Community of Practice: Choosing Wisely in Paediatrics

Moderators:

Dr. Jeremy Friedman
Associate Paediatrician-in-Chief
Director, SickKids Choosing Wisely Program

Dr. Olivia Ostrow
Paediatrician and Patient Safety Lead, Paediatric Emergency Medicine
Associate Director, SickKids Choosing Wisely Program

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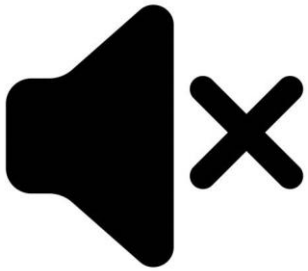
Housekeeping



- Note: please keep your microphone on **mute while others are presenting.**

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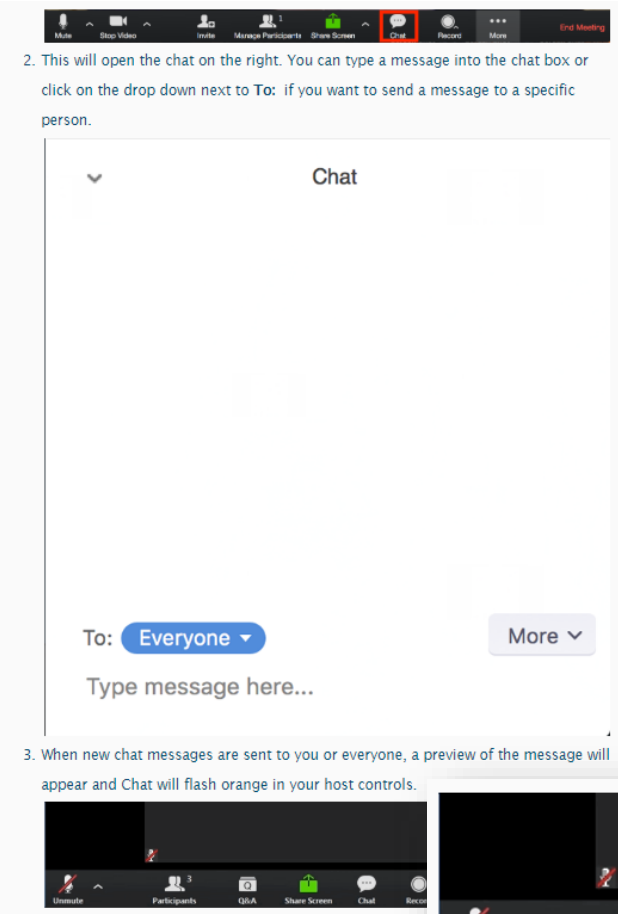
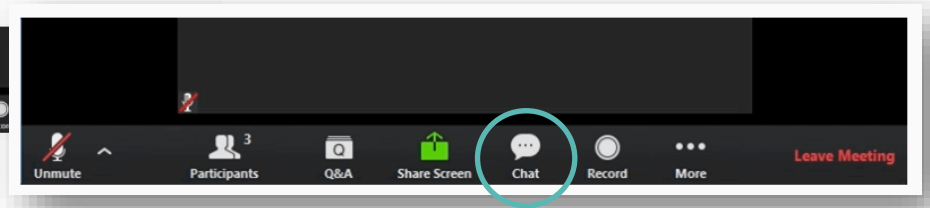


Have a Question?

- Use the **chat function** in Zoom at anytime
- If you wish to contribute to the conversation, be sure to **un-mute** on the Zoom dashboard
- Note: *we will moderate the Q&A after all presentations have been completed*



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Agenda

2:00 – 2:05	**Welcome and Introductions**
2:05 – 2:25	**Presentations** **Choosing Wisely at North York General Hospital** Drs. Julia Sharp and Ronik Kanani
2:25 – 2:40	**Using Blood Wisely for Paediatrics** Dr. Yulia Lin **Management of Paediatric Iron Deficiency Anaemia in the Emergency Department** Dr. Matt Speckert
2:40 – 2:50	**Less Is More: Choosing Wisely in Paediatric Rheumatology** Dr. Nadia Luca
2:50 – 3:00	**Q&A**

Welcome (and welcome back)!

The Choosing Wisely in Paediatrics Community of Practice (CoP) mandate is to foster knowledge sharing and collaborative learning to promote high-quality, value-added care by focusing on overutilization of certain tests and therapies. Facilitated through:

- Building capacity in QI / resource stewardship (Choosing Wisely) by sharing lessons learned and successful initiatives
- Supporting continuous QI / resource stewardship (Choosing Wisely) efforts
- Promoting consistency in recomm locally, provincially and nationally
- Supporting spread of evidence-based best practices
- Developing a central repository for idea sharing
- Engaging in new opportunities for collaboration

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Children's Healthcare Canada

- **The Choosing Wisely in Paediatrics Health Hub**
  - Connects individuals with "like" peers across Canada to share information and exchange resources
  - Provides information (including recordings) from past webinars and updates on upcoming events
  - **Visit https://choosingwisely.squarespace.com/**

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Choosing Wisely
At North York General Hospital

Dr. Julia Sharp, MD, FRCPC Paediatrics

Staff Paediatrician, North York General Hospital
Clinical Part-time Lecturer, University of Toronto

Dr. Ronik Kanani, MD, FRCPC Paediatrics

Chief of Paediatrics, North York General Hospital
Medical Director, Child and Teen Program
Assistant Professor, University of Toronto

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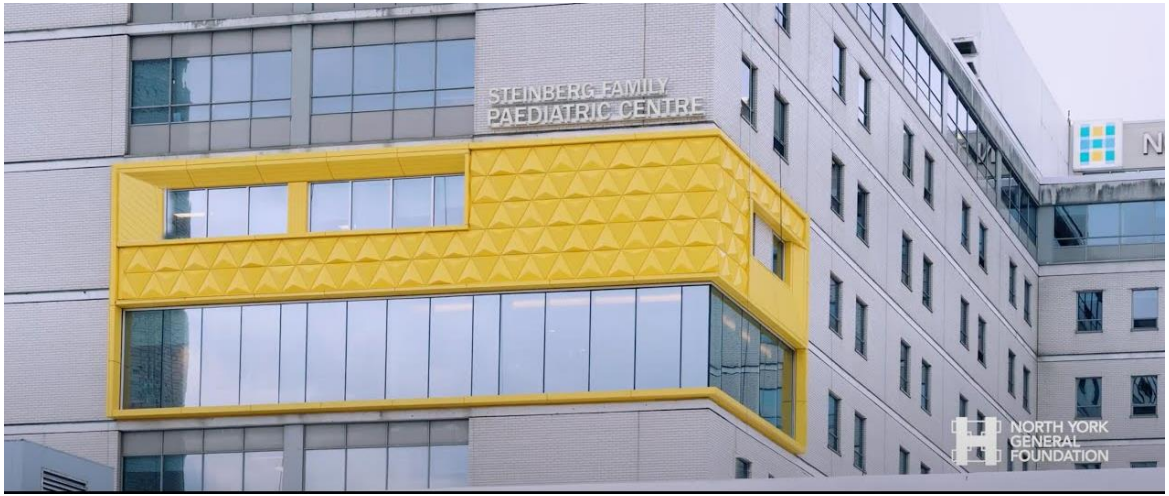
About
North York General Hospital



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About
North York General Hospital

A busy community academic teaching hospital in North Toronto

Paediatrics Unit: *12 inpatient beds, 2 Short-Stay Unit beds*
Up to 6 patients with eating disorders admitted to our unit

Child and Adolescent Mental Health Unit: *6 inpatient beds*

Birthing Unit and Post-Partum Unit

Neonatal Intensive Care Unit; level 2C

Outpatient Paediatric clinic
General Paediatrics and subspecialty clinics
Complex care

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Outline

Reducing urinary catheterizations in infants and young children

Some quick points on a few other initiatives:

Reducing CBCs in newborns

Reducing unnecessary throat cultures for GAS

Reducing unnecessary investigations in patients with eating disorders

Outline

Reducing urinary catheterizations in infants and young children

Some quick points on a few other projects:

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Reducing unnecessary investigations in patients with eating disorders

Urine collection: to catch or to cath?

…Background

UTIs are one of the most common bacterial infections we see in infants and children

Approximately 7% of children < 2 years old who present to the Emergency Department with fever have a UTI

Urine samples are required on many of our febrile patients!

Urine collection: to catch or to cath?

