Antibiotics stewardship at the Jewish General Hospital

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Plan

Aim

- Reduce duration of antibiotics administration to 36h for suspicion of early onset sepsis in infants born at the JGH

Why does this matter?

- 48h as the current stop time for antibiotics at JGH, but in reality closer to 72h-96h
- Antibiotics administration impact gut health flora = impact NEC rate
- Good evidence supporting safety of discontinuing antibiotics at 36h

Do

- Review of the literature regarding safety of antibiotic stewardship
- Clinical round done on antibiotic stewardship to decide as a team on criteria to discontinue antibiotics at 36h mark
- Decision to make following changes to increase confidence to discontinue antibiotics at 36h:
  - Increase blood culture volumes to 1 mL for more reliable results
  - Increase request for stat placental pathology in case of chorioamnionitis suspicion
  - Review of maternal white blood cell count, cultures and antibiotics to detect cases of chorioamnionitis

Stop antibiotics at 36h in low-risk cases

Study

- Change in practice done July 2023, therefore we studied 6 months before and after the change in practice
- Assessed: type, length of antibiotics administration, WBC on initial CBC for infants:
  - Inborn at JGH
  - Admitted to NICU
- Validated results of blood cultures and lumbar punctures
- Here were the results of our review:

Table 1. Pre-post comparison

	Pre		Post	
	N of cases	% of cases	N of cases	% of cases
Average time of antibiotherapy	68.7 h		63.2 h	
Number of blood culture done	53		48	
Number of positive blood culture	1	1.9	2	4.2
Number of lumbar puncture done	6	11.3	6	12.5
Number of positive lumbar puncture	0	0	0	0
Number of abnormal WBC cases	11	20.8	8	16.7

Figure 1.

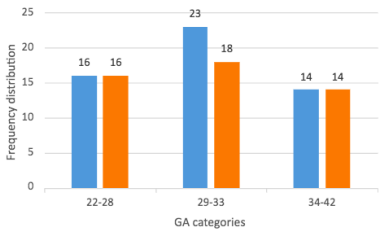
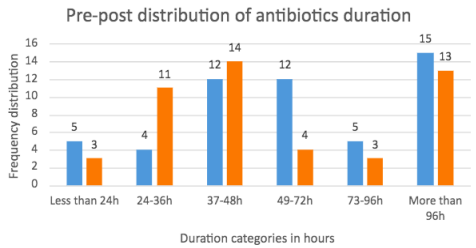


Figure 2.



Legend: Blue: Pre Orange: Post

Figure 3.

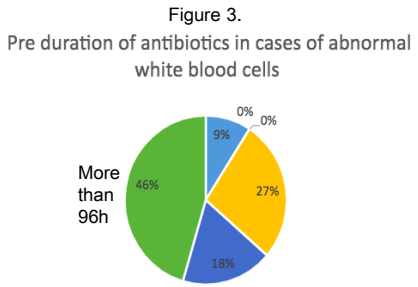
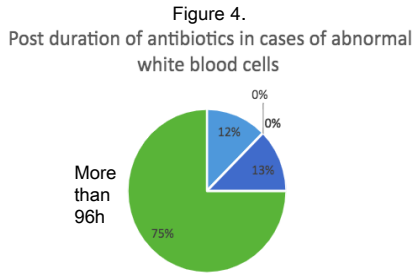


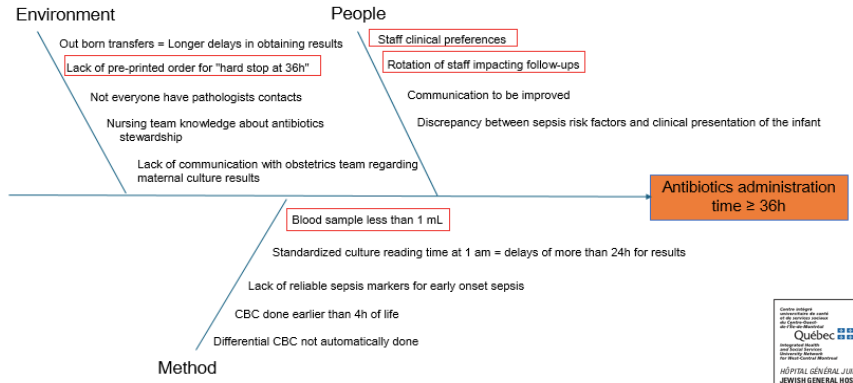
Figure 4.



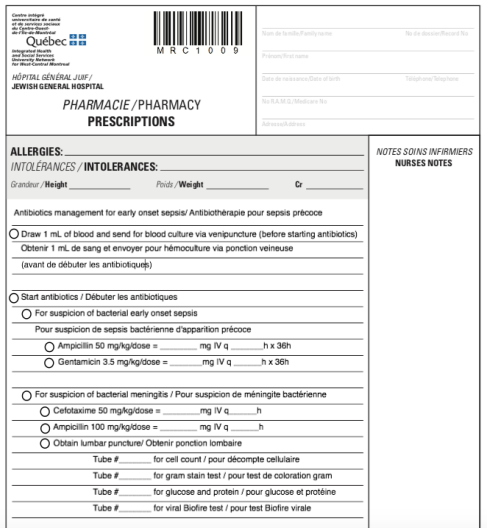
Infants with abnormal WBC persistently get longer antibiotics administration... unlikely to change for now due to challenges to differentiate source of leukocytosis...Differential CBC could be useful

Act

- Following the results we reviewed our approach and looked at barriers to get closer to a target of 36h



- **NEXT STEP: Focus on pre-printed order**
  - Provides automatic "hard stop" at 36h
  - Physician must separately order if they wish for antibiotics to continu
  - Will help reduce variation of practices and improve communications
  - Standardized culture volumes


PHARMACIE / PHARMACY
PRESCRIPTIONS

ALLERGIES:
INTOLÉRANCES / INTOLERANCES:

NOTES SOINS INFIRMIERS
NURSES NOTES

Antibiotics management for early onset sepsis/ Antibiothérapie pour sepsis précoce

- Draw 1 mL of blood and send for blood culture via venipuncture (before starting antibiotics)
  Obtenir 1 mL de sang et envoyer pour hémoculture via ponction veineuse (avant de débuter les antibiotiques)
- Start antibiotics / Débuter les antibiotiques
  - For suspicion of bacterial early onset sepsis
    Pour suspicion de sepsis bactérienne d'apparition précoce
    - Ampicillin 50 mg/kg/dose = _____ mg IV q _____h x 36h
    - Gentamicin 3.5 mg/kg/dose = _____mg IV q _____h x 36h
  - For suspicion of bacterial meningitis / Pour suspicion de méningite bactérienne
    - Cefotaxime 50 mg/kg/dose = _____mg IV q_____h
    - Ampicillin 100 mg/kg/dose = _____ mg IV q _____h
    - Obtain lumbar puncture/ Obtenir ponction lombaire
      Tube #_____ for cell count / pour décompte cellulaire
      Tube #_____ for gram stain test / pour test de coloration gram
      Tube #_____ for glucose and protein / pour glucose et protéine
      Tube #_____ for viral Biofire test / pour test Biofire virale

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