

Strategies to Prevent Infection-Related Losses in US Peritoneal Dialysis Programs by More Actionable Predictive Data Reporting

Martin Schreiber, MD;¹ Michelle Cassin, RN;¹ Bram Van Hout, MSc;¹
Meredith Zywno, MSPH;² Tanvi Rane, MBA, MIS¹

¹Denver, CO, USA; ²Tacoma, WA, USA

October 16, 2020



Disclosures

Martin Schreiber, Michelle Cassin, Bram Van Hout, and Tanvi Rane are employees of DaVita Inc.

Meredith Zywno is an employee of DaVita Kidney Care.



Background

- Peritoneal dialysis (PD)–associated peritonitis (PTN) accounts for a significant percentage of patients who transition to hemodialysis due to infection-related technique failure.
- Data reporting to individual PD home programs on PTN rates is designed to drive a proactive approach for optimizing infection rates in PD programs.

Objective

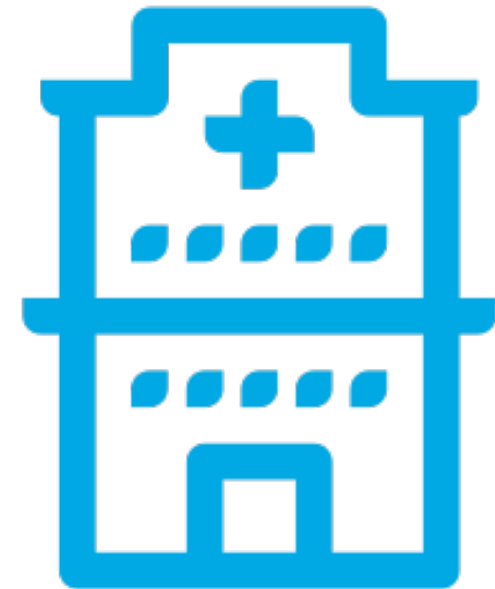
To determine if a more in-depth characterization of PTN events, with reporting on additional metrics, could advance PTN preventive strategies by reducing infection-related PD failure



Methods: Standardized Reporting

Standardized reporting of PD-related peritonitis (PTN) from 2016-2020

- Implemented for 1,338 affiliated PD programs (66,687 patients) across the United States
- Reported on a 3-month rolling average for each program, with:
 - Multiparty, inter-disciplinary, patient plus family/caregiver (up to 10 parties) video chat
 - Secure messaging and photo sharing
 - Scheduling and appointment reminders
 - Educational resources



Methods: More Actionable Predictive Data Reporting

2020 Implementation of More In-depth Characterization of PTN Events

- In order to advance PTN preventive strategies, we started reporting additional data:
 - Rates as episodes/patient-year
 - PD catheter removal rate post PTN/infection
 - Culture-negative PTN rate
 - Organism-specific PTN, with PD failure by organism
 - Percentage of patients PTN-free (cumulative patient-months without an infection)
 - Percentage of patients with >1 episode/year
 - Percentage of events occurring at <30 days or 30 to 90 days
 - PTN-associated hospitalization rates and length of stay
 - Time at risk calculation (after day 1 training)
 - PTN-associated mortality rates

Results: Additional Metrics

PTN Rates from 2019 Compared with Additional Data in 2020

Metric	2019 Results	2020 (Jan through July)
Female, n (%)	1,667 (41.9)	961 (41.3)
Observed PTN events	3,992	2,370
PTN rate, overall annualized	1 per 5.9 patient-years; 0.17 per patient per year	1 per 5.2 patient-years; 0.19 per patient per year
Patients with culture-negative PTN, n (%)	678 (17.0)	416 (17.5)
Gram-positive PTN, n (%)	1,446 (36.7)	952 (40.1)
PTN-free patients, n (%)	32,554 (90.8)	28,231 (95.4)
Fungal PTN, n (%)	79 (2.0)	65 (2.7)
Patients with any infection who experienced PD failure <30 days, n (%)	905 (22.7)	381 (17.7)
Patients with Gram-positive infection who experienced PD failure <30 days, n (%)	214 (14.6)	102 (11.9)