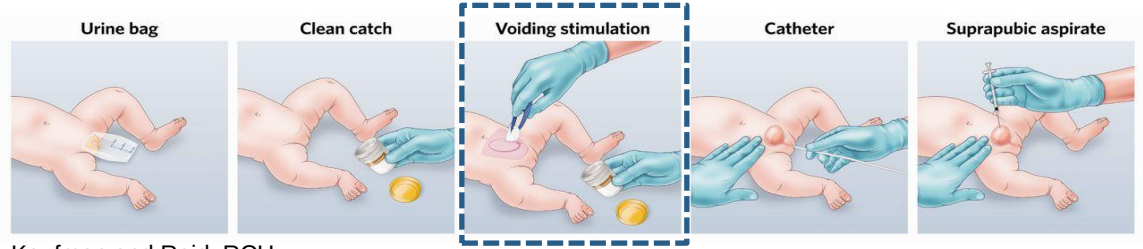
…Background

Catheterized or mid-stream specimen is gold standard for sample collection

Clean Catch can be time consuming

Bag specimens can be as screening, but have high false positive and contamination rates

Techniques for voiding stimulation include NIBS (non-invasive bladder stimulation) and Quick Wee method to avoid catheterization



Kaufman and Reid. RCH

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Urine collection: to catch or to cath?

…Background

Multiple studies have described these non-invasive methods

A new technique for fast and safe collection of urine in newborns

María Luisa Herreros Fernández, Noelia González Merino, Alfredo Tagarro García, Beatriz Pérez Seoane, María de la Serna Martínez, María Teresa Contreras Abad, Araceli García-Pose

Arch Dis Child 2013;**98**:27–29.

Evaluation of a New Strategy for Clean-Catch Urine in Infants

Mélanie Labrosse, MD, PhD,[a] Arielle Levy, MD, MEd,[a] Julie Autmizguine, MD, MSc,[a,b] Jocelyn Gravel, MD, MSc[a]

PEDIATRICS Volume 138, number 3, September 2016

Faster clean catch urine collection (Quick-Wee method) from infants: randomised controlled trial

Jonathan Kaufman,[1,2,3] Patrick Fitzpatrick,[1,2] Shidan Tosif,[1,2,3] Sandy M Hopper,[1,2] Susan M Donath,[2,3] Penelope A Bryant,[1,2,3] Franz E Babl[1,2,3]

the bmj | *BMJ* 2017;357:j1341

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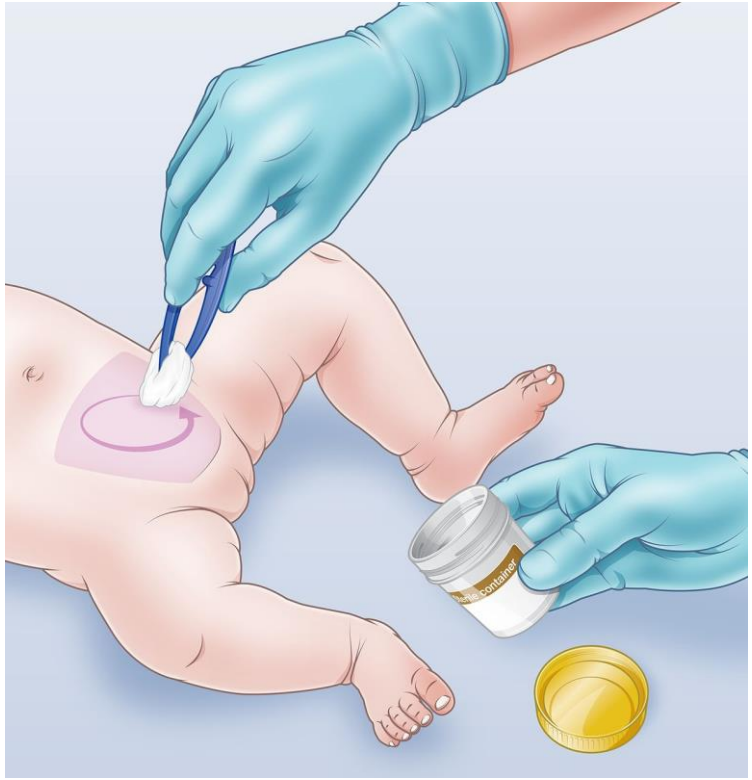
A
B
C

Fig 1 Quick-Wee voiding stimulation method of gentle cutaneous suprapubic stimulation using gauze soaked in cold fluid.



Jonathan Kaufman et al. BMJ 2017;357:bmj.j1341

Urine collection: to catch or to cath?

…Aim

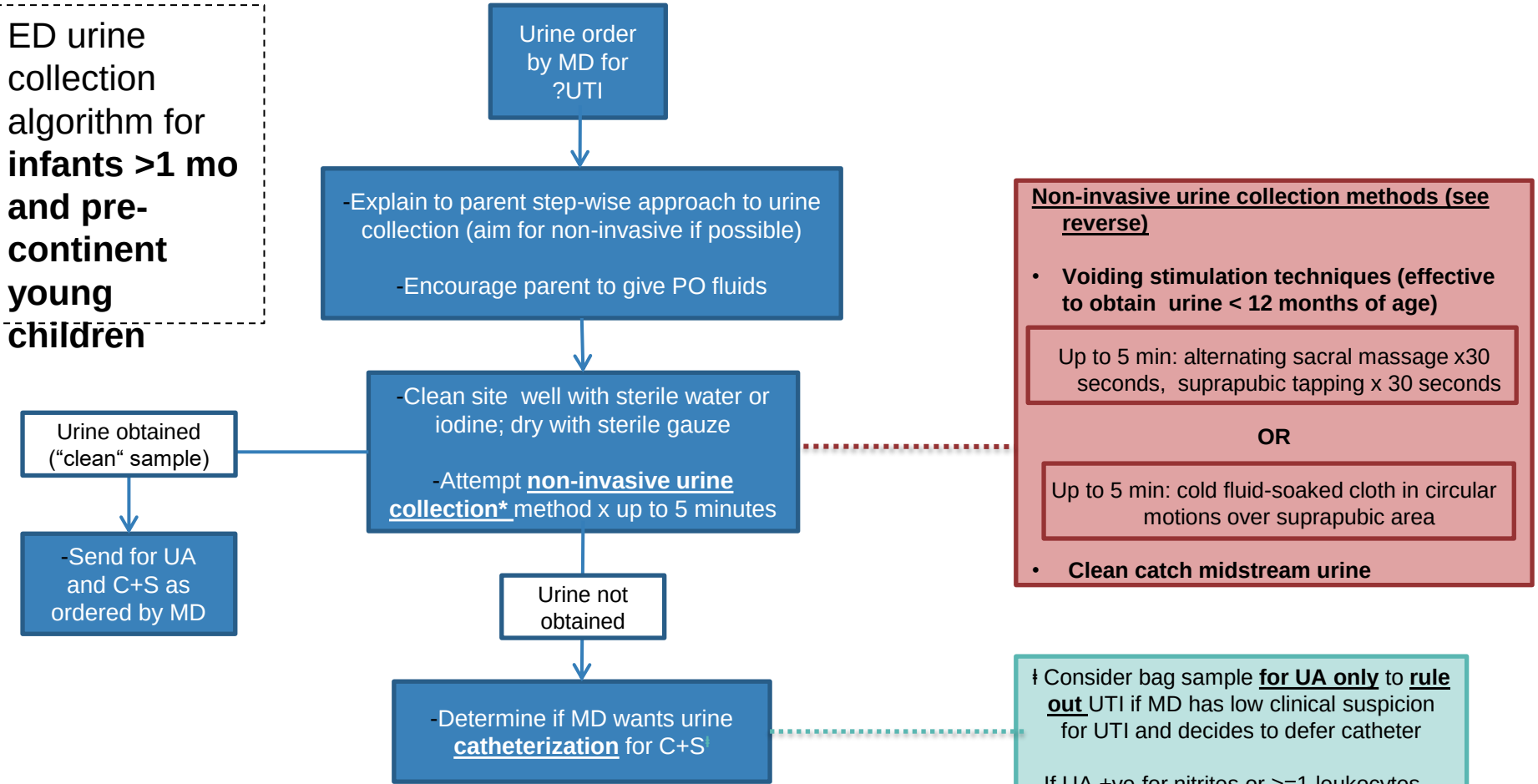
Goals:
Reduce catheterization – opt for early use of non-invasive "clean" catch techniques

