So many diagnoses, so little hemoglobin

Allen Tran, MD, FRCPC

Disclosures

No relevant financial disclosures

Not a hugely evidence-based presentation

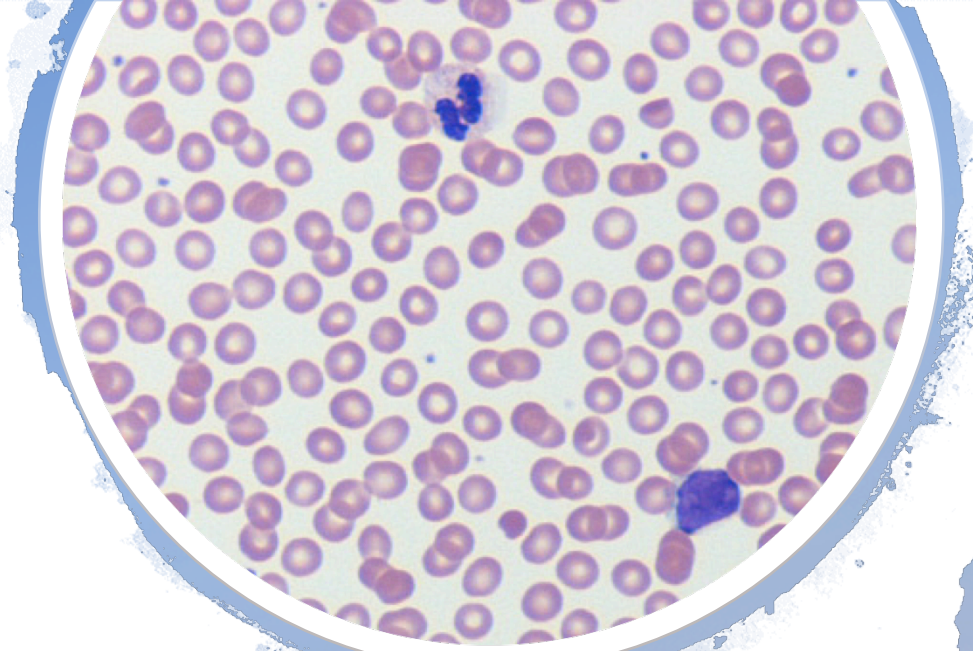
Objectives

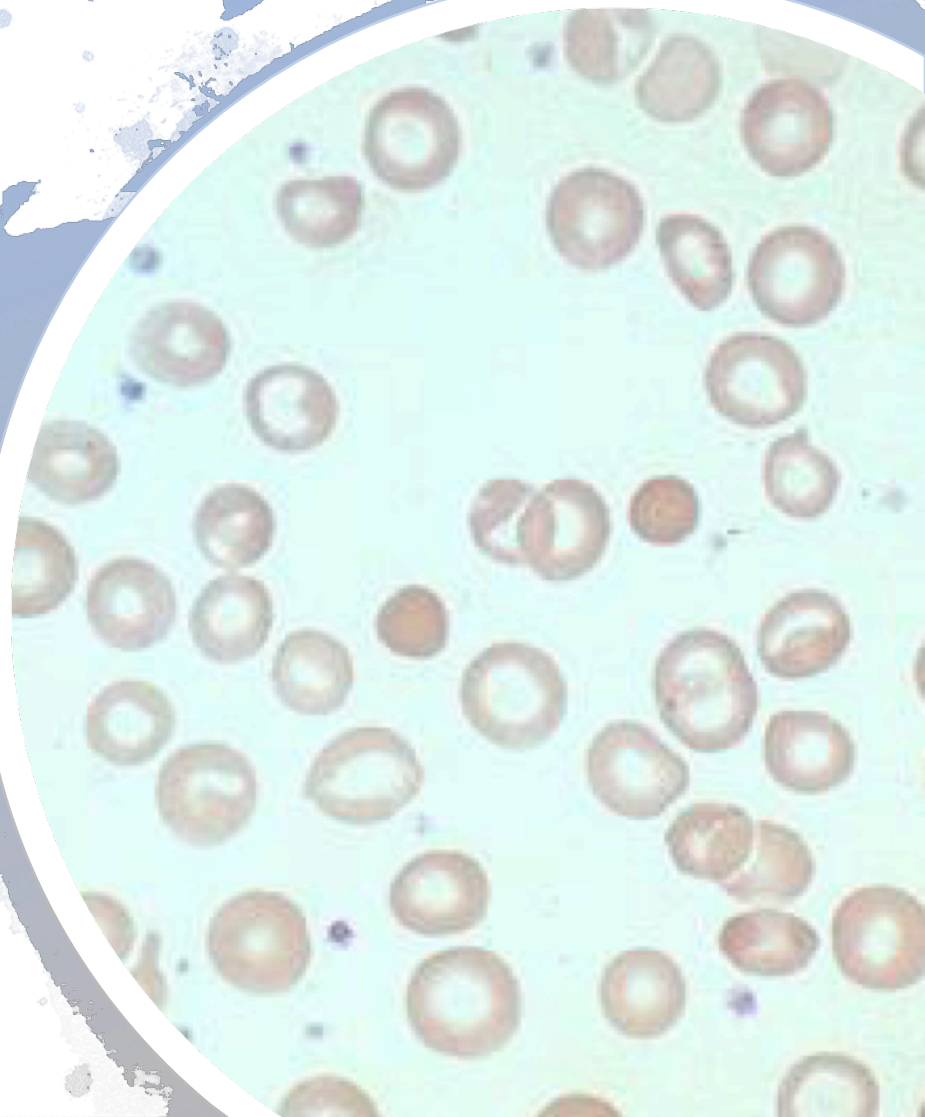
Organize a differential diagnosis of anemia based on mean corpuscular volume