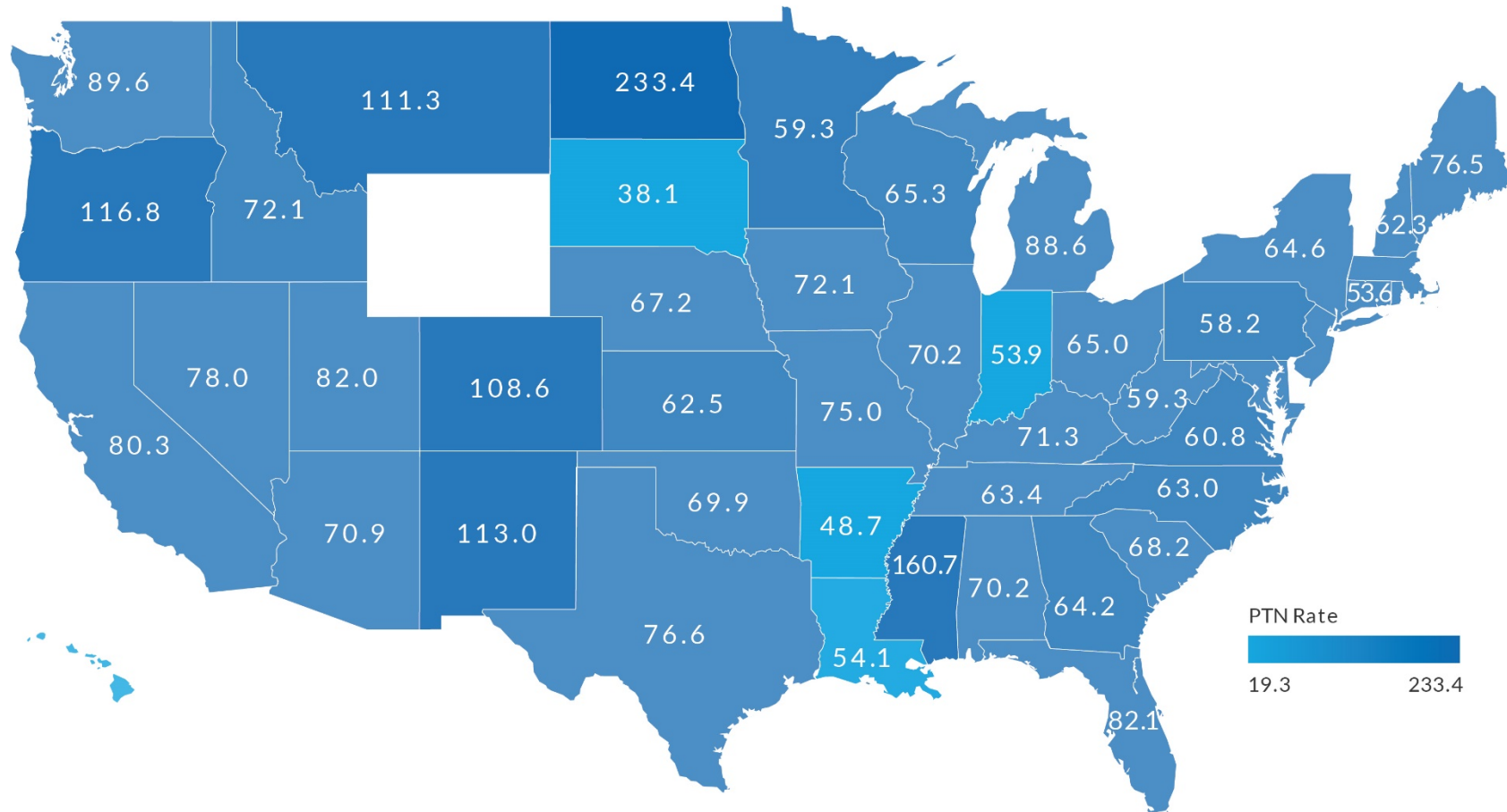
Results: 2020 Clustering Data

Patients with >1 PTN episode

- Of the 6,302 patients with at least 1 PTN infection:
 - 387 patients had 2 PTN episodes
 - 85 patients had 3 PTN episodes
 - 14 patients had 4 PTN episodes
 - 4 patients had 5 PTN episodes
 - 1 patient had 8 PTN episodes



Results: 2020 PTN Rates across the United States



Conclusions

- Reporting on additional metrics for PTN events, on a program-by-program basis, could assist in developing specific action steps that are critical in reducing infection-related PD failure.
- Incorporation of this additional data into an early warning system may help keep patients on their modality of choice.

