



**Supplement to the NAC-CCNMT Irradiation Recommendations:**

*2016 Canadian National Survey of Irradiation Practices in Neonatal Transfusion*

**SECTION 1: Survey Questions**

1. Please provide us with some information on your hospital.

**Note:** Please answer the following questions for each hospital that you oversee. For example, if you are responsible for two hospitals, please complete this survey twice with responses specific to each institution.

1a. Name of institution.

1b. Level of care provided in your neonatal intensive care unit?

Level 1       Level 2       Level 3

Use the [BC NICU Classification Tool](#) classification scheme when determining your Level of Care.

1c. Which of the following types of transfusions are performed in your institution? (select all that apply)

- Intrauterine transfusion
- Neonatal exchange transfusion
- Neonatal top-up transfusion
- Emergency unmatched for neonatal resuscitation

2. Is there a policy requiring provision of irradiated cellular blood components for any of the following:

2a. Intrauterine transfusion?

Yes    No    Not performed at our hospital

2b. Top-up transfusion in neonates who (select all that apply)

- Have received intrauterine transfusion:
- Are less than 1200 grams at birth
- Are less than 1500 grams at birth
- All neonates (0-4 months) regardless of birth weight
- Not performed at our hospital

2c. Exchange transfusion in neonates who (select all that apply)



- Have received an intrauterine transfusion:
- Are less than 1200 grams at birth
- Are less than 1500 grams at birth
- All neonates (0-4 months) regardless of birth weight
- Not performed at our hospital

**3. Is irradiation of cellular components for neonates done on site at your hospital?**

- Yes  No

**3a. If not, is there a manipulation of the red cell component to reduce the levels of potassium?**

- Yes  No

**3b. If not, are there rules restricting: (select all that apply)**

- The age of the blood prior to irradiation
- The length of storage time post irradiation

**4. To your knowledge, has there been a case of neonatal transfusion-associated graft-versus-host disease (TA-GVHD) at your hospital?**

- Yes  No

**5. To your knowledge, have there been complications related to hyperkalemia in neonates receiving irradiated red cells?**

- Yes  No

**5a. In the context of a top-up transfusion?**

- Yes  No

**5b. In the context of a large volume transfusion (e.g. cardiac surgery) or multiple top-up transfusions in succession?**

- Yes  No

**6. Prolonged storage of pre-irradiated red cells is associated with high potassium levels and in-vitro hemolysis. UK SHOT data report only a single case of TA-GVHD since the introduction of universal pre-storage leukocyte reduction in 1999. With this in mind:**



**6a. Would you agree with abandonment of the irradiation requirement for top up transfusions in neonates, who:**

- |  |                              |                             |
|--|------------------------------|-----------------------------|
| Have received intrauterine transfusion               | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Are less than 1200 grams at birth                    | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Are less than 1500 grams at birth                    | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| All neonates (0-4 months) regardless of birth weight | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

**6b. Would you agree with abandonment of the irradiation requirement for neonatal exchange transfusion?**

- Yes  No

**7. Do you agree with the following statement: *For emergency transfusions of unmatched group O, D negative red cells for neonatal resuscitation due to obstetric complications and/or accidents, irradiated cellular components are NOT required?***

- Yes  No

**8. Do you agree with the following statement:**

*Although 22q11.2 deletion syndrome (encompasses DiGeorge Syndrome) is most commonly associated with conotruncal lesions, the variety of heart defects described in patients with this syndrome is extensive. In order to avoid missing a neonate or young infant with immunodeficiency, it is recommended that neonates and young infants with congenital heart defects receive irradiated cellular components up to 6 months of age, at which time those suspected of having 22q11.2 deletion syndrome should have been tested for this disorder.*

- Yes  No

**8a. Please indicate your comments, if any:**

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**9. Do you think additional information is needed to improve strategies for preventing TAGVHD and the usage of irradiation?**

- Yes  No

**9a. If yes, please indicate your suggestions (randomized controlled trials, systematic reviews, consensus conference, etc.)**