If bags must be used: appropriate use of UA to rule out UTI
**without sending for culture ("dirty" urine)*

Paediatric unit baseline data (Mar/17-Feb/19) – urine requested for C&S

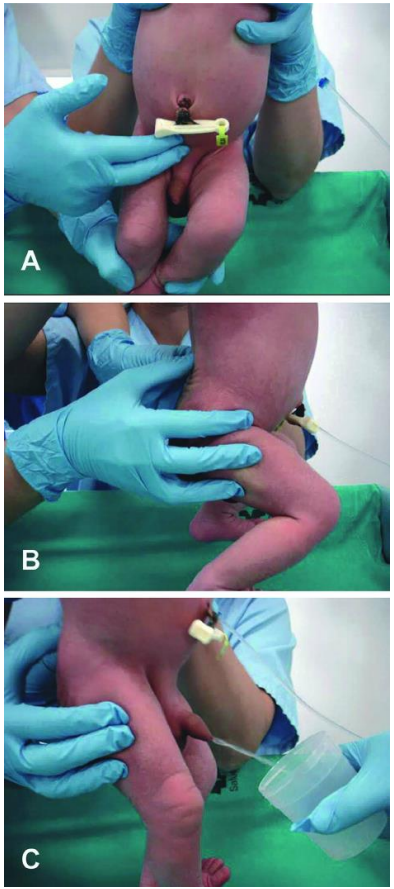
1-3 mo – 23% cath (18/78)
3-12 mo – 58% cath (34/58)
12-24 mo – 65% cath (23/35)

ED urine collection algorithm for **infants >1 mo and pre-continent young children**



C+S = culture and sensitivity; LUTS = lower urinary tract symptoms; MSU = midstream urine, UA = urinalysis; UTI = urinary tract infection

Bladder/Lumbar Stimulation - *Best for infants 1-6 mo*



Technique:

-Clean area well with sterile water

-Hold infant under arms with feet gently touching bed, legs open.

-Apply alternating:

1. **Bladder stimulation**: gentle tapping suprapubic area at 100 taps/min x 30 s.
2. **Lumbar paravertebral stimulation**: light circular massage x 30 s.

-Repeat until urination occurs – attempt up to 5 minutes

Cold fluid stimulation - *Best for infants 1-12 mo*

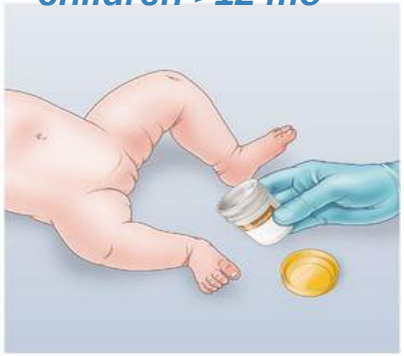
Technique:

- Clean area well with sterile water

-Wet gauze with cold water. Apply continuous gentle circular stimulation over suprapubic area

-Repeat until urination occurs – attempt up to 5 minutes

Clean catch - *Best for young pre-continent children >12 mo*



Technique:

- Clean area well with sterile water

-Instruct parents to keep container sterile and “catch”

-***Consider applying cold fluid similar to above if child will lie down with family***

Urine collection: to catch or to cath?

…Intervention

Intervention plan as described in prior slides

Rounds presented in January 2020 to Paediatrics and Emergency departments – plan to roll out education and intervention in coming months

And then… SARS CoV-2…

Urine collection: to catch or to cath?

…Measures

Plan for prospective QI study

Outcome measures:

- *Urine collection methods for culture – catheter vs. clean catch vs. noninvasive stimulation*
- *Time to successful urine collection*
- *Time to patient discharge*
- *Culture contamination rates*

Compare to baseline data

Urine collection: to catch or to cath?

…The larger project

Restarting initiative this fall/winter

Planned as part of larger hospital initiative for more evidence-based approach to urine collection and testing:

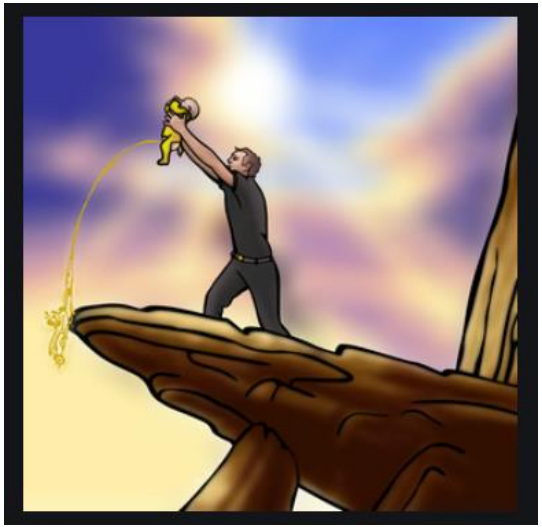
- Reduce urine microscopy
- Reduce unnecessary urine cultures (i.e. if UA is low-risk)
- Reduce urine cultures from bags
- Increase use of non-invasive urine collection techniques

Urine collection: to catch or to cath?

…Recommendation

Based on prior data – and hopefully our own data soon:

"Consider non-invasive urine collection methods first in infants and pre-continent young children for diagnosis of / rule out UTI."



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Outline

Reducing urinary catheterizations in infants and young children

Some quick points on a few other projects:

Reducing CBCs in newborns

Reducing unnecessary throat cultures for GAS

Reducing unnecessary investigations in patients with eating disorders

Reduce those CBCs, baby!

…Background

At NYGH, prior to March 2017, standard orders for infants with any risk factors for early onset sepsis (EOS)* included an automatic CBC.*

New CPS guidelines were published, "Management of term infants at increased risk for early onset bacterial sepsis (EOS)." (June 2017)

- *Suggested CBC is not a helpful screening tool; clinical signs and symptoms are a more sensitive marker*
- *CBC may provide some helpful additional information in some cases with multiple risk factors or unwell infants.*

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*Ruptured membranes >18h, maternal fever, inadequate GBS treatment

Reduce those CBCs, baby!

…Aim

To reduce unnecessary CBC in newborn infants

Automatic CBC removed from orderset, and decision was left to clinical discretion of paediatrician on-call

Order Blood cultures if concerned about sepsis in newborns (using Risk calculators)

Reduce those CBCs, baby!

…Measures

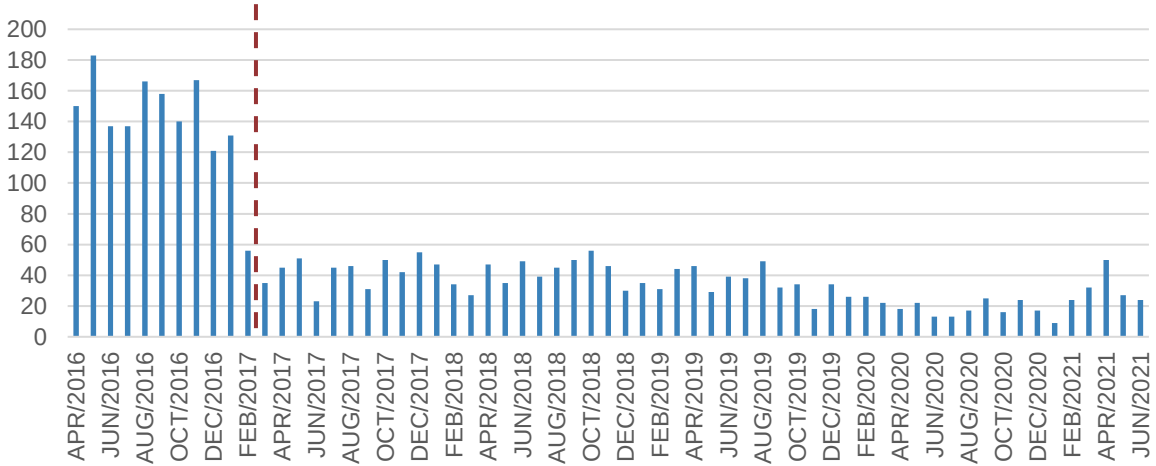
Data collected retrospectively from lab ordering records on CBCs collected prior to, and after the change

Reduce those CBCs, baby!

…Results

Reduced number of CBCs ordered in newborns admitted to postpartum unit over time

No noted increase in missed patients with EOS (informal observation)



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Reduce those CBCs, baby!

