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PD Growth in Fraser South

A Quality Improvement Initiative

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BACKGROUND

- PD saves at least $20,000 CAD per patient year compared to that of HD while achieving similar clinical outcomes (1)
- British Columbia favours PD as the initial dialysis modality of choice, but a minority of incident ESRD patients start on PD compared to institutional HD (25 vs. 75%) (2)
- A PD unit in Fraser North has historically provided service to both Fraser North and South communities
- Having access to PD services in Fraser South was thought to remove logistical and geographical barriers to PD access in the region
- An interim Fraser South PD unit was opened in August 30, 2016 with the intent of increasing PD uptake in Fraser South
- The interim program provided PD orientation, catheter insertion, CAPD training, and an Acute PD program allowing for intermittent PD (IPD)
- Minimal resources were required for the interim unit
  - 2 PD nurses
  - Bedside PD catheters inserted in a HD procedure room
  - 2 stretchers for IPD

OBJECTIVE

We established PD program in Fraser South to increase PD uptake in the region.

METHODS

Patient data was collected from provincial renal database. The patients' clinical course was tracked by the Project Lead and from chart review.

Key steps were taken to optimize PD uptake in Fraser South (3):

1) Identifying all potential PD candidates from pre-dialysis clinic and prevalent HD patients.
2) Streamlining PD orientation process.
3) Establishing an Acute PD program with nephrologists inserting bedside PD catheters on short notice.

Primary objective was to examine if PD incidence rate increased in Fraser South communities.

We compared six months baseline PD incidence rates prior to the opening of the interim PD program to an 19 month study period thereafter (Sep 1st 2016 to March 31st 2018).

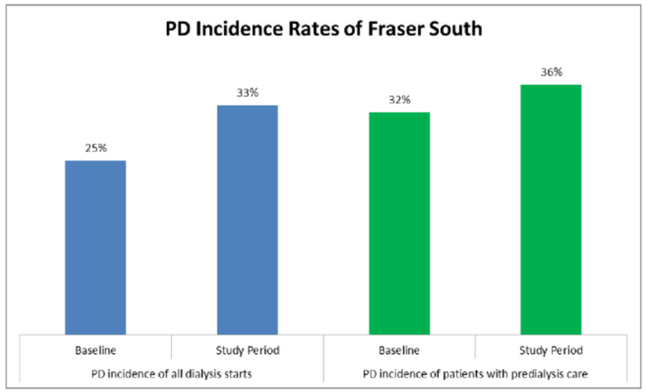
PD uptake from multidisciplinary pre-dialysis clinic was measured by calculating PD incidence rate as a percentage of patients who were registered in pre-dialysis clinic before dialysis initiation.

Secondary outcomes included peritonitis rate, PD catheter primary malfunction rate, and PD technique survival.

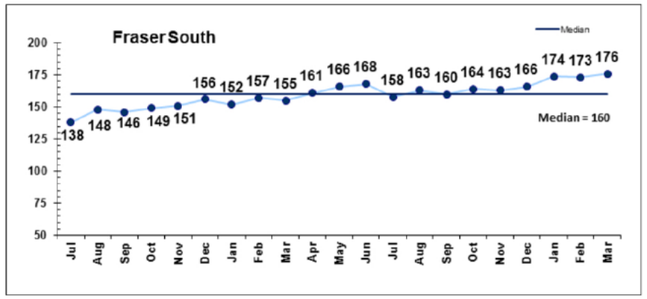
RESULTS

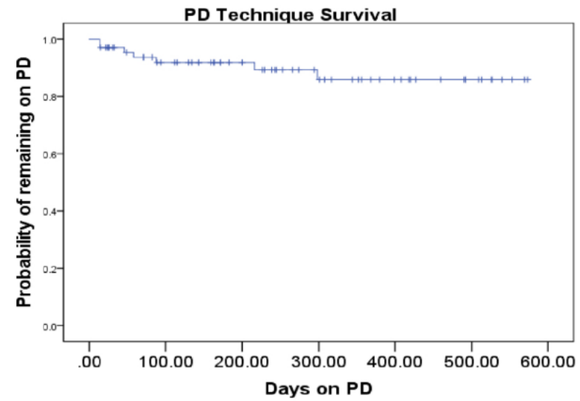
Baseline Characteristic	All n=83
Mean age (Yr)	62
Male sex (%)	54 (65)
DM (%)	51 (61)
HTN (%)	77(93)
Mean weight (kg)	78
Mean eGFR at PD catheter insertion (cc/min per 1.73 m²)	9.5

- 83 patients had PD catheters inserted over 19 months
  - 71 (86%) were bedside PD catheters by nephrologists
  - 12 (14%) were surgically inserted in operating room
  - 8 (10%) catheters had primary malfunction
- **Acute starts requiring IPD consisted of 27 (32%) patients**
- 9 (10%) patients received catheters but could not be successfully established on PD:
  - 6 patients/caregivers unable to or unwilling to do PD
  - 2 patient refused PD after catheter malfunctions
  - 1 patient received PD catheter for palliative purposes and died shortly after insertion
- **Peritonitis rate was 0.13 episodes per patient year** (16668 PD days at risk and 6 peritonitis episodes)
  - Calculations performed in accordance with ISPD guidelines (4)



Above: A total of 169 patients initiated dialysis with HD vs. 83 patients with PD. PD incidence as a percentage of all dialysis starts increased from a six month baseline of 25% to 33% during study period. PD incidence of patients who received pre-dialysis care increased modestly from 32% at baseline to 36%.





Above: The Kaplan-Meier method was used to analyze technique survival PD technique survival censored for transplant and death unrelated to PD complication. We observed a 86% chance of remaining on PD at 19 months.

Left: Run chart of active PD patients in Fraser South from July 2017 to March 2018. Growth of PD was steady throughout. A shift, which is defined as 6 points above median, is seen from October to March 2018. In comparison, Fraser North and East PD prevalence rates were unchanged over same period of time (data not shown).

CONCLUSIONS

- PD incidence rate increased by 8% after opening interim PD unit
- Number of active PD patients significantly increased during study period
- Key driver of PD growth was the ability to perform acute PD starts
- A PD program located onsite in an acute care hospital increases PD uptake by removing logistical barriers
- Proximity to PD services played an important role in patients' decisions to pursue PD
- Majority of PD catheters can be safely and expediently placed by nephrologists using minimal resources
- The interim program observed low peritonitis rates and PD technique survival comparable to literature (5)

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