



## ***VIHA Program Showcase - Tender is The Night***

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# Live Poll Question!

Could you personally adjust to sleeping 3 nights a week in a hospital?

- 1) Not a chance I could get used to that.
- 2) If it was the only way to get my days back
- 3) Maybe...could I have ear plugs and a sleep aid?
- 4) Yes, absolutely. (Nurses are nice!)



# Introducing the Island Health iNHD Program

- Introduced as pilot program starting Feb 2015 with initial cohort of 12 pts - ↑ to a 20 pt capacity.
- Model:
  - Located in the RJH hospital HD unit, 3 nights/week (M,W,F group and T, Th, Sun group)
  - 7-8 hours/night, two needles 17-18 gauge (angios preferred)
  - RN-based (current RN ratio is 1:3<sup>1/3</sup>) with some self-care expectation

# Rationale for the iNHD Program

- **Benefits of Intensive Hemodialysis**

- Survival
- Cardiovascular surrogate outcomes (LV Mass)
- Improved Blood pressure
- Improved Clearance/Phosphate
- Symptoms/QOL



- **Benefits of *In-Centre Nocturnal Hemodialysis***

- Optimal convenience (days free)
- Addresses several major obstacles to obtaining intensive dialysis at home: fear of cannulation, physical/cognitive abilities, concern over quality of care/support at home

# Patient Selection Criteria

Table 1: Patient Candidacy Criteria for the In-Centre NHD Program

Encourage NHD	Exclusion Criteria	Re-Evaluation Criteria
<p>#1 priority: <u>Calciophylaxis/Tumoral calcinosis</u></p> <p>Evidence of under-dialysis based on bloodwork and/or symptoms</p> <p>Difficulty with relatively rapid fluid removal on conventional HD</p> <p>Large fluid gains making it impossible to adhere to goal weight with conventional HD prescriptions</p> <p>Vascular access issues which prevent adequate blood pump speed to deliver adequate dialysis dose over 4 hours</p> <p>Prono to hypotension with conventional HD</p> <p>Refractory hypertension</p> <p>Patients who would be suitable for home HD but have barriers</p> <p>Home hemodialysis patient requiring temporary respite from self-care program</p> <p>Pregnancy (recommend higher frequency than 3x/week)</p> <p>Left Ventricular Hypertrophy</p> <p>Potential quality of life improvement from having daytime hours free from dialysis appointments.</p> <p>Refractory hyperphosphatemia</p>	<p><b>Absolute:</b></p> <p>Aggressive or disruptive behavior toward staff and/or other patients</p> <p>Unstable cardiac condition</p> <p>Frequent need for physician assessment</p> <p>Unstable psychiatric disorder</p> <p>Uncontrolled seizure disorder</p> <p>Cognitive impairment with confusion or agitation</p> <p>Routine IV PRN medications required during HD</p> <p>Active chemical dependency that impairs the patient's ability to assess health needs (alcohol, drug addiction)</p> <p>Inability to meet minimal expectations of patient independence</p> <p><b>Possible:</b></p> <p>Requires frequent blood transfusions (&gt; 1/month)</p> <p>Frequent need to attend the bathroom during dialysis and/or overnight</p> <p>High need for Allied Health intervention/support</p> <p>Failed trial of NHD</p> <p>Inability to meet minimal expectations of self-care (i.e. visual impairment, physical limitation)</p> <p>Inability to hold own needle sites for 3 or more subsequent dialysis runs</p> <p>Pre-existing sleeping difficulties or extreme restlessness</p> <p>Frequent "No-shows" or tardiness</p> <p>Incontinence</p> <p>Unstable vascular access (needs to be addressed before starting NHD)</p>	<p><i>The conditions below are triggers for the HD team to re-evaluate the suitability of an existing NHD patient for continuation in the NHD program. Any combination of these may result in transfer back to conventional HD. The patient may be re-evaluated in the future for readmission to the NHD program.</i></p> <p>Significant change in medical condition</p> <p>Admission as inpatient to hospital</p> <p>Increasing/frequent intradialytic complications</p> <p>Discharge of patient from hospital</p> <p>Violation of patient agreement/contract (e.g., substance abuse, dialysis attendance, safety issues)</p>
<p>Ability to (independently or with a caregiver):</p> <ul style="list-style-type: none"> <li>• Transfer in and out of bed</li> <li>• Weigh self before and after dialysis</li> <li>• Prepare self for dialysis, including gathering supplies</li> <li>• Participate, if able, in learning how to take own BP and temperature readings.</li> <li>• Hold own needle sites after dialysis (if applicable)</li> </ul>		