…Recommendation

"Do not routinely order CBC for newborns with risk factors of early onset sepsis; instead, use clinical discretion with CBC as adjunct to clinical workup as necessary"

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Outline

Reducing urinary catheterizations in infants

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Skipping the second strep

…Background

Testing for Group A Strep is common for children with pharyngitis and fever

Rapid antigen testing is available, with result returning in several hours

- *Good specificity (95%) – if positive, GAS pharyngitis ruled in*
- *Lower sensitivity (86%) – if negative, still need throat culture (gold standard) to confirm negative result*

To avoid multiple throat swabs, two swabs taken at once

- *Both rapid antigen testing and culture being sent*

Patients with positive rapid test sent home on antibiotics, and lab would call 48-72h later to notify of positive culture as well

- *Unnecessary use of resources – testing and lab/MD time*

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Cohen JF et al. Cochrane review, 4 July 2016.

Skipping the second strep

…Aim / Intervention

To reduce unnecessary throat cultures on patients already diagnosed with GAS pharyngitis by positive rapid antigen testing

Created lab rule June 2019:

> *If both a throat culture and rapid strep test request is received on a patient, culture will be sent to SHL only if the rapid strep is -ve.*
>
> *If the Rapid Strep test is +ve, the throat culture order will be cancelled with message "THIS SAMPLE WILL NOT BE CULTURED – RAPID STREP TEST POSITIVE."*

Skipping the second strep

…Measures

Data collected retrospectively from lab ordering records on throat cultures and rapid strep tests collected prior to, and after the change

Baseline data June 2018 to May 2019 - 323 rapid swabs done on patients <= 18 yrs old

61% rapid testing AND throat culture (n = 197)

39% rapid only (n = 126)

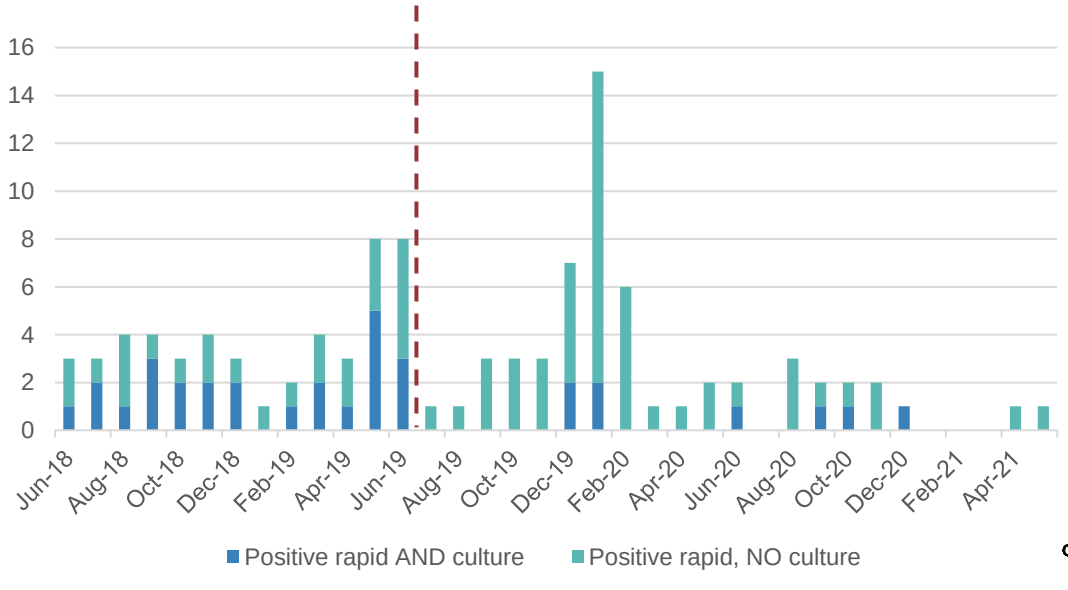
13% of rapid tests positive

? 25/197 cultures could have been cancelled

Skipping the second strep

Results

Monthly number of GAS tests completed on children <=18 years in ED



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Skipping the second strep

…Recommendation

If both a rapid strep and throat culture sample are collected, consider holding culture sample until rapid test is resulted, and cancelling culture if rapid test returns positive.

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Outline

Reducing urinary catheterizations in infants and young children

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Orders for eating disorders

BACKGROUND:
Patients with eating disorders (EDs) and medical instability require a very resource-intensive approach: counselling, supervision, monitoring and investigations

- *Significant surge in EDs since the start of the pandemic*
- *QI Project ongoing to improve quality of care for patients with EDs*

AIM: Reduce unnecessary testing and intervention for patients by putting streamlined process in place

MEASURES: Patient and staff surveys completed prior to changes

.

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Orders for eating disorders

INTERVENTIONS:

Standardized order sets have enabled us to minimize lab ordering

- *Started refeeding labs after a full 24 hours of admission and stop after 5 days*
- *Urine dipsticks no longer done daily; once at admission then only as needed*

Standardized admission information

- *Admission Checklist to document what education has been done*
- *Educational Handbook with QR code and video were developed*

Centralized handover information

- *Standardized physician and nursing handover to make sure patients advance nutrition/activity stages to try to reduce length of stay*

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Outline

Reducing urinary catheterizations in infants and young children

Some quick points on a few other projects:

- ***Reducing CBCs in newborns***
- ***Reducing unnecessary throat cultures for GAS***
- ***Reducing unnecessary investigations and interventions in patients with eating disorders***

Thank you

Questions will be at the end of the session

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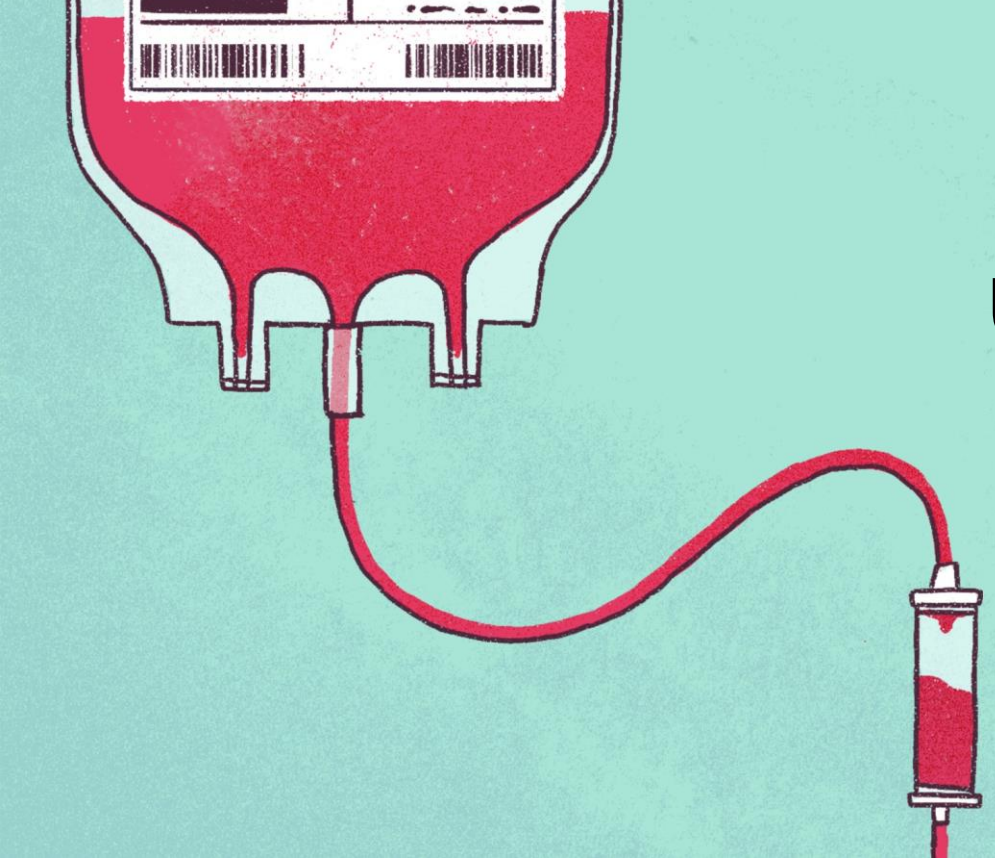


