pq Treatment Started c	
qr Treatment Completed (E)	Delivery of Treatment

Table 1. 19 activities from the PDR BT

RESULTS

Data sets for twenty patients were collected. The analysis identified 5 potential areas which could result in delays across the 19 activities. Staff shortages, technical and individual patient issues were commonly recorded as the cause of these delays, as seen in Figure 3.

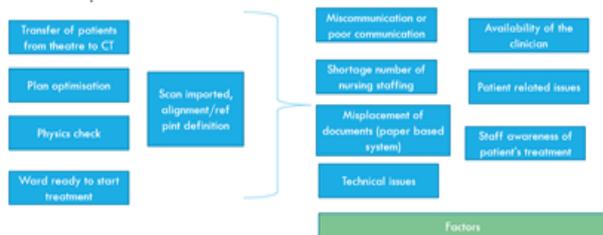


Fig.3 Main areas for improvement and possible factors

SUGGESTIONS TO STREAMLINE THE SERVICE:

- ✓ The findings identified several implications to the Pulse Dose Rate process and its practice which could hold potential to reduce the delays experienced by these patients:
- ✓ Established a standard of practice which outlines a designed pathway to include key workers, their responsibility, and estimated times in each phase, to aid accountability and to improve team communication.
- ✓ Designate individual codes to aid the transfer and movements of patients e.g. to differentiate between those patients going to CT and MRI.
- ✓ Review the potential delegation of tasks to other professionals from PDR nurses to aid the shortage of staffing numbers in nursing.
- ✓ Increase the use of library plans to speed up the process of treatment planning and reduce possible technical issues in planning.
- ✓ Transfer the delineation of Organs At Risk (OAR) to therapeutic radiographers from Pulse Dose Rate clinicians.
- ✓ Create a check list to aid with patient's issues in the ward in stages prior of "treatment started" containing e.g. assessment of patient's pain levels.

STRENGTHS

- ✓ By including the brachytherapy multi-disciplinary team in the conception of the idea and the co-production of research tool aided engagement and use of the data collection. This resulted in 20 full data sets being generated.
- ✓ The work has established a base line for any future service evaluation in brachytherapy pathway.
- ✓ Has open up new opportunity to do a comparative study with the new library plans.
- ✓ Although only data a small sample size was included, this was representative of the number of Pulse Dose Rate patients at the clinical department.

CONCLUSION

The findings highlighted the need to review several practices undertaken as standard during the PDR pathway. It offered a way to visualise factors of delays and insight into possible solutions. By making simple modifications to practice and by following some of the recommendations it will streamline the process for these patients, reducing the time taken to complete the Pulse Dose Rate brachytherapy pathway and improving patient experience.

REFERENCES

1. Sundar, S., Balega, J., Crosbie, E., Drake, A., Edmondson, R., Fotopoulou, C., Gallos, I., Ganesan, R., Gupta, J., Johnson, N., Kitson, S., Mackintosh, M., Martineed, Rolland, P., Singh, K., Sivalingam, V., Walther-Hirsch, A., P., Miles, P., Rafii, T., Reed, N., Rocka, A., Roland, P., Sarhanis, P. (2017). BGCS Uterine Cancer Guidelines: Recommendations for Practice. British Gynaecological Cancer Society
2. Dzaka, AD., Maree, JE. (2016). Experiences of women receiving high dose rate brachytherapy for cervical cancer at an academic hospital. South Afr J Gynaecol Oncol. 8(2), 42-45. Retrieve from <http://creativecommons.org/licenses/by-nc/3.0>
3. Velji, K., & Fitch, M. (2001). The experience of women receiving brachytherapy for gynaecologic cancer. Oncology Nursing Forum, 28(4), 743-751.
4. Local NHS site flyer for patient information in PDR treatment.



Sindy Nancy Figueroa Merino
sindynancyfigueroa@gmail.com
 07443422394