\*Adapted from the BCPRN Nocturnal Hemodialysis Implementation Guide June 2015)

# Patient NHD Orientation

## **1 hour orientation session:**

- Expectations of self-care and related patient teaching
- Changes to interdisciplinary follow-up
- Possible reasons for discharge (temporary or permanent)
- Patient behaviour expectations (attendance, code of conduct)
- Signed Patient Agreement (with 30 day trial period)

# "Growing Pains"

- **Patient-reported issues:**

- Disrupted sleep (snoring neighbours, machine alarms)
- Missing the face-to-face follow-up with entire renal team

- **Leadership/Programmatic Challenges**

- High overtime rates and difficulty covering sick calls
- Ensuring ideal staff experience level overnight
- Balancing staffing ratio/funding with patient acuity
- Patient suitability (use of iv sedation/analgesic/anti-emetics; patient behaviour; discharging patients from the nocturnal program against their wishes)



## Characteristics of VIHA INHD patients February, 2015 –August, 2017.

Characteristic	Total (n=42)
Mean age (yrs)	62.67
Male, n (%)	29 (69.05)
Education level, n (%)	
-Elementary	2 (4.76)
-High school	16 (38.10)
-University	20 (47.62)
-Graduate studies	4 (9.52)
Home status, n (%) own	18 (42.86)
Mean distance from unit (km)	9.90
Mean dialysis vintage (months)	45.74
Prior HD setting, n (%) RJH	25 (59.52)
Vascular access, n (%)	
-TCC	15 (35.71)
-AVF	19 (45.24)
-AVG	6 (14.29)
-AVF and TCC	2 (4.76)

Characteristic	Total (n=42)
Cause of ESRD, n (%)	
-Glomerulonephritis	21 (50.00)
-Diabetes mellitus	9 (21.43)
-Interstitial nephritis	4 (9.52)
-Polycystic kidney Hypertension	3 (7.14)
-Other	2 (4.76)
Mode of transportation, n (%)	
-Independent	26 (61.90)
-HandyDart	11 (26.19)
-Family/friends	11 (26.19)
-Taxi	2 (4.76)
Mean frailty index	3.95
Diabetic, n (%)	13 (30.95)
Prior home dialysis, n (%)	15 (35.71)
Prior renal transplant, n (%)	10 (23.81)
Mean Charlson Comorbidity	3.79
Indx	