Using Blood Wisely for Pediatrics

Choosing Wisely Canada™

Canadian Blood Services

Using Blood Wisely

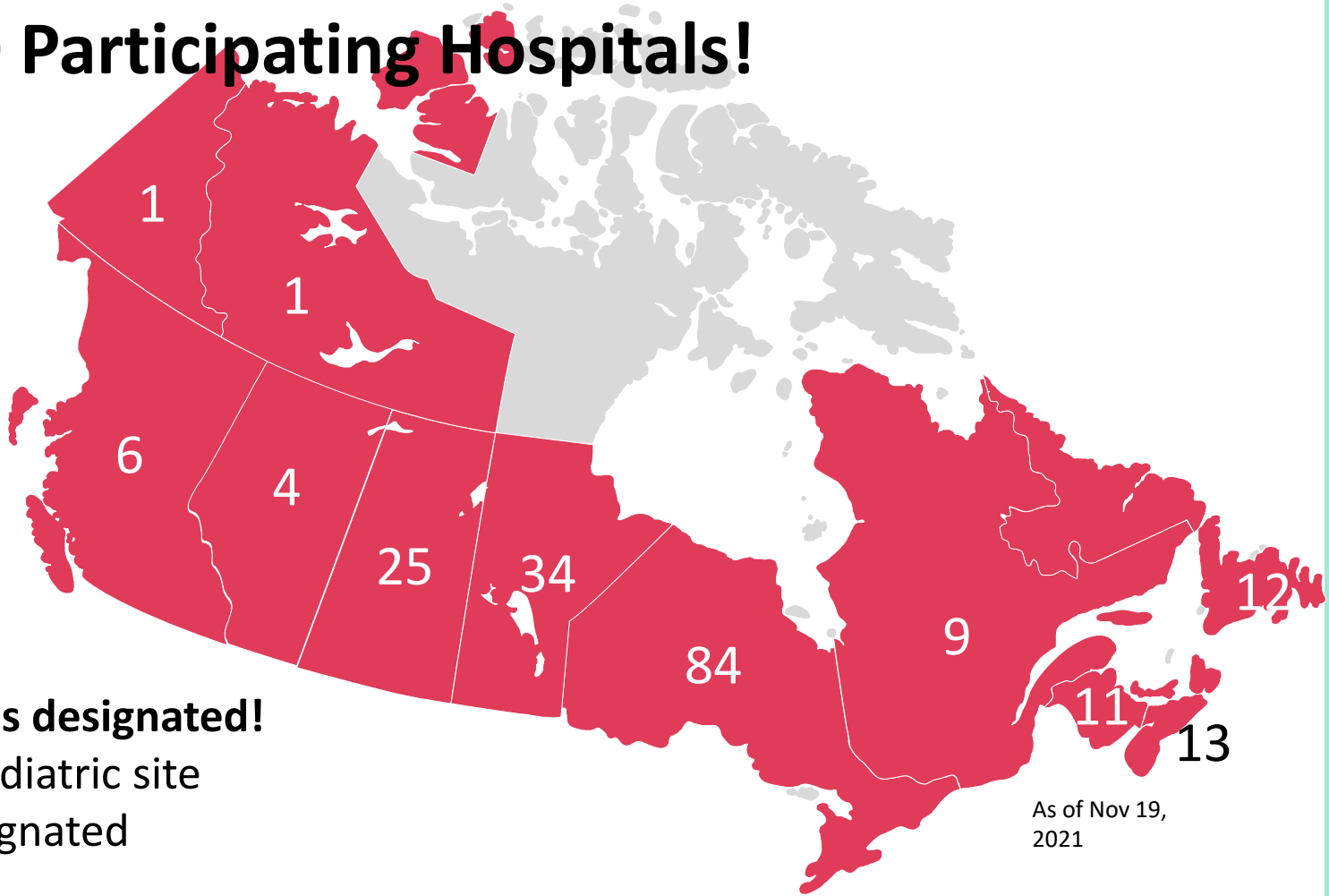
Choosing Wisely Canada's first national implementation campaign, in collaboration with Canadian Blood Services

The campaign challenges hospitals to benchmark themselves on appropriate transfusion practices and to lead by example through the adoption of a defined set of evidence-informed and proven strategies.

Aim: To decrease inappropriate RBC transfusions in Canada by:

- Implementing interventions and measurement to decrease inappropriate RBC transfusions
- Increasing engagement of hospitals in RBC transfusion quality improvement work

200 Participating Hospitals!



78 Sites designated!

- 1 Pediatric site designated

As of Nov 19, 2021

Using Blood Wisely.

Using Blood Wisely in Pediatrics

- Restrictive transfusion thresholds
  - Limited data supports pre-transfusion Hb ≤ 70 g/L
  - Reasonable to start with same benchmark as in adults with pre-transfusion Hb ≤ 80 g/L

Benchmark: At least 80% with a pretransfusion Hb ≤ 80 g/L

- Single unit transfusions for stable, non-bleeding patients
  - Children age ≥ 1 year
  - Cap at a single unit
  - May need to exclude hemoglobinopathy patients

Benchmark: At least 65% are single unit transfusions

- Encourage patient blood management and the use of alternatives

Using Blood Wisely.

MANAGEMENT OF SEVERE IRON DEFICIENCY ANEMIA IN THE PEDIATRIC EMERGENCY DEPARTMENT: A COMPARISON OF IV IRON VS TRANSFUSIONS

MATT SPECKERT, LANA RAMIC, NICHOLAS MITSAKAKIS, VID BIJELIĆ, MIRA LIEBMAN AND ELAINE LEUNG.

CHEO

uOttawa

Don’t transfuse packed red blood cells (pRBC) for iron deficiency anemia (IDA) in asymptomatic pediatric patients when there is no evidence of hemodynamic instability or active bleeding.

Design

Retrospective, observational study

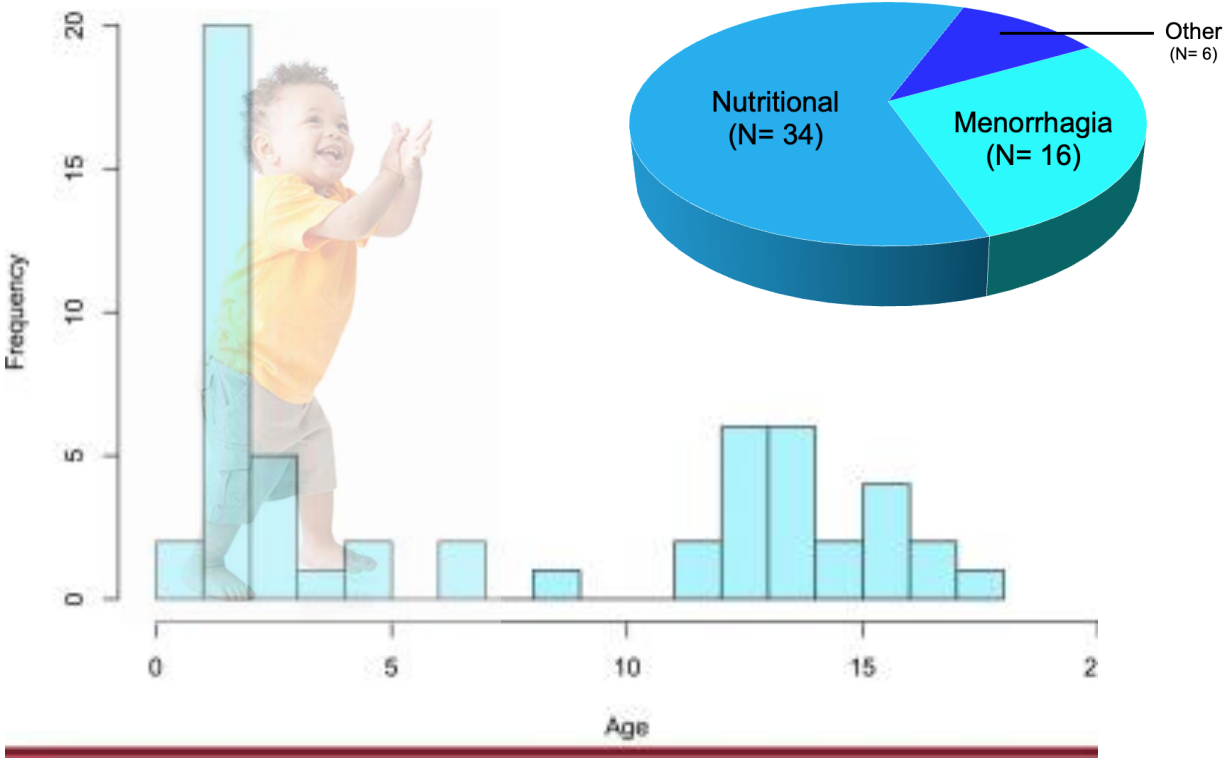
Patients (n=55) with severe IDA seen in tertiary care pediatric emergency department (ED) between Sept 2017 and June 2021