List first line investigations into anemia

Cases

24 yo F with fatigue	• Hgb 80, MCV 70
63 yo F with fatigue	• Hgb 100, MCV 75
68 yo F and asymptomatic	• Hgb 90, MCV 90 • WBC 2.5, Plt 140





Anemia

Classification

Acuity

Symptoms

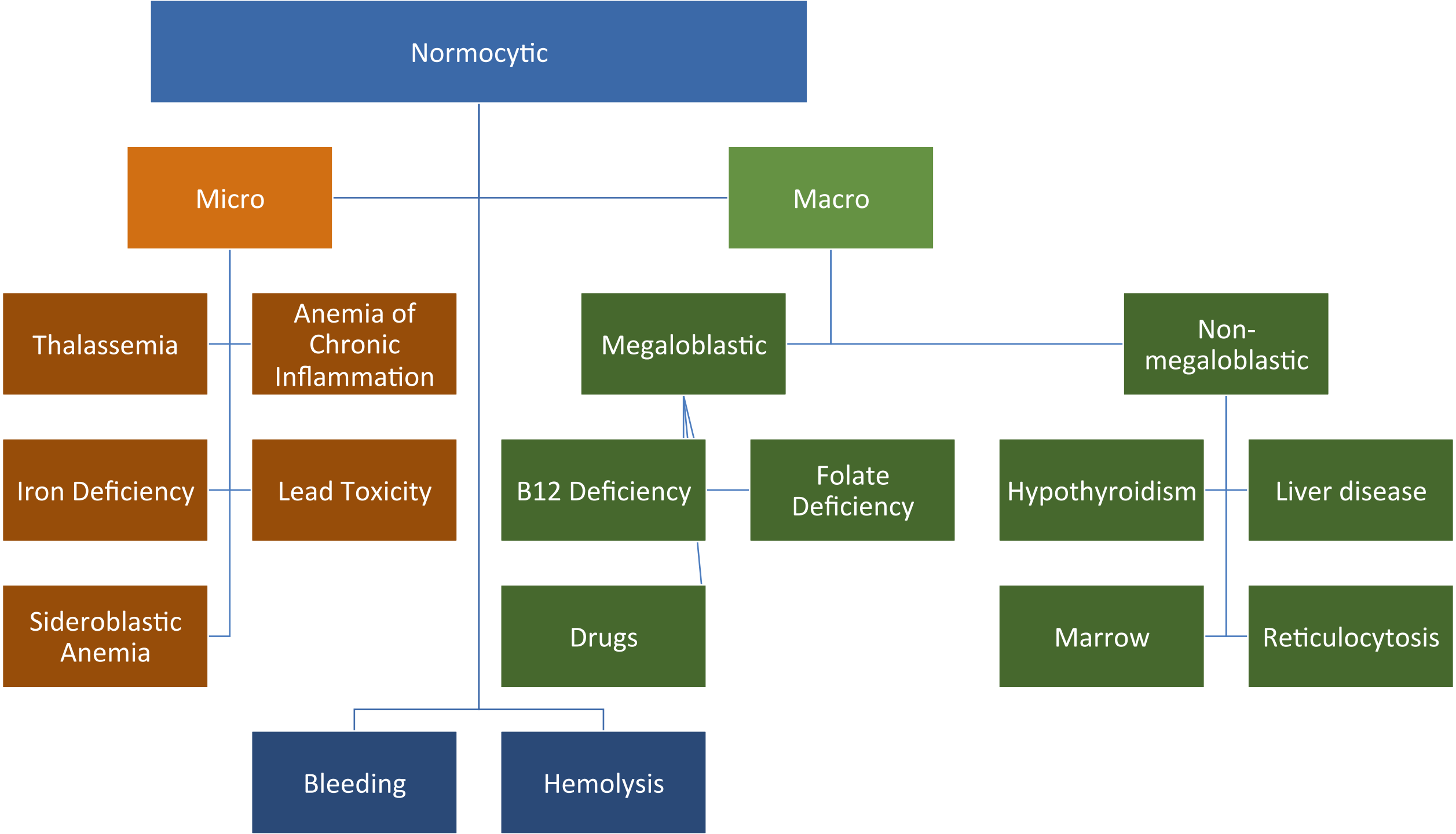
Mean Corpuscular Volume

MCV

Microcytic < 80

Normocytic 80 - 100

Macrocytic > 100


Normocytic
Micro
Macro
Thalassemia
Anemia of Chronic Inflammation
Iron Deficiency
Lead Toxicity
Sideroblastic Anemia
Megaloblastic
Non-megaloblastic
B12 Deficiency
Folate Deficiency
Drugs
Hypothyroidism
Liver disease
Marrow
Reticulocytosis
Bleeding
Hemolysis