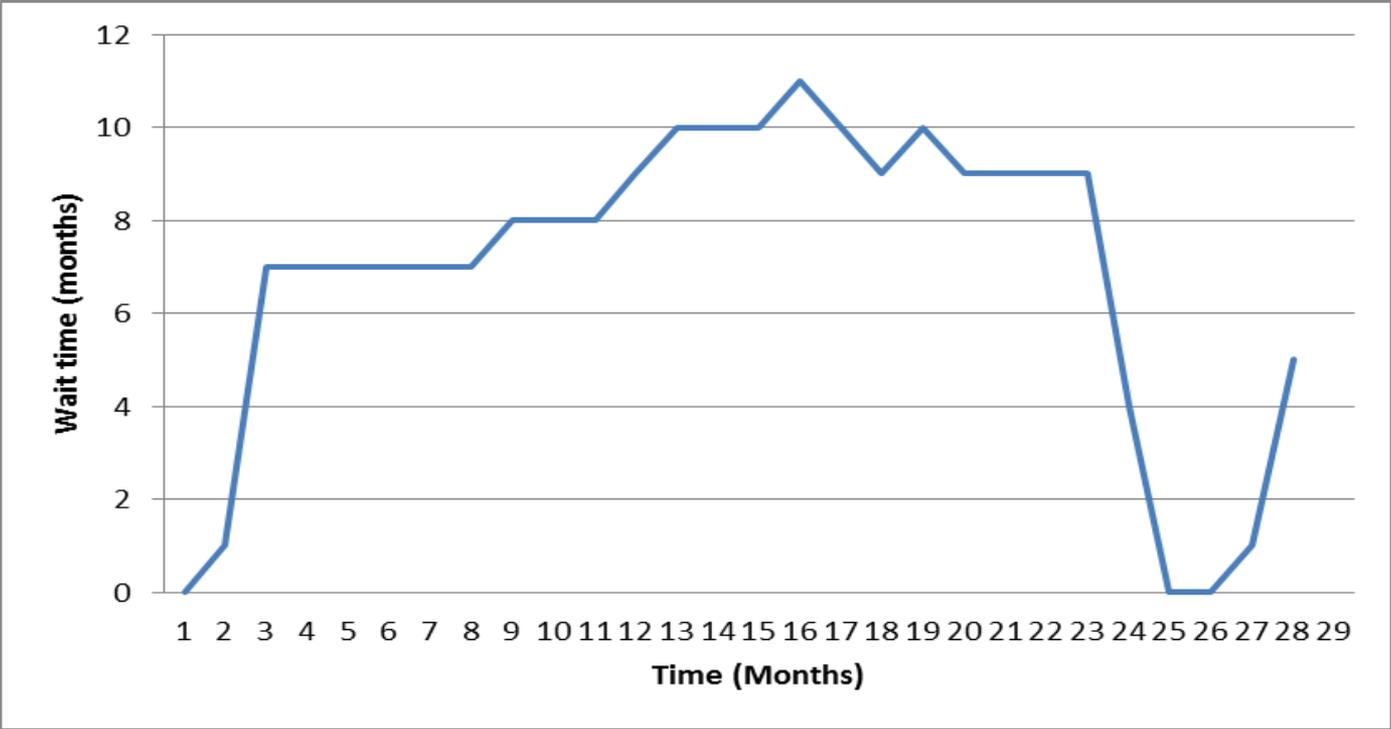
# Patient Surveys - WordMap



# Tablet Burden Over Time

<b>Milestone</b>	<b>Mean # of medications prescribed</b>	<b>Mean # of tablets/week</b>	<b>Mean total cost/week (\$)</b>
Start-up	10.10	71.54	127.00
6-month	9.35	55.61	123.80
1-year	9.13	39.13	124.94