PRIMARY OBJECTIVE: Frequency of IV iron therapy and transfusions

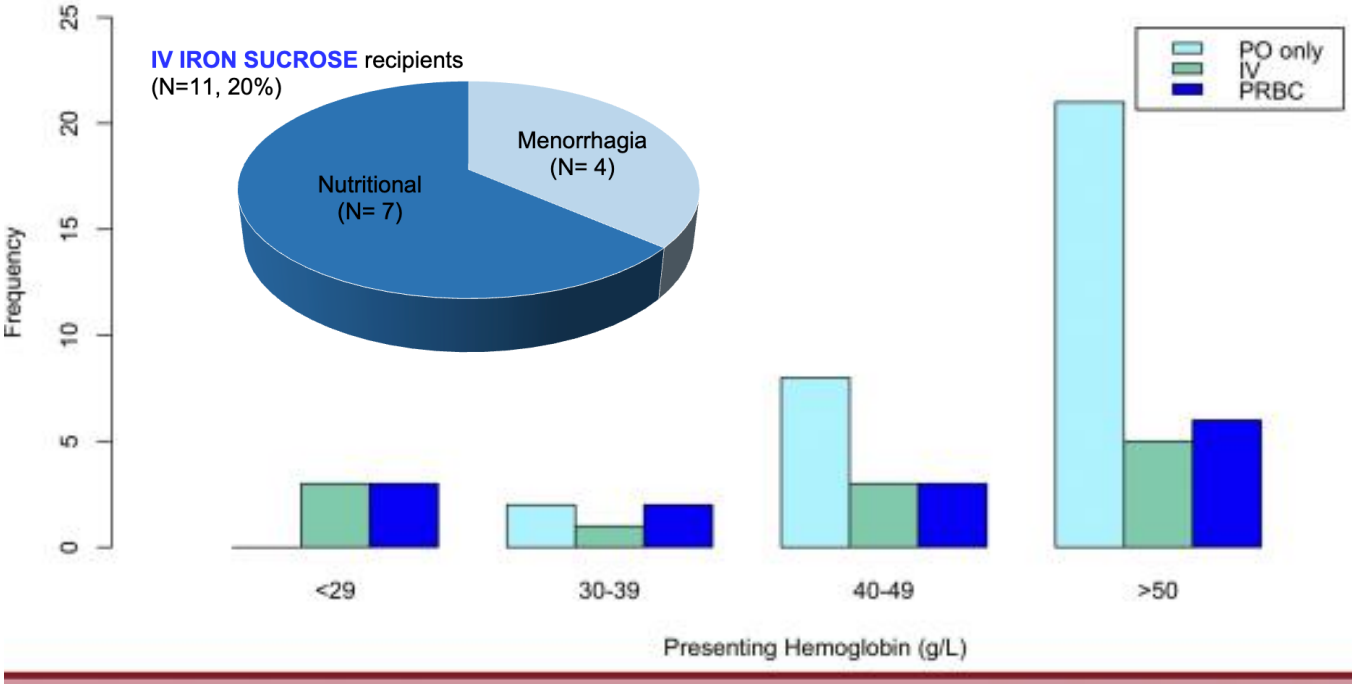
Secondary objectives:

- Hemoglobin recovery following IV iron
- Rates of transfusion/infusion reactions

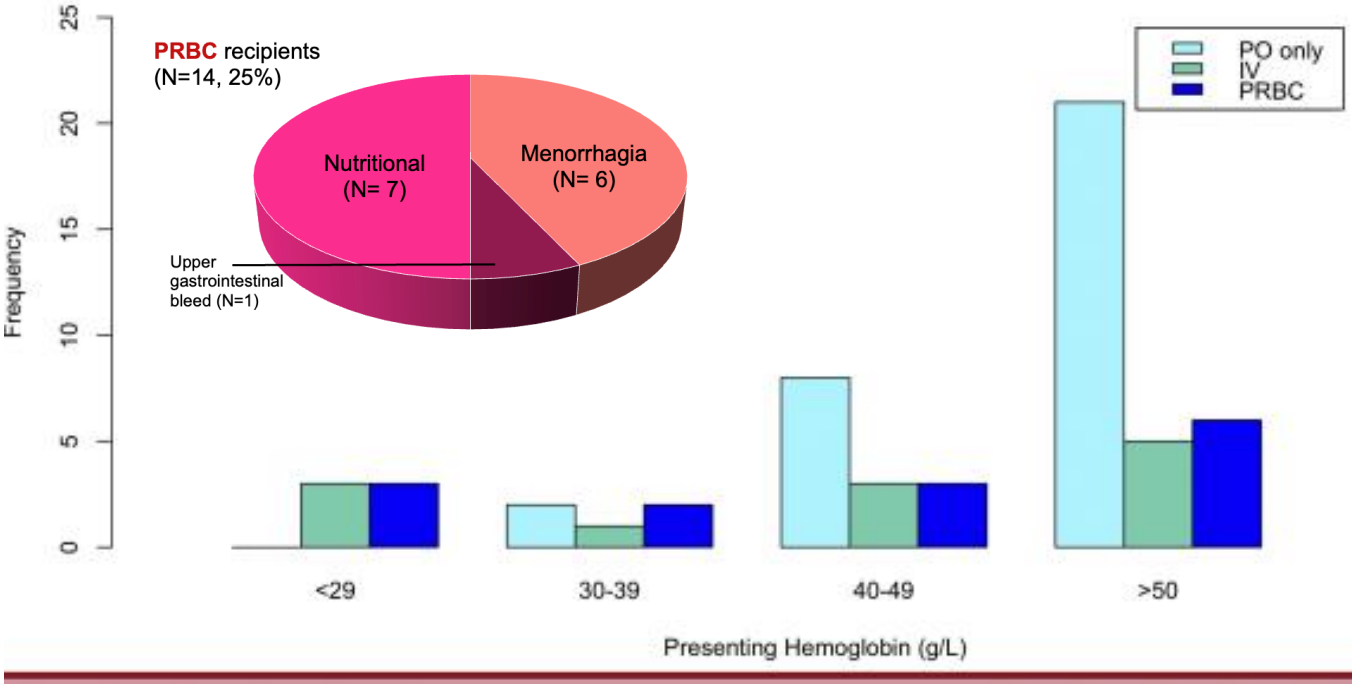
Most patients are infants with nutritional IDA



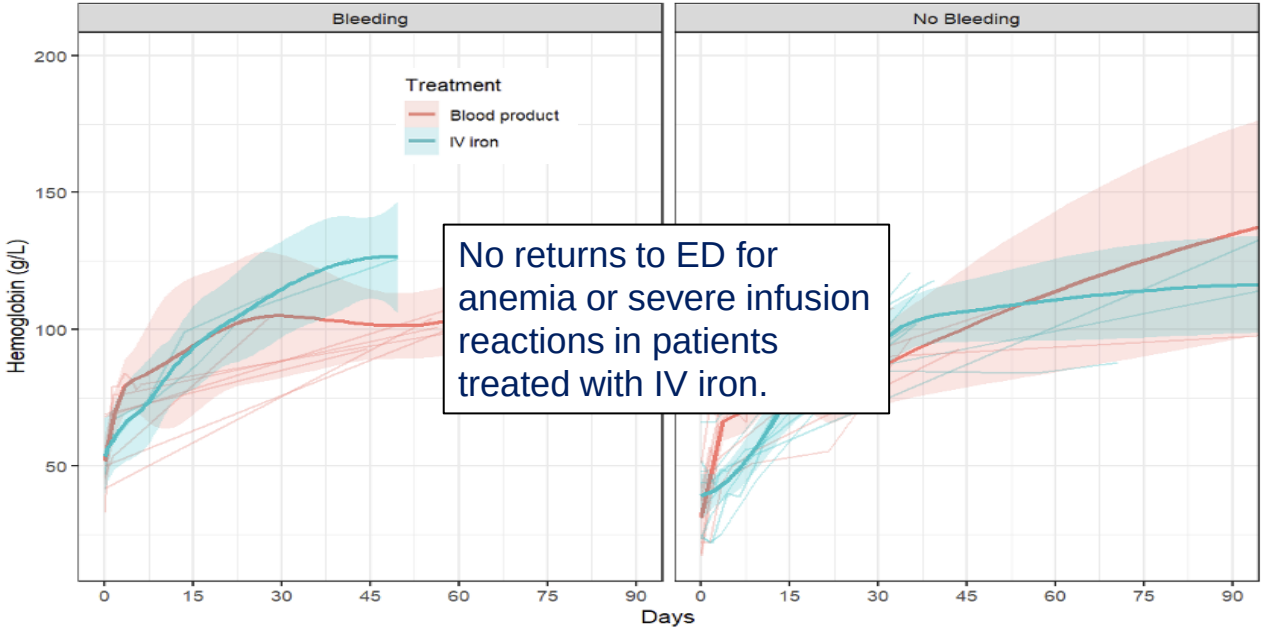
Transfusion used with **similar** frequency to IV iron