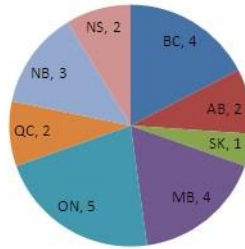
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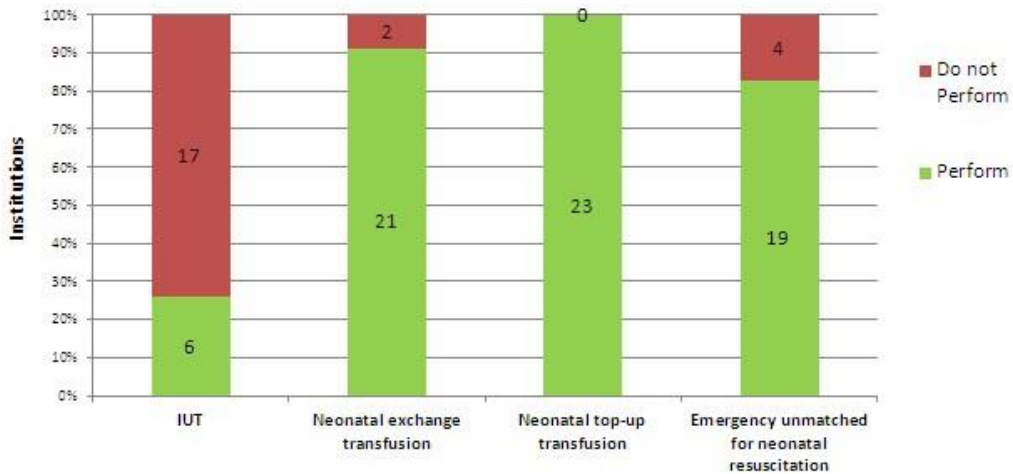
## SECTION 2: Survey Results

### Number of Institutions Responding to Survey



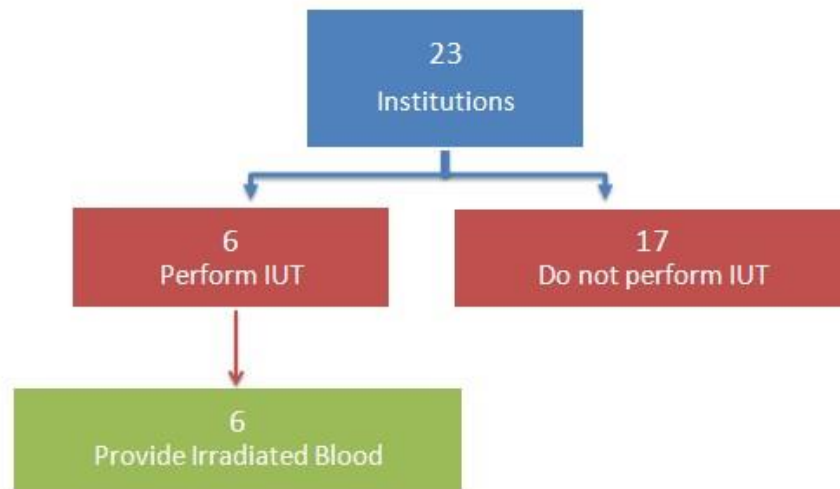
22 – Level 3  
1 – Level 2 (in MB)  
23 – Total