Microcytic

Thalassemia

- MCV:RBC index < 13
- Hgb Electrophoresis

Anemia of Chronic Inflammation

- High ferritin
- Low iron, TIBC, %sat

Iron Deficiency

- Low ferritin
- Low Iron, high TIBC, low %sat

Lead Toxicity

- Lead levels

Sideroblastic Anemia

- Smear, bone marrow

Macrocytic

Megaloblastic

- B12/folate deficiency
- Drugs

Non-megaloblastic

- Hypothyroidism
- Alcohol
- Liver disease
- Reticulocytosis
- Marrow diseases

Macrocytic

Drugs

- Antineoplastics
- Antibiotics
- Antivirals
- Antiepileptics
- Antirheumatics/immune
- Antimalarials
- Antidiabetics

Hesdorffer and Longo. Drug-Induced Megaloblastic Anemia. N Engl J Med 2015; 373:1649-1658

Normocytic

Acute loss

Bleeding

Hemolysis

Combined micro and macro

Overlap with any of the other causes

Blanket work up

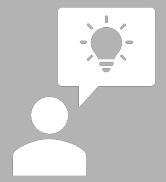
- Drug review and alcohol history
- Retic count
- Smear
- Ferritin +/- iron studies
- B12 and folate levels
- TSH
- SPEP
- LDH, bili
- Liver enzymes/function +/- ultrasound

Cases

24 yo F with fatigue	• Hgb 80, MCV 70
63 yo F with fatigue	• Hgb 100, MCV 75
68 yo F and asymptomatic	• Hgb 90, MCV 90 • WBC 2.5, Plt 140

Conclusions

Anemia has a broad differential diagnosis



Organize differential diagnosis and work up based on clinical features and MCV

Questions?

Pharmacy Practice Assistant Led Reimbursement Model for Ambulatory Medications in the Hemodialysis Unit

NS Branch –CSHP Education Event

February 7, 2019

Heather Neville and Jaclyn Tran

Disclosures

- None to declare

Overview

- Background and Policy Work
  - Heather
- Role of the Drug Access Navigator Pharmacy Practice Assistant
  - Jaclyn
- Cost Savings to the Renal Program
  - Heather and Jaclyn

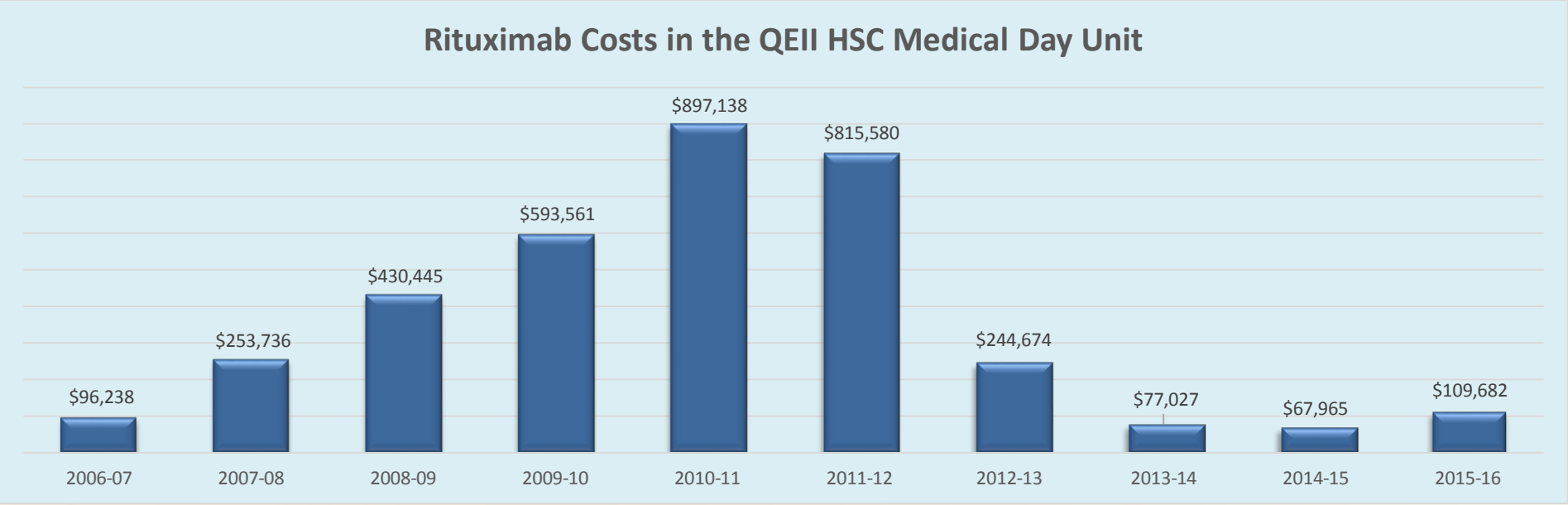
Objectives

After this presentation, you should be able to:

- Understand how an ambulatory drug policy was developed and implemented
- Understand the role of the renal team pharmacy practice assistant (PPA)
- Consider other ambulatory practices in which this reimbursement model could be applied

Ambulatory Drug Policy

- Working group: pharmacist, physician, nurse, social worker, leadership, lawyer, bioethicist
- Policy: Hospital considered “payer of last resort”
- Pilot: Rituximab for rheumatology indications, 0.5 FTE Medication resource specialist