Half of transfused patients had nutritional IDA



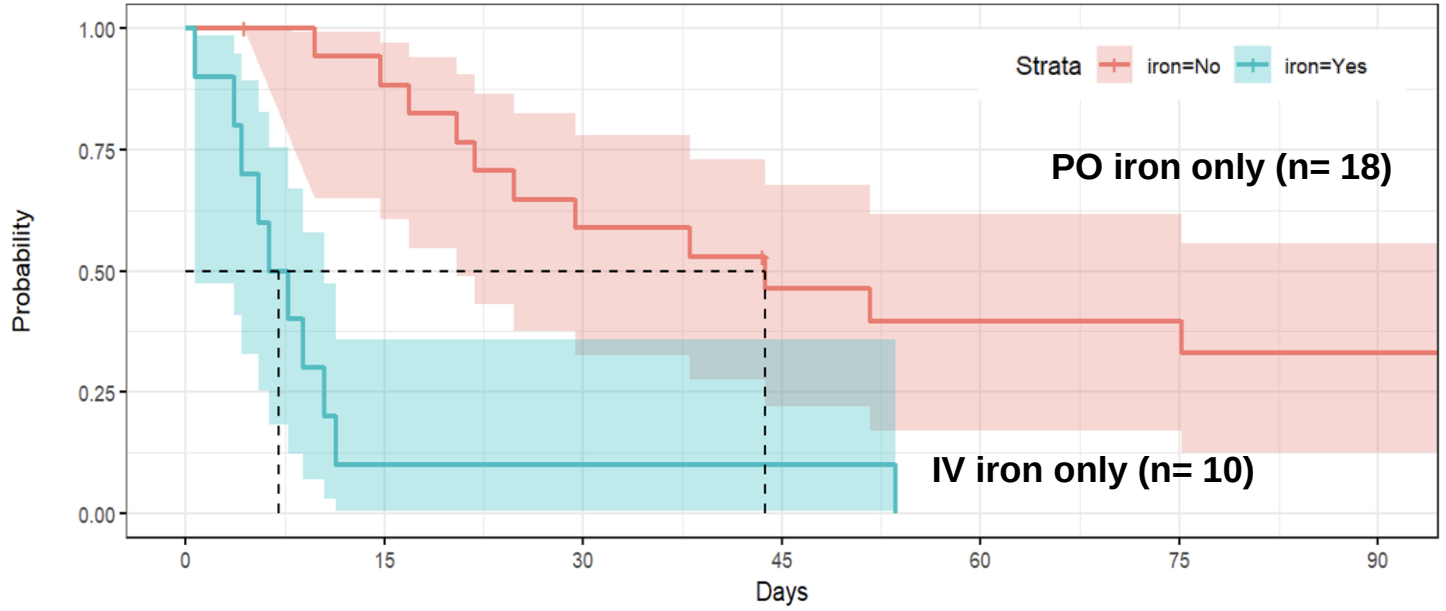
Response to IV iron sucrose is comparable to transfusion even for bleeding patients



No returns to ED for anemia or severe infusion reactions in patients treated with IV iron.

Bleeding at ED presentation
(N= 9, 8(89%) with menorrhagia)

IV iron sucrose produces at least a 20 g/L rise in hemoglobin within 2 weeks



CHEO

Summary

1. IV iron resulted in a rapid rise in Hgb within two weeks without severe reactions or returns to ED

2. Half of the transfused patients were infants with nutritional IDA
   IV iron likely underused in this population

3. Given the limitations of this small, retrospective study a prospective study on the use of IV iron for severe IDA in the ED is warranted.

THANKS FOR LISTENING

Matthew Speckert,

mspeckert@cheo.on.ca

Less Is More: Choosing Wisely in Paediatric Rheumatology

Dr. Nadia Luca, MD, FRCPC, MSc
Pediatric Rheumatologist, Alberta Children's Hospital
Clinical Associate Professor, University of Calgary

On Behalf of: The Canadian Rheumatology Association Pediatrics Committee

CRA SCR
CANADIAN RHEUMATOLOGY ASSOCIATION | SOCIÉTÉ CANADIENNE DE RHUMATOLOGIE

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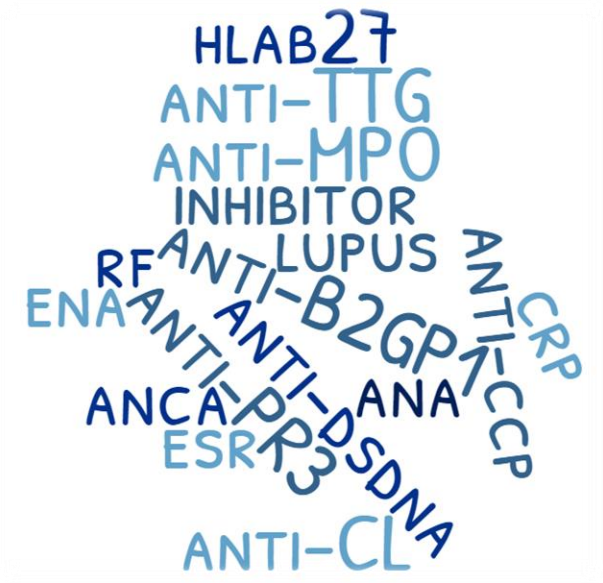
Background

Rheumatology often = a lot of blood work and other investigations



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Test	Cost (CAD$)
Albumin	5
ALT	5
AST	5
CBC	7
CRP	9
CK	15
Creatinine	5
ESR	6
Ferritin	8
LD	5
TSH	5
Urea	5
Urinalysis	10

Test	Cost (CAD$)
ANA	12.50
ENA	30.60
Anti-dsDNA	20.22
Anti-CL	24.50
Anti-B2GP	44.65
ANCA	60
TTG	30.25
HLA-B27	40.58
Anti-CCP	29.48
RF	8.41

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Dr. C. Naugler, Laboratory Utilization Office, Calgary Laboratory Services
Schedule of Fees for Laboratory Services, BC Ministry of Health, June 2020

Aim and Process

To establish a list of Choosing Wisely items for Pediatric Rheumatology in Canada

CW Working Group (17 members):

- Delphi Surveys: 80 -> 24 -> 13 items

National CRA Member survey n=13

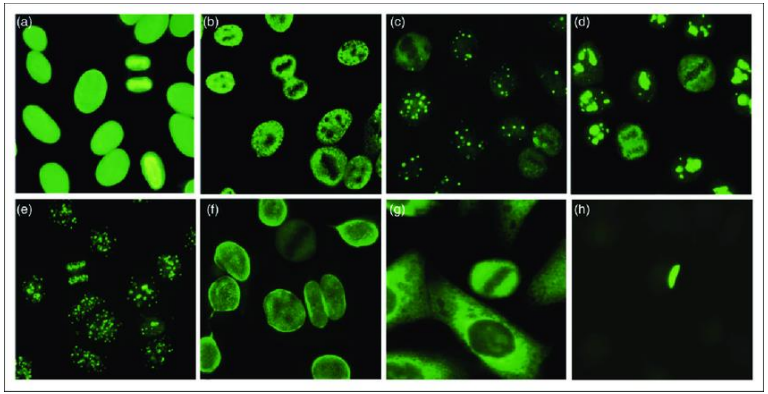
Item selection n=8

Literature review n=7

Review and approval of final **Top 7 List**

Recommendations

1. Do not order **ANA** as a screening test without specific signs or symptoms of a rheumatic condition



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ANA

What it is	What it isn't
Sensitive	Specific
May be positive in up to **20%** of healthy population	Not a diagnostic test for lupus, arthritis or other rheumatic disease
May be positive in infection, malignancy, etc	Poor predictive value in absence of any features of a systemic autoimmune rheumatic disease
Risk factor for development of uveitis in JIA patients	

