

Introduction

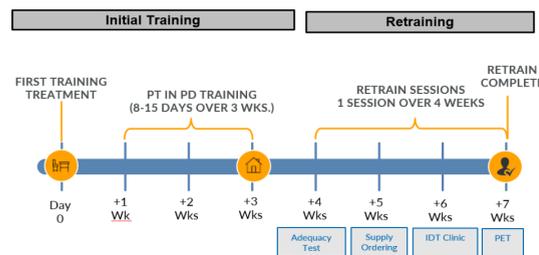
- Peritonitis is a major cause of peritoneal dialysis (PD) patient loss, particularly within the first 2 years of PD therapy.¹
- Adequate training of peritoneal dialysis (PD) patients to ensure proper technique can help to reduce peritonitis rates and subsequent PD loss.²
- In addition to the training provided at the time of PD initiation, provision of refresher training at regular intervals may play an important role in reducing mistakes.
 - In one study, assessing the PD technique of 182 patients after 6 months of being on therapy, it was observed that approximately half of the patients did not wash their hands correctly or check the bag for expiration date or leaks, and 11% did not wear their face mask.³
 - Another study examined habit formation and found that it took, on average, 66 days for a person to feel automaticity in performing a new habit.⁴
- Our own observations of exchanges performed by PD patients 30 days after completion of their initial training revealed that the majority of patients made deviations from correct procedure and connection techniques, placing them at elevated risk for contamination.

Objective

- To assess whether implementation of weekly post-training refresher sessions for new PD patients, after completion of initial PD training, could help reduce infection rates and prolong time on therapy

Methods

- This pilot considered 29 patients at single facility who initiated PD between Jul 2016 and Jul 2019; patients with primary PD failure were excluded.
- Patients received initial PD training followed by weekly refresher sessions (not billable as training) over the following 4 weeks. Post-training refresher sessions included observation of an exchange, exit site care, and review of training content.
- Peritonitis and PD loss rates for patients receiving refresher training sessions were compared to benchmark rates for 36 facility patients who initiated PD prior to implementation of the initiative (Jan 2009-Jan 2012).



Results

Figure 1: Peritonitis Episodes Before and After Refresher Training Implementation

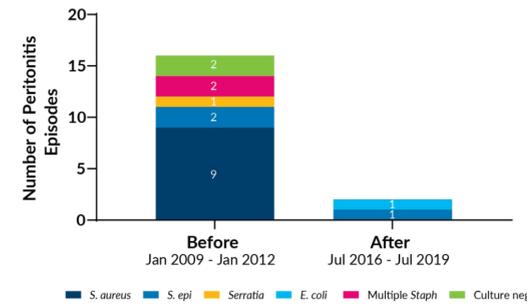


Figure 3: Time to First Peritonitis Episode Before and After Refresher Training Implementation (among patients with peritonitis only)

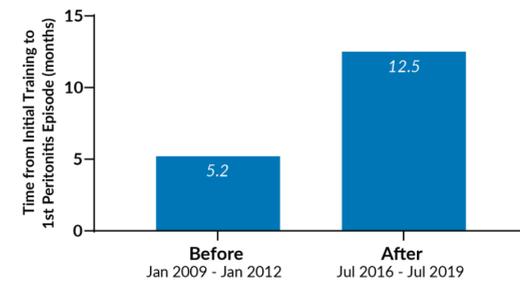
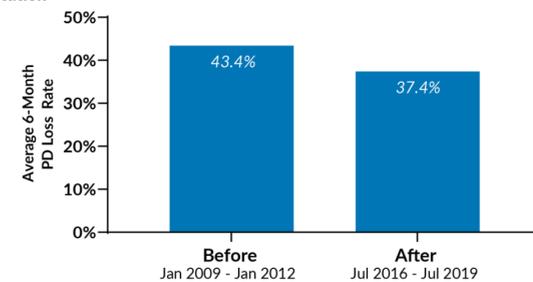


Figure 5: Average 6-Month PD Loss Rates Before and After Refresher Training Implementation



- A total of 29 patients received refresher training during the period Jul 2016 to Jul 2019.
 - There were 2 individual cases of peritonitis: causal organisms were *E. coli* and *S. epi* (Figure 1).
 - The peritonitis rate was 1 per 205 patient-months and the exit site infection rate was <1 in 410 patient months, since no episodes were observed (Figure 2).
 - Of the patients diagnosed with peritonitis, the average time on therapy to first peritonitis diagnosis was 12.5 months (Figure 3); none of the patients with peritonitis experienced multiple episodes of peritonitis (Figure 4).
 - Average initial training time was 11.2 days.
- The control group consisted of 36 patients treated at the same facility prior to implementation of the refresher training initiative (Jan 2009-Jan 2012).
 - There were 16 peritonitis episodes in 9 patients (Figure 1); 15 of these episodes were attributed to touch contamination.
 - The peritonitis rate was 1 per 30 patient-months, and the exit site infection rate was 1 per 70 patient months (Figure 2).
 - The first peritonitis episode occurred, on average, 5.2 months after starting therapy (Figure 3); of the patients with peritonitis, 67% experienced multiple episodes (Figure 4).
 - Average initial training time was 11.8 days.
- Average 6-month rolling PD loss rate was significantly higher for patients who did not receive refresher training (Figure 5).

Figure 2: Peritonitis and Exit Site Infection Rates Before and After Refresher Training Implementation

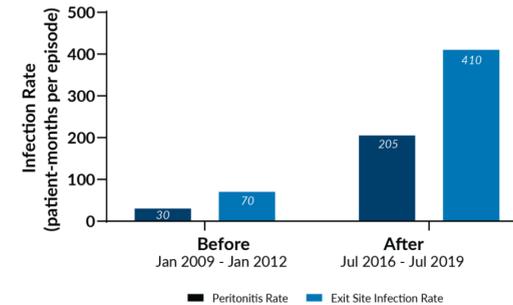
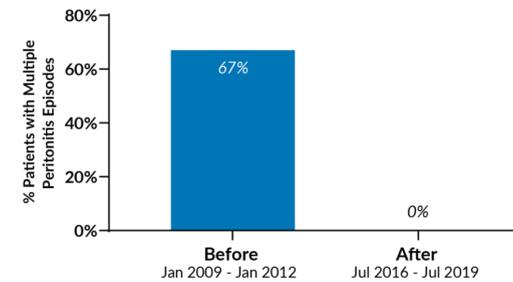


Figure 4: Patients with Multiple Peritonitis Episodes Before and After Refresher Training Implementation (among patients with peritonitis only)



Conclusions

- These findings suggest that providing refresher training sessions during the month following PD initiation may help reduce infection risk and PD loss rates:
 - Rates of both peritonitis and exit site infections were significantly reduced.
 - Among patients diagnosed with peritonitis, the length of time to first infection was greatly lengthened: from 5 months before implementation of retraining to over a year after introduction of the initiative. Moreover, after implementation of retraining, patients who did experience peritonitis did not have multiple episodes.
 - Average PD loss rates were 6 percentage points lower following implementation of refresher training.
- In addition to refresher training sessions, the facility introduced quarterly observations of exchanges for all patients starting in June 2018. This initiative may also have contributed to the observed reduction in infection rates.

References

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Correspondence: catherine.clark@davita.com

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