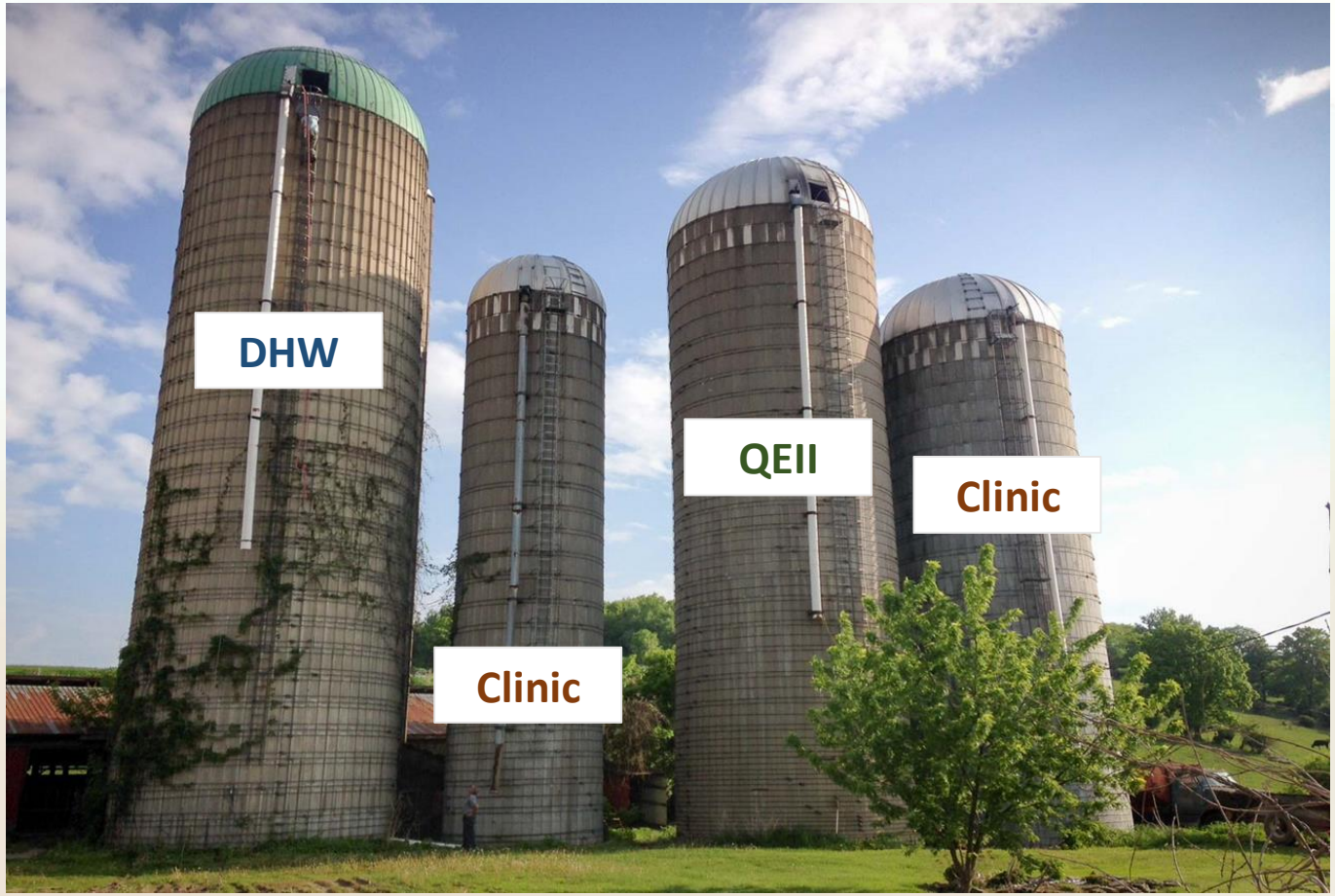


Chevalier B. Piloting an Outpatient Policy for Funding Drugs and Their Administration in Rheumatology. Healthcare Quarterly 2013;16(3):42-47