ANA – a word on titre

- Reflects consecutive dilutions (indirect immunofluorescence)
- “Positive” ANA depends on the lab (in AB ≥1:40)
- Positive predictive value low if <1:160; PPV increases with increasing titre
- Also higher likelihood of positive anti-dsDNA /ENA with increasing titre

Jean-Baptiste Vulsteke et al, Annals of the Rheumatic Diseases. 2019 **80**; 8:e128-e128.
Bossuyt, X et al. Arthritis Rheum. 2005;53:987-8

Recommendations

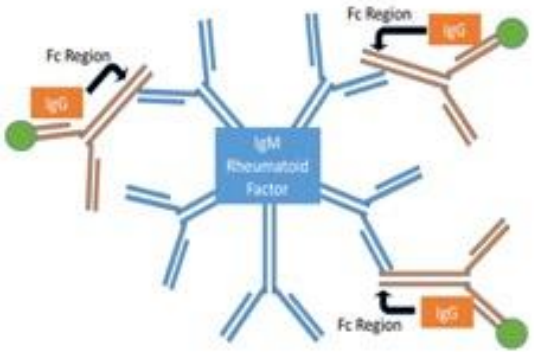
3. Do not order **HLA-B27** in patients with back pain unless spondyloarthropathy is suspected based on clinical signs or symptoms

HLA-B27

What it is	What it isn't
Present in **5-10%** of the population	Not sensitive nor specific
A risk factor for development of spondyloarthropathy and associated conditions (e.g. iritis)	Not a diagnostic test for JIA or spondyloarthropathy
Helps distinguish subtype of JIA	

Recommendations

4. Do not order **RF or anti-CCP** in patients with arthralgia but no arthritis on exam



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RF and anti-CCP

What they are	What they aren't
Specific (CCP > RF)	Sensitive
Help distinguish type of inflammatory arthritis	Not diagnostic in absence of arthritis

https://effectivehealthcare.ahrq.gov/sites/default/files/related_files/musculoskeletal-complaints-tests children_executive.pdf
Ahrari A,et al. Appropriateness of laboratory tests in the diagnosis of inflammatory rheumatic diseases among patients newly referred to rheumatologists. Joint Bone Spine 2020;87:588-95.

Summary: ANA, HLA-B27, RF, anti-CCP

- These tests should not be used in isolation to make a diagnosis of inflammatory arthritis or systemic autoimmune rheumatic disease
- A complete history and physical examination is most valuable diagnostically
- These tests should be used with there is a high pre-test probability (e.g. morning stiffness, joint swelling, malar rash, cytopenia, nephritis)

Consider two cases

1. 14 yo F with cold & purple hands, fatigue and knee pain with activity (+patellar compression).

2. 14 yo F with photosensitive facial rash, Raynaud's phenomenon, joint swelling.

Consider two cases

- Which test(s) would be of greatest utility?
  - A. ANA
  - B. RF
  - C. anti-CCP
  - D. HLA-B27
  - E. None of the above
  - F. All of the above

Provincial laboratory testing (BC, Nova Scotia)

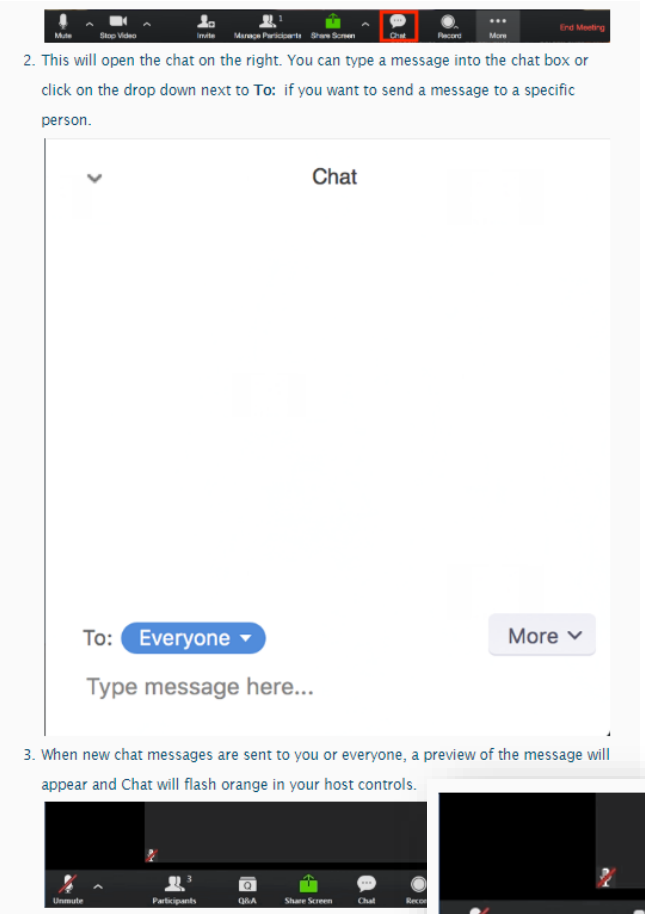
- ANA – if abnormal, proceed with ENA testing
- ENA or anti-dsDNA – only performed after positive ANA
- Anti-CCP – must be requested by a rheumatologist (or GIM specialist)
- HLA-B27– must be requested by rheumatologist, orthopedics or ophthalmologist

Schedule of Fees for Laboratory Services, BC Ministry of Health, June 2020
F20.3.101 rev. 17 - Laboratory Test Catalogue - Specimen Collection and Requirements (1).xls 2021-03-08

Next Steps

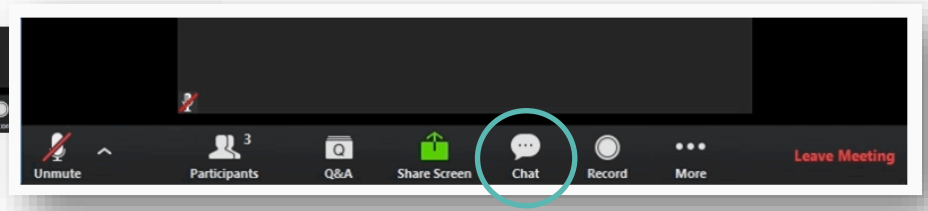
- Local quality improvement projects
- Work with other provincial/ regional laboratories to support Choosing Wisely principles
- Use of EMRs to facilitate ordering of tests consistent with CW recommendations

Barry et al, Optimization of the Order Menu in the Electronic Health Record Facilitates Test Patterns Consistent With Recommendations in the Choosing Wisely Initiative, *American Journal of Clinical Pathology*, 2020;153(1), 94–98



Q&A

- Please enter your questions using the **chat function**
- If you wish to contribute to the conversation, be sure to **un-mute** on the Zoom dashboard



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Thank you!

Next Webinar – Spring 2022

If you are interested in presenting, have resources you wish to share, or would like to be added to the mailing list, please complete the webinar feedback survey or email lauren.whitney@sickkids.ca

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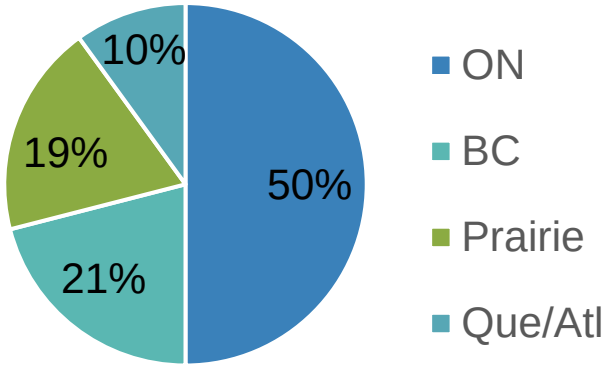
Reference Slides – Dr Nadia Luca

Results

CRA CW survey response
41/81 (51%)

- 56% female
- 47% 36-49 years
- 18% in practice ≥25 years

Geographic Distribution



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Additional Recommendations

2. Do not order **labs for drug toxicity monitoring** more often than every 12 weeks for patients on a stable dose of non-biologic DMARDs
5. Do not order **Lyme disease serology** as an explanation for musculoskeletal symptoms without an exposure history and exam findings
6. Do not use **intra-articular corticosteroid injections** as a treatment approach for a large number of joints or joints that have been injected multiple times in place of adjusting systemic disease-modifying therapy
7. Do not order a **periodic fever genetic panel** in patients with a classic presentation of PFAPA syndrome without features concerning for other genetic periodic fever syndromes