### Type of Transfusions Performed

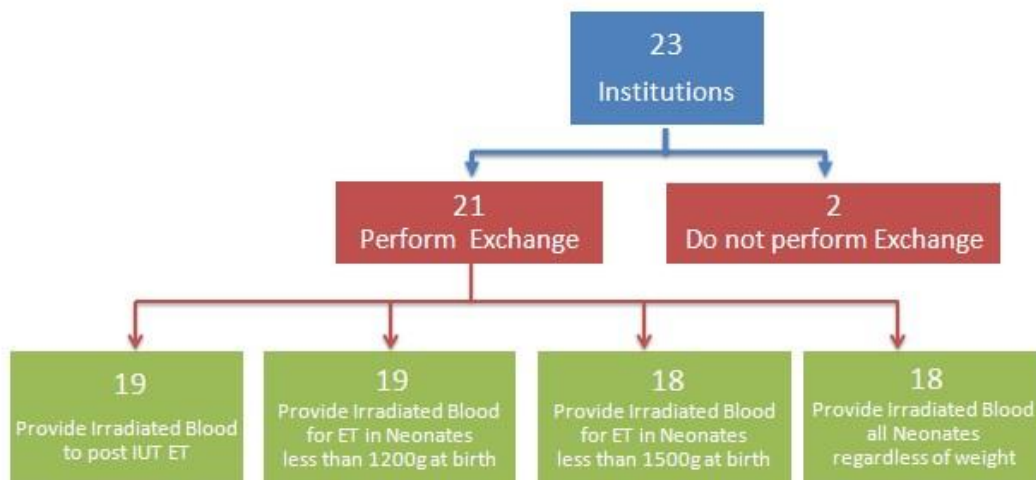




### Intrauterine Transfusions



### Neonatal Exchange Transfusions





## Top-up transfusions - Assumption

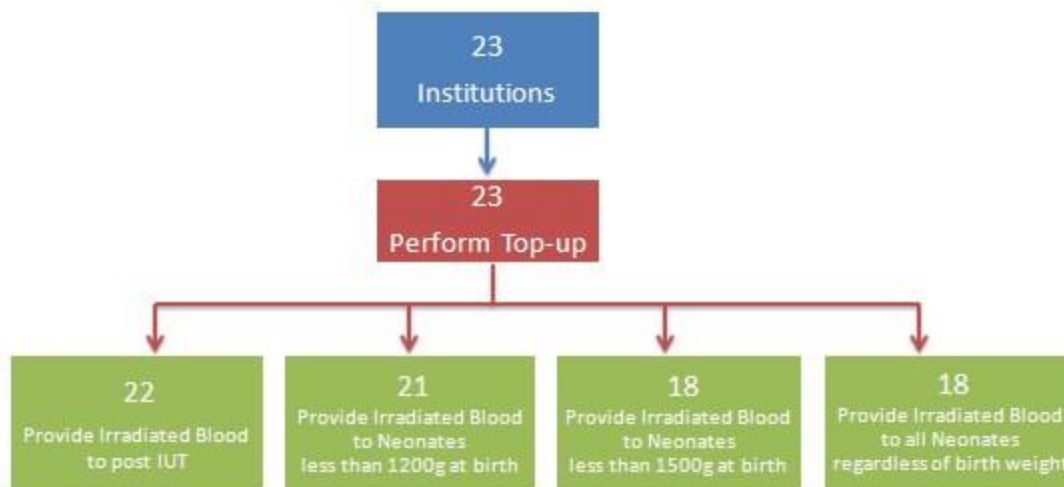
2. Is there a policy requiring provision of irradiated cellular blood components for any of the following:

2b. Top-up transfusion in neonates who (select all that apply)

- Have received intrauterine transfusion
- Are less than 1200 grams at birth
- are less than 1500 grams at birth
- All neonates (0-4 months) regardless of birth weight \*
- Not performed at our hospital

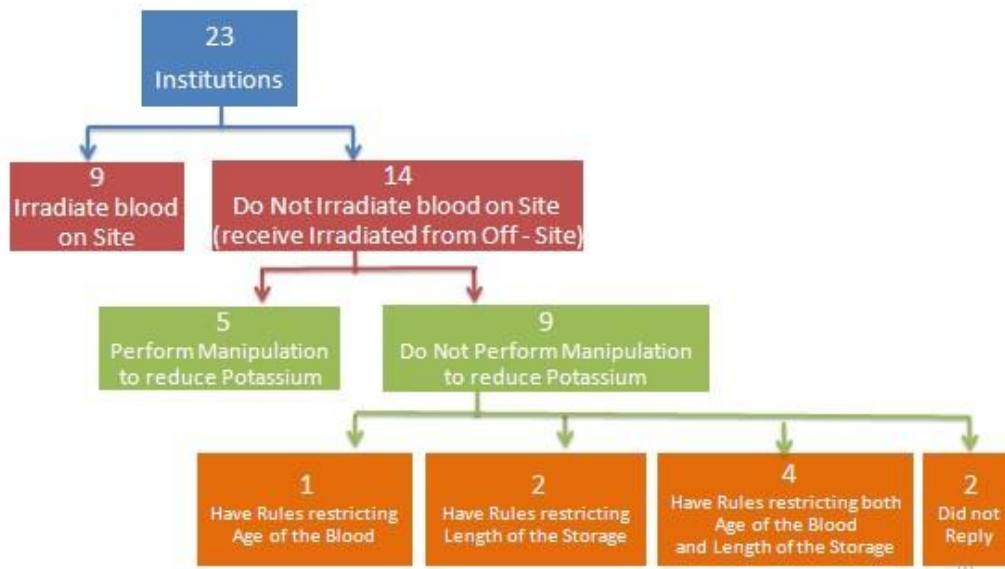
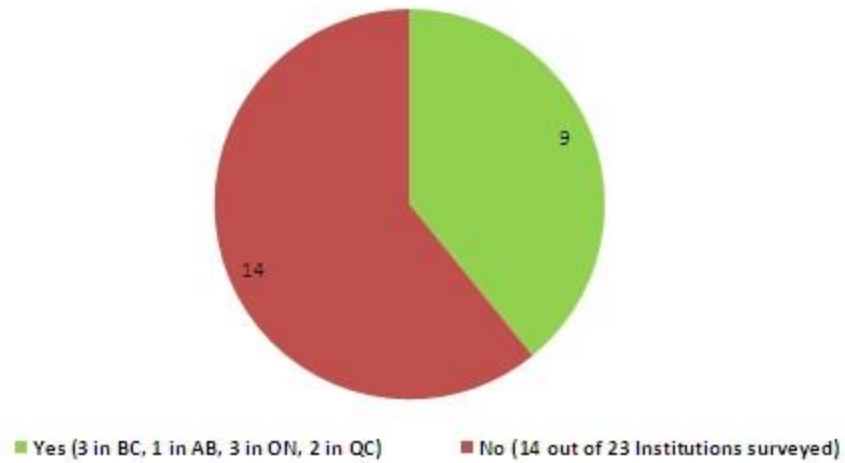
\* Applies to all the options above