Challenges

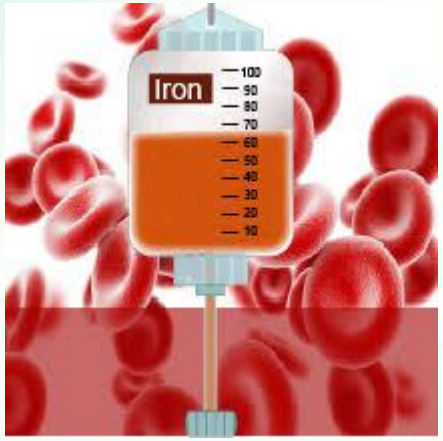
NOVA SCOTIA
Health and Wellness

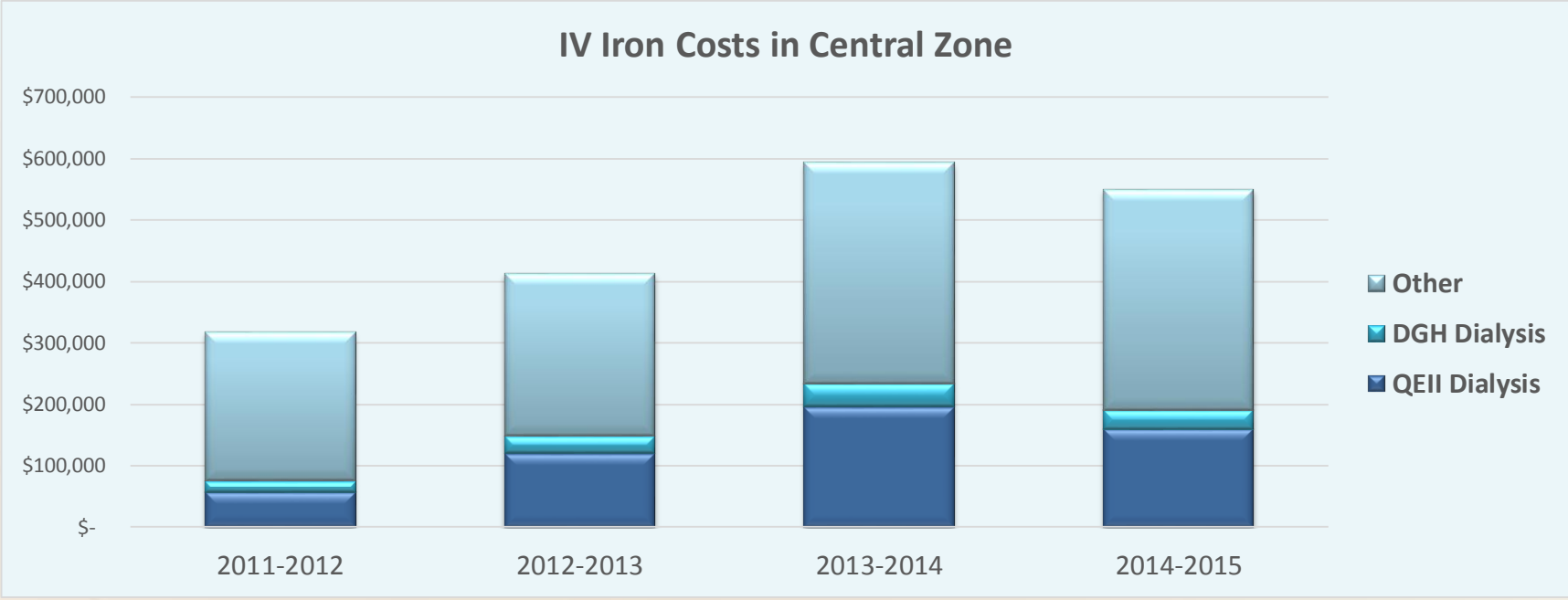
Challenges



IV Iron Expansion

- DUE reports reviewed to expand policy
- Supported by Renal team – DGH Dialysis Clinic pilot



