Expansion of the Home Hemodialysis Program: Patient Selection for a 2-Machine Model
Disclosure

I have no financial relationships or other conflicts of interest to report.
Home Hemodialysis in B.C.

- Provincial Program (formerly known as IAMHD)
- BCPRA supports 11 training sites across the 5 health authorities
- Activity based funding model
- Provincial contracts for purchase of machines and supplies
Since the launch of the BC Home Hemodialysis (HHD) program in 2004, 500+ patients have been trained to manage their HHD treatments at home.

Baxter (formerly known as Gambro) was the initial machine used for HHD in the province.
Highest in Canada

BC MoH 34% Target

5.6% HHD

29.8%

21.9%

CORR 2015 Report
In late 2014, a pilot project evaluating the potential benefits of the NxStage™ hemodialysis system.

- Relatively new to the Canadian market
- Designed specifically for home use
Results of Pilot Project

- **RESULTS**- NxStage machine could be used as a second machine option for patients in the province

- **GOAL**- to reach patients that may have various limitations (physical, home, water etc.)
Two-machine model for HHD

• NB- NxStage is not intended to replace the current Baxter home hemodialysis machine

• GOAL - to increase the overall number of dialysis patients on HHD, bringing our HHD numbers to 10% (from the current level of 5.6%) within five years
Build a strong HHD program
Our HHD team

Partnership with team

VENDOR

Partnership with team

Renal Nurse

Dietitian

Laboratory Medicine Specialists and Support

General Practitioner (GP)

Patient & Family

Social Worker

Pharmacist

Nephrologist

Emergency Room Team

Hosted by BC Transplant and the BC Renal Agency
What’s different about the NxStage machine?

Well, we’re both fruit.
Another view of HD Therapy

Conventional

High Dialysate Flow
(2-3x blood flow)

Large water requirements (on-line)
Less Saturation

NxStage

Low Dialysate Flow
(1/3x blood flow)

Low water requirements (batch)
More dialysate saturation
Similarities to Peritoneal Dialysis

- Lactate based fluids
- Saturation of dialysate (dwell time)
- Dosing (prescribed clearance volume)
- Weekly Kt/V vs Daily
- Machine swap service
Similarities to Hemodialysis

- Blood flow rate dependent
- Monitor blood and fluid circuit pressures
- Any vascular access (graft, fistula, catheter)
- Anticoagulation
Renters - No renovations

- A standard electrical outlet and a simple faucet or under sink connection are all that are required to operate the NxStage System One and PureFlow SL
Low water usage

Uses 30-60L of water per treatment. Great for septic systems.
Low water usage
Learning Challenges

- Simple interface using shapes, colours, and diagrams to aid in operation of system
- Colour coded cartridge clamps to match fluid pathways
- Easy-to-use drop-in cartridge allows for easy, wipe-down disinfection after each use
Physical Limitations

Comparison

52 in

15 in
Which machine should I use?

• The HHD team has a decision making tool that will assist programs decide which machine best suits the patient
Patient Selection for a NxStage Machine

- Physical limitation/lives alone
- Learning challenge d/t low BP
- Renter
- On metered water
- Intimidated by medical equipment
Patient Selection for a NxStage Machine
Preparing Dialysate
Renter
Metered Water

60L of water for 2 dialysis treatments
Allen and HHD

Initially, Allen was not referred to the HHD program due to physical limitations and hemodynamic instability.

However, since the introduction of the NxStage machine:

- Thriving at home
- Dialyzes 6-7 days a week
- Managing with minimal assistance
- No further hemodynamic instability
Patient selection for a Baxter machine

- Remote
- In home service
- Water hardness
- 2 days travel to home (possibly more in winter months)
Welcome to Dawson City, Yukon
Spent dialysate can be measured using a combined test of diffusion and ultrafiltration (as seen in D/P ratios for PD i.e. PET tests).

How cold does it get in Dawson, Yukon?

WANTED:

TOES FOR SOURTOE COCKTAIL

“Strange things done…”

Got frostbite? The Downtown Hotel in Dawson City, Yukon is currently seeking toes for it’s World Famous Sourtoe Cocktail.

Donor will be forever immortalized in the Sourtoe Hall of Fame.

Contact adam@yukonhotels.com for details.
3000 km between Dawson City and HHD clinic
In Home Service
Need to be prepared for anything
* 8+ hour drive from Whitehorse
* Weather dependent flight once a day (except weekends)
Water hardness is 169mg/L

Requires RO and filters
Wildlife in the North
A Step-by-Step Guide

Disposal of Hemodialysis Waste
A STEP-BY-STEP GUIDE

Follow these steps after every treatment.

1. Disconnect from a dialysis machine and shunt or top sita treatment.

2. Place arterial blood line into a disposable plastic bag or container.

3. Allow arterial blood line to be cleaned up with X-Ray and other disinfectants.

4. When the ADR is done, place waste into a waste bag and then put into the household garbage.

5. Allow lines to completely empty into waste bag or into a container.

6. Remove the dialyzer from the machine.

7. Drain waste bag into the toilet.

8. Put used lines and a dialyzer into a double-blocked garbage bag.

9. Place in an area away from domestic animals or wildlife and dispose with household garbage in a suitable container.

10. It is recommended to put needles in a sharps container or put in the garbage.
Gerry and HHD

- Remote
- Vendor support in the north
- Water system
- Wildlife
Take home message

- Machine selection is based on patient needs and circumstances

- **GOAL**- to increase the overall number of dialysis patients on HHD to 10% (from the current level of 5.6%) within five years

- With the right support, almost anyone can do HHD
Acknowledgements

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• PHC HHD Program- Cecilia Chow, Mary Lewis and Emmie Tse
• Vancouver Regional Home Hemodialysis Program
• Sushila Saunders, Dr. Michael Copland and Bill Kane
• BCPRA
• Baxter
• NxStage
Questions?
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