Improving Theranostic Clinic Flow at a High-Volume Specialized Cancer Center

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Purpose:

Nuclear Imaging physicians have long been involved with diagnostic and therapeutic treatment (theranostics) with radioactive iodine. Newer Lutetium 177 therapies provide unique challenges to clinic workflow. We examined clinic flow to find areas of improvement with the goal of decreasing patient dwell time by 10% from September to December 2023.

Methods:

Nuclear Medicine clinic front desk staff, technologists, nurses, managers, physicians, and patients were interviewed to find causes of delays, dissatisfaction, and decreased efficiency as part of the stakeholder analysis. These were then analyzed to determine targets for improvement. Prior improvements included finding new clinic space for patient consultation as they require more clinic time for infusion, observation, and imaging, and dedicating one attending physician to therapy patients (previously covered both therapy and imaging interpretation) to minimize daily interruptions.

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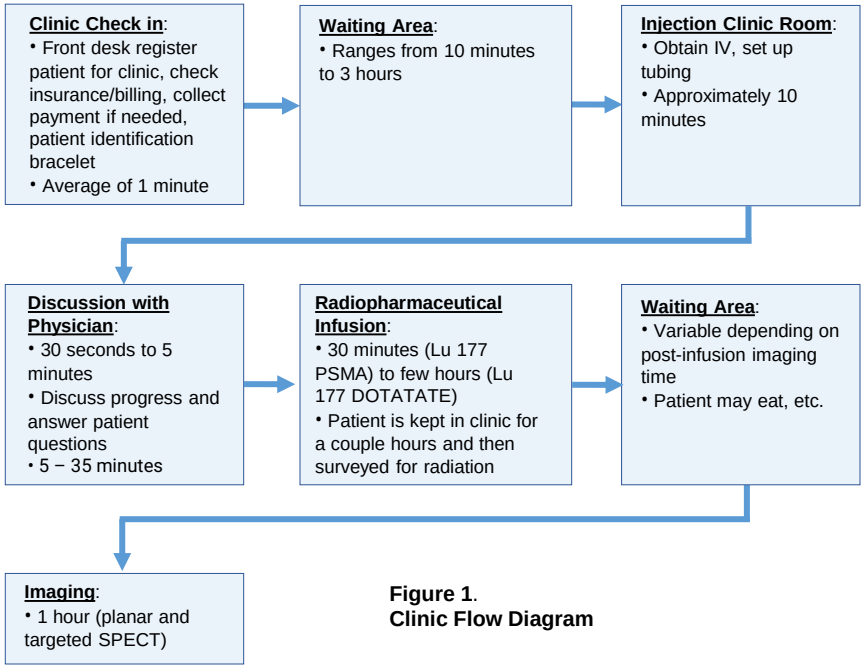

Figure 1.
Clinic Flow Diagram

Figure 2.
Areas of Improvement in Theranostic Clinic Workflow

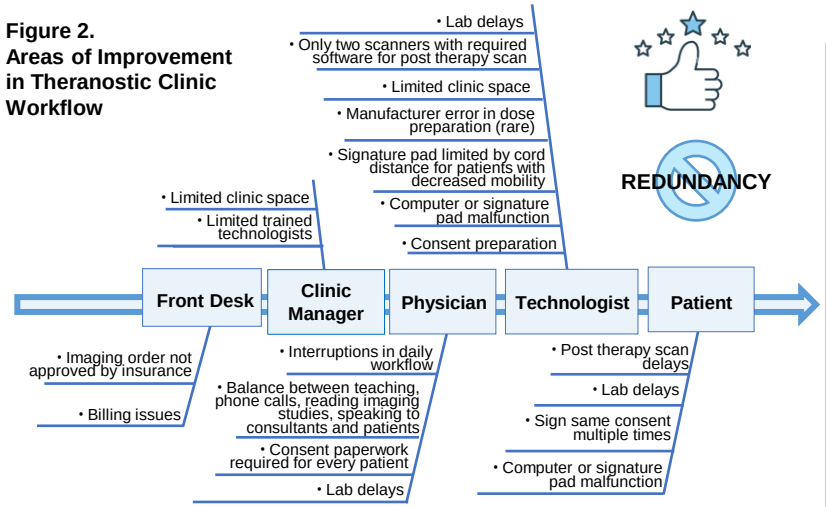

Table 1. Decision Matrix	Evaluation Criteria (1-worst to 5-best scale)					
Interventions	**Impact**	**Start-up Cost**	**Bureaucratic Feasibility**	**Time to Effect**	**Un-weighted Total**	**Weighted Score**
Weighting	30%	20%	30%	20%	-	100%
Revise consent process	2	5	4	5	16	3.8
software upgrade to more scanners	5	2	2	5	12	3.3
More patient rooms	5	1	1	5	12	3
More trained technologists and nurses	4	1	3	3	11	2.9

Results:

After observation of clinic flow (flow diagram, Figure 1), multiple areas of improvement were identified (fishbone diagram, Figure 2.). Based on the results of our decision matrix (Table 1), we focused on the consent process. Theranostic patients are usually on a standard therapy regimen with four or six doses of the same radiopharmaceutical. In our clinic, a separate consent form is required for each cycle. This is not standard across institutions or required by our policy. Average time for patient/physician consultation was 10 minutes and 15 seconds of which an average of 1 minute 55 seconds was used to review and sign the consent form. In addition, techs needed an average of 1 minute 40 seconds to prepare the form.

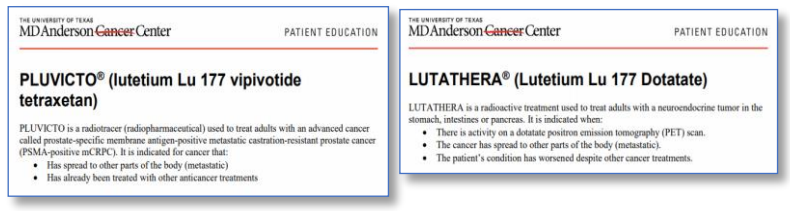

Figure 3.
Patient Education

We created a new consent form that included the full treatment regimen as well as new patient education resources (left). **Post-intervention, the average time for patient/physician consultation is 8 minutes 15 seconds, a 20% decrease.** There is still some variability as patients have different needs and questions, and total clinic dwell time of a few hours has not significantly changed, but this has allowed physicians and technologists to focus on patient care than repetitive paperwork. **With this change, we saw an increase in median satisfaction scores for technologists, nurses, and physicians regarding the consent process from 2/5 to 5/5.**

Conclusions:

Our growing theranostic clinic has increased demands for physician consultation time with patients, scanner time, and clinic space. As the workload increases in Nuclear Medicine, we will continue to optimize patient care and clinic efficiency. In this cycle, we were able to eliminate a source of redundancy in the consent/consultation process identified by patients, nurses, technologists, and physicians. Our project slightly decreased clinic time and also improved satisfaction among providers.