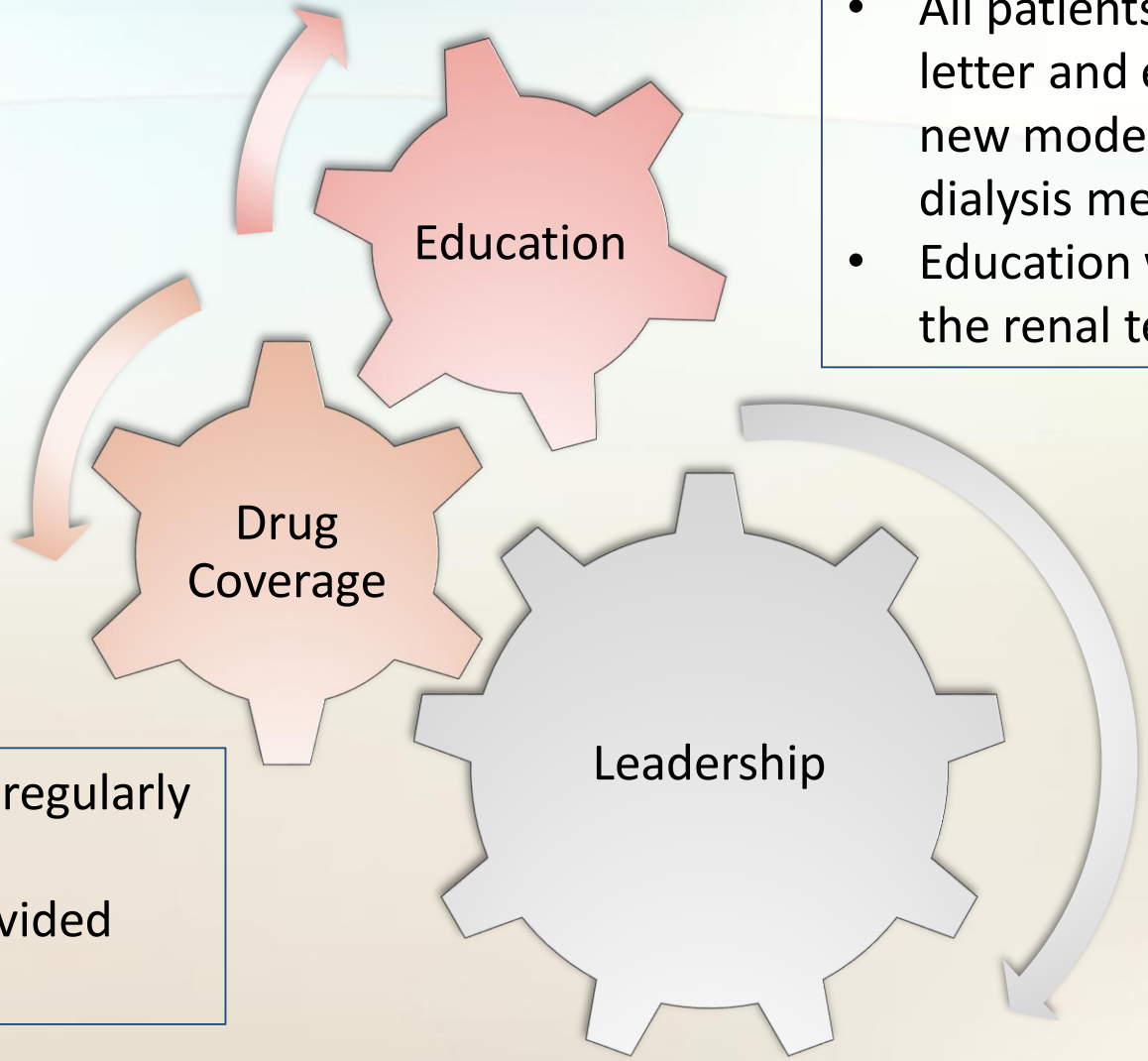


IV Iron Pilot Project

- Dartmouth General Dialysis Clinic – March 2015
- Working group – health service manager, nephrologist, social worker, nurse, pharmacist
- Forms and procedures developed, patients approached for insurance information
- Partnered with same community pharmacy (rituximab)
- Patient and staff feedback
- ~ $30,000 cost savings

DGH Dialysis Clinic Pilot Project

- Drug coverage was collected
- Rx faxed to community pharmacy
- Forms completed if needed for drug coverage
- Rx filled at no cost to the patient
- Rx delivered to Dialysis Clinic



- All patients received a letter and education on the new model for funding of dialysis medications
- Education was delivered by the renal team

- The team collaborated regularly to review the process
- Clinic charge nurse provided leadership

Challenges and Barriers

- **September 2015**
  - Attempted roll out at the Dickson and Halifax Infirmary RDU
    - Only partially successful
  - Need dedicated staff to interview patients and conduct follow-up with the community pharmacy

Collaboration and Leadership

- Nephrology and Pharmacy
  - Management and Leadership: Anne Hiltz, Jo-Anne Wilson, David Landry
  - Renal Executive → Senior Leadership
- Nephrology Staff
  - Nursing, pharmacy, social work, prescribers, unit clerks

Drug Access Navigator -Pharmacy Practice Assistant (PPA)

- **April 2017**
  - The renal program hired a PPA to support drug access navigation: **Annette Veith!!**

Drug Access Navigator -PPA

- Lead the implementation of the reimbursement model for the Renal Program
  - Approximately 400 HD patients including 3 in-center HD units and 4 satellite HD

Reimbursement model for IV iron

Leadership


IV Iron/Dalteparin Program
Any questions please contact:
Annette Veith RPhT
Pharmacy Practice Assistant
Drug Access Navigator
902-473-3779
Pager #1128
MaryAnnette.Veith@nshealth.ca
Patient List and Supply Location
Patient List and Supply Location
Med Cupboard

Drug Coverage

How does the funding of medication in the Kidney Program work?

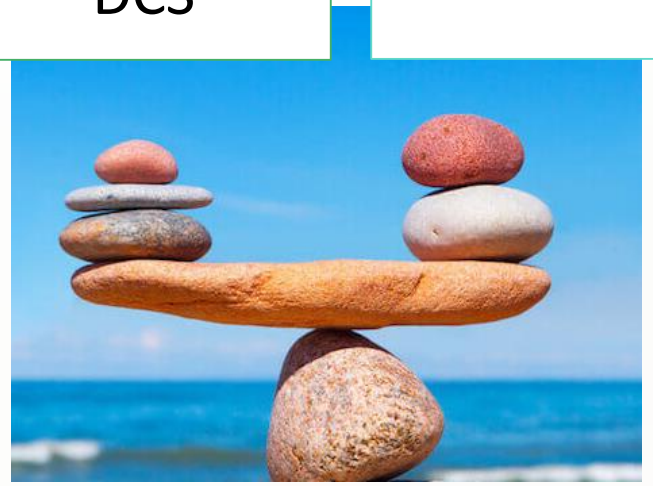
NS Pharmacare:

- Family
- Senior's
- DCS

Private Insurance

OR

No Insurance



Prescriptions

nova scotia health authority

PRESCRIPTION FOR COMMUNITY PHARMACY

Patient label here

CONFIDENTIAL

Pharmacy Delivery Information

IV Iron Therapy Administration for Dialysis Patients

Drug Allergies: _____

1. **Iron Therapy** ☐ *File, do not dispense*

   ☐ Iron **SUCROSE** (Venofer®) 100 mg vials:
   For IV administration according to the Nephrology Anemia Management IV Iron Protocol

   Dispense: 10 x 5ml vials

   Repeats: 10

   ☐ Other (specify) _____

2. ***Pharmacy do not dispense:***

   EPINEPHrine 1:1000 (1 mg/ml) vial should be available at all times when intravenous iron treatment in progress.