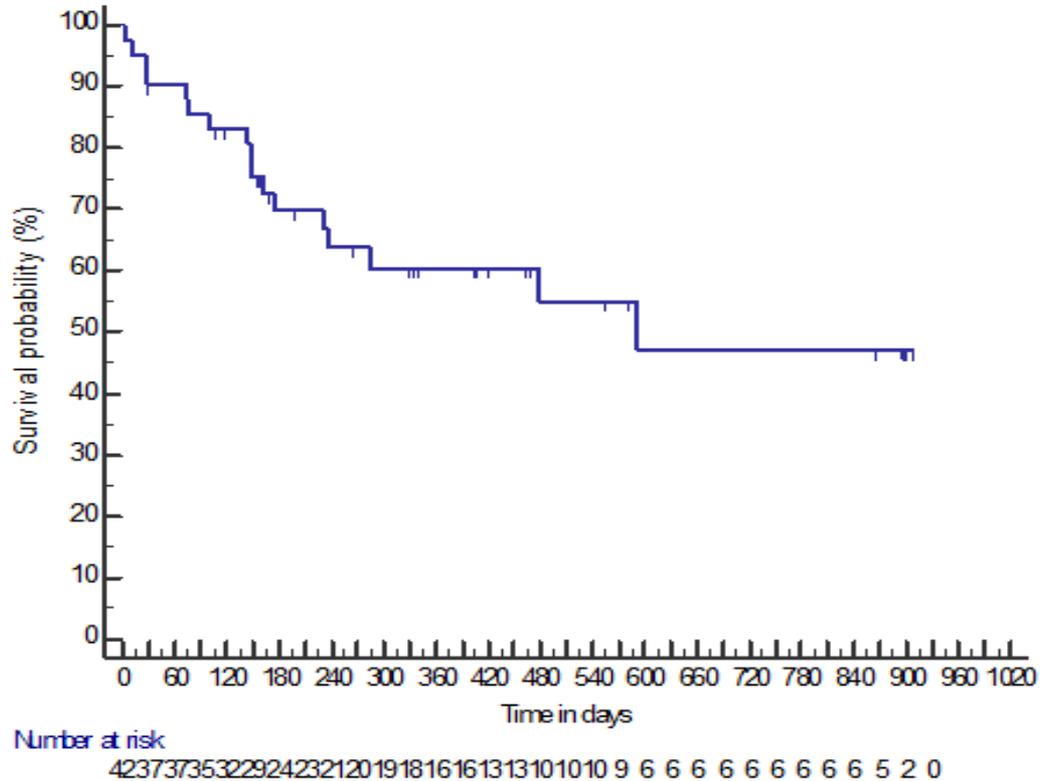
# Length of Wait Time from Program Inception



# Temporary Disruptions

- ❖ **42 Temporary disruptions in 22 patients**
- ❖ **51% of patients had at least one temporary disruption and 21% had at least 2 disruptions**
- ❖ **9% of nocturnal dialysis runs were missed due to temporary disruption (1286/14340 dialysis days)**
- ❖ **The mean length of a temporary disruption was 31 days**
  - ❖ **Reasons for temporary disruptions, n (%)**
    - Vascular access issues (36%)
    - Cardiac event (29%)
    - Infection (24%)
    - GI Issue (bleed, diarrhea) (12%)
    - Fall or fracture (12%)
    - Change in medical status (Other) (5%)
    - Travel (5%)

# Modality Survival



# Predictors of 6-month Modality Survival

<b>Univariate Predictors Modality failure</b>	<b>OR (95% CI)</b>
Frailty Index >5 (at least “moderately frail”)	7.36 (0.69-78.72)
Permacath dialysis access	3.67 (0.83 -16.04)
Handidart dependence for transportation	3.45 (0.82-14.47)
Age (yearly increments)	1.01 (0.97-1.06)
Dialysis Vintage (yearly increments)	1.11 (0.95-1.3)
Home ownership	0.64 (0.17-2.4)

<b>Multivariate Predictors Modality failure</b>	<b>OR (95% CI)</b>
Frailty Index >5 (at least “moderately frail”)	11.54 (0.7-191.35)
Permacath dialysis access	4.54 (0.83-25.01)
Handidart dependence for transportation	2.67 (0.54-13.18)

# Conclusions:

- INHD allows improvements to subjective well-being and enhanced scheduling freedom.
- These benefits are partially offset by sleeping and commuting difficulties.
- ~10% of scheduled INHD runs are missed, predominantly due to medical complications related to vascular access, cardiac events, and infections.
- INHD patients enjoy marked reductions in tablet burden over time.
- Wait times for access to the INHD program was initially long (>10 months), but improved as capacity was increased and initial demand was satisfied.
- Modality survival was robust with >60% of pts remaining on INHD for >1 year.
- Reasons for discharge from the INHD program most commonly related to inability to sleep, vascular access issues, and changes in medical status.
- There were no statistically significant predictors of modality failure at 6-months, but our data suggest that **frailty** and **permacath** use may prove to be predictive in future studies with more patients and higher predictive power

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