Prescriber Certification

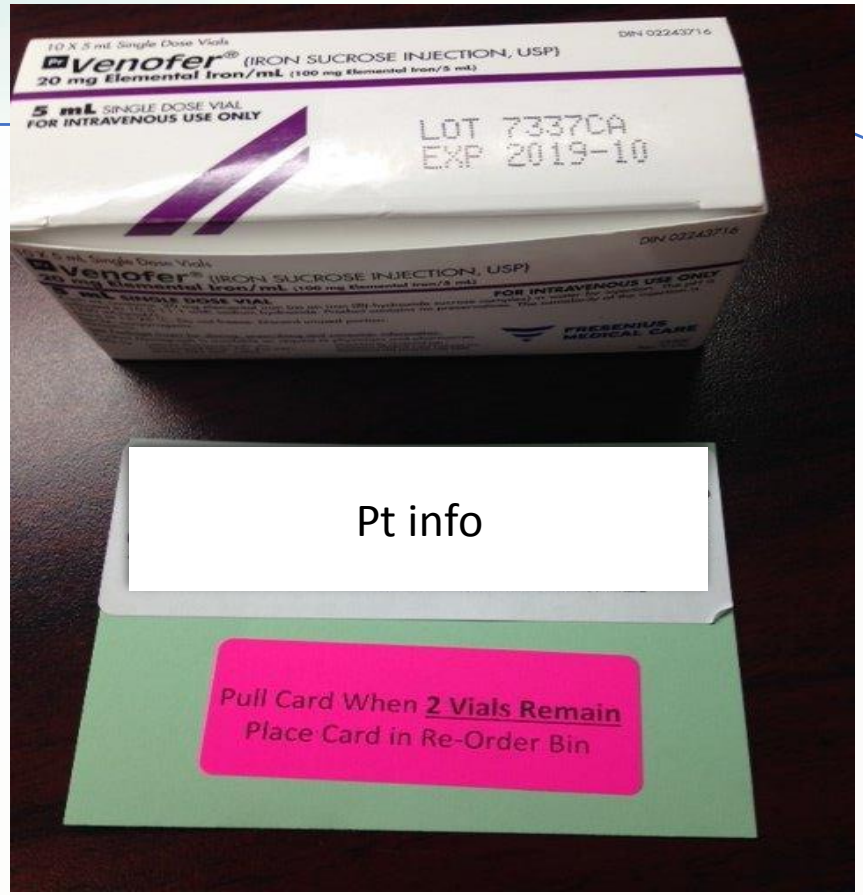
- This prescription represents the original of the prescription drug order.
- The pharmacy addressee noted above is the only intended recipient and there are no others.
- The original prescription has been invalidated by marking it in such a way that it cannot be reissued.

Prescriber's Signature _____
Date (DD/MM/YY) _____

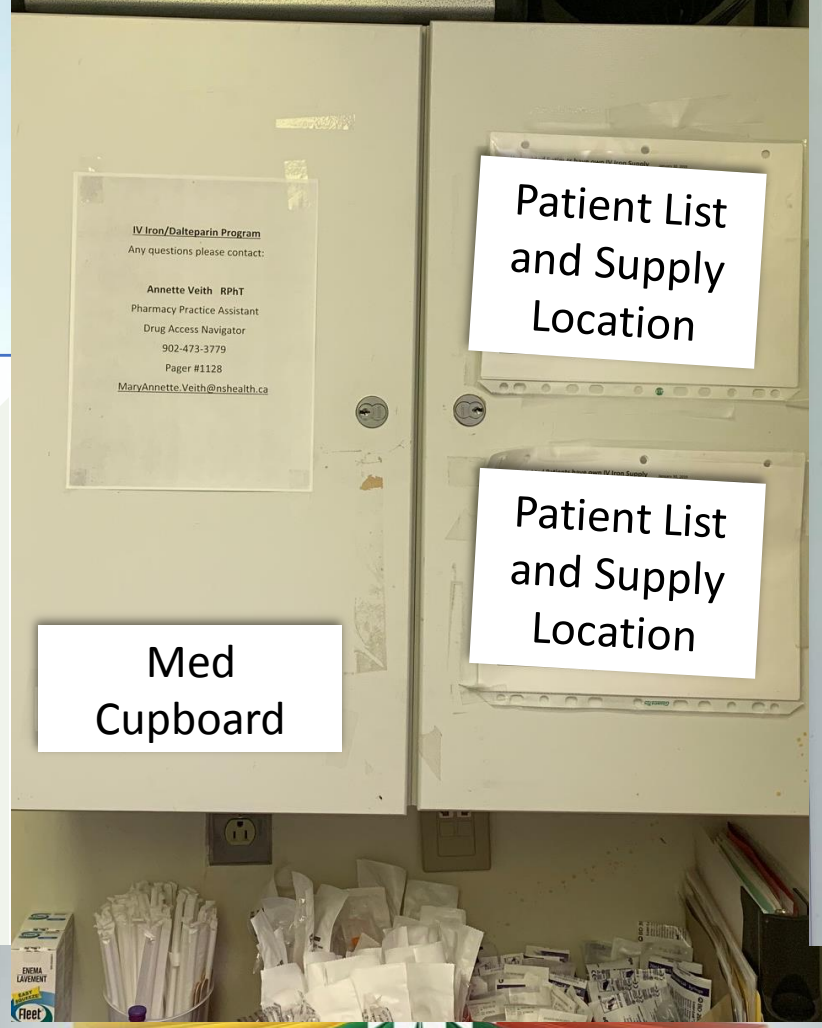
Prescriber's Name _____
Reg. No. _____
Print Print

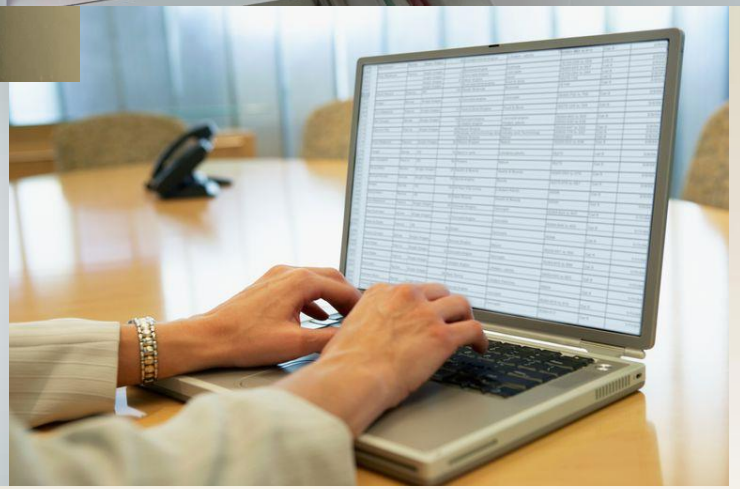
Prescriber's Address: 5820 University Ave, Halifax, NS B3H 2Y9 Tel: 902-473-3895, Fax: 902-473-2675

Communication



Organization





Evaluation

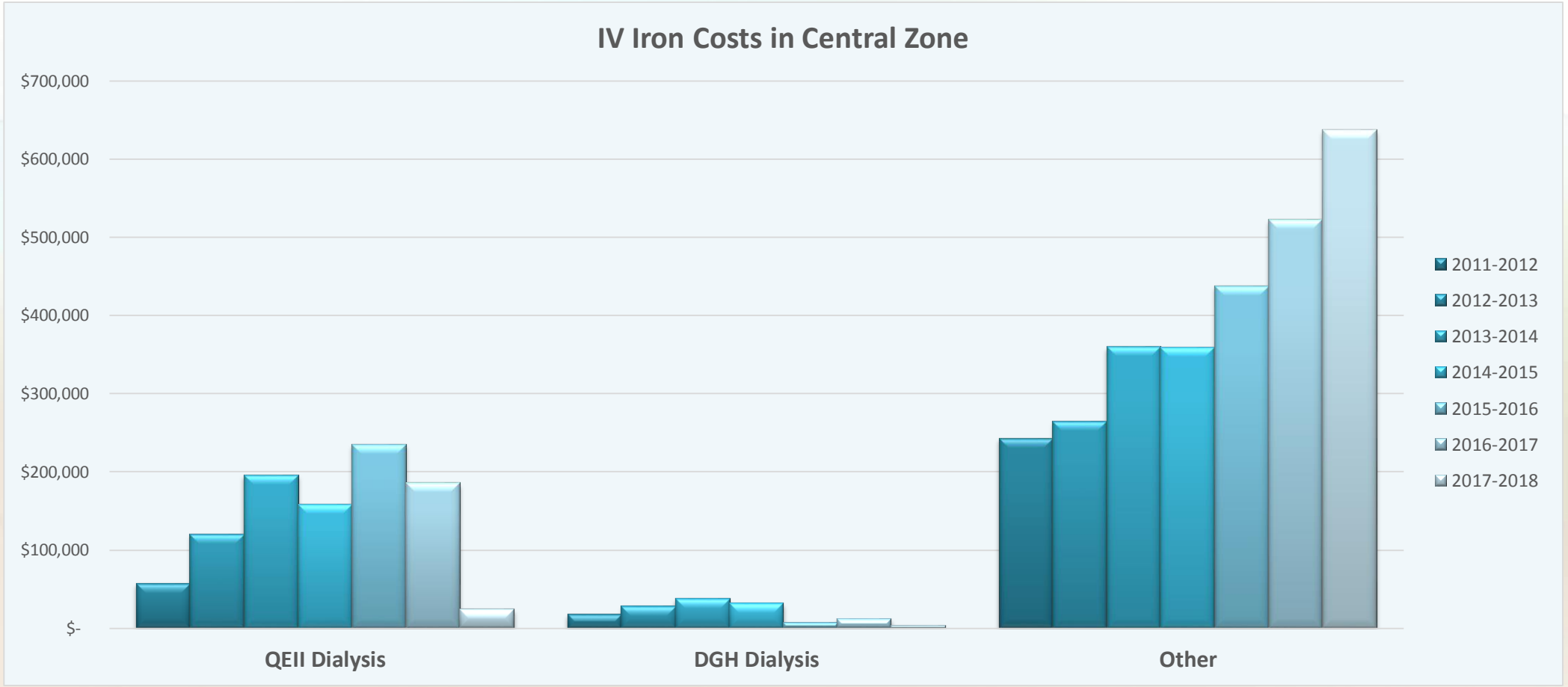
From April 2017 to March 2018:

- Evaluation of the potential cost savings from this reimbursement model
- Results to be published in CJHP in the next 3 months! Led by Dr. Jo-Anne Wilson

Title: Medication Reimbursement Model and Cost Savings in a Canadian Ambulatory Hemodialysis Program

Authors: Jo-Anne S Wilson, Jaclyn Tran, Annette Veith, David Landry, Heather Neville, Cindy Kelly, Steven Soroka and Kenneth West

IV Iron Costs



Patient Benefits from Policy and PPA

Policy Implementation	PPA
• Support with prescription out-of-pocket costs	• Resource to patients (and team)
• Potential improved compliance with other expensive meds	• Tracking high cost drugs Rx'd by nephrology ie. Sevelamer, cinacalcet
• Education on drug plans	• Drug access navigation in general
• Access to drug plans	• Creative ideas to improve med compliance

Implications for Renal Team

- This PPA led, pharmacy team reimbursement model was successfully developed, implemented, and evaluated.

Implications for NSHA

- CDHA Policy → NSHA

Acknowledgements and Questions

- Renal Interdisciplinary Team
  - Management and leadership, pharmacy, nursing, social work, prescribers, administration.
- Community Pharmacy Colleagues
- NSHA Pharmacy DUE and Management

- Questions?