### Neonatal Top - Up Transfusions





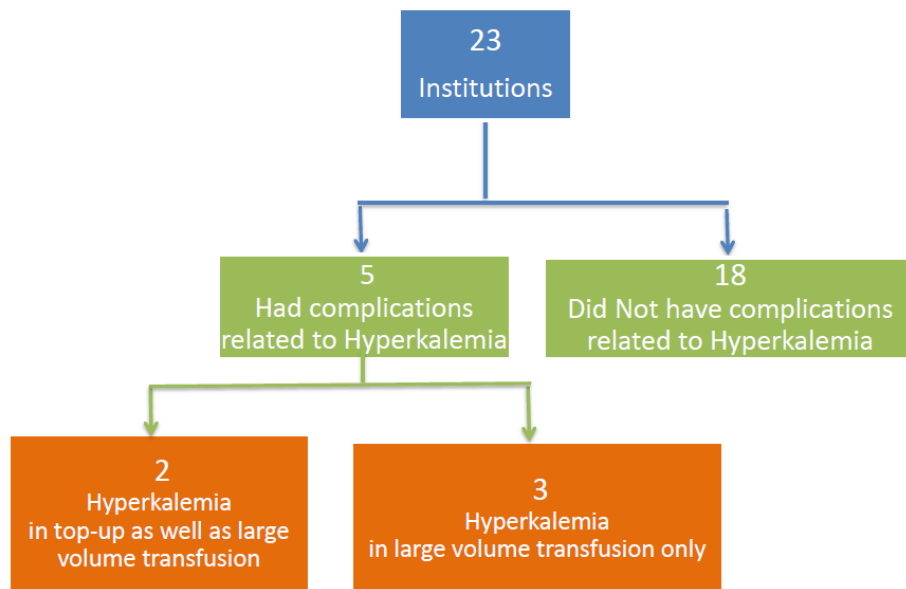
## Institutions with Irradiators on Site



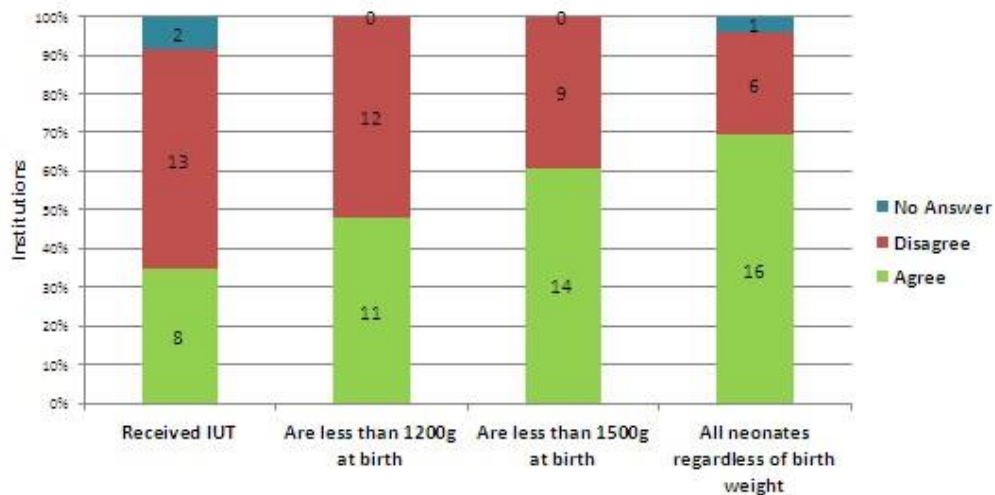




### Irradiation related hyperkalemia



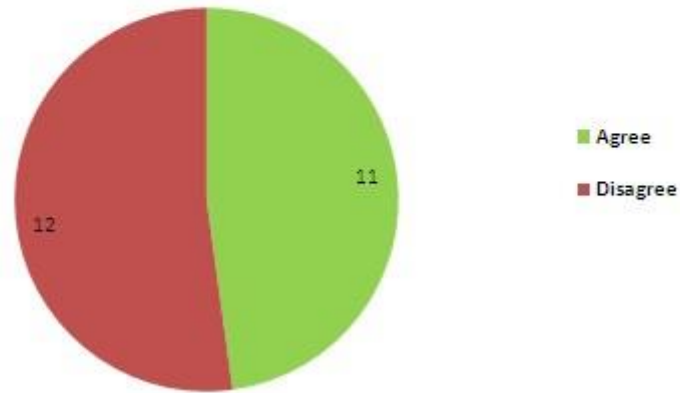
### Abandon Irradiation for Top - Up Transfusion in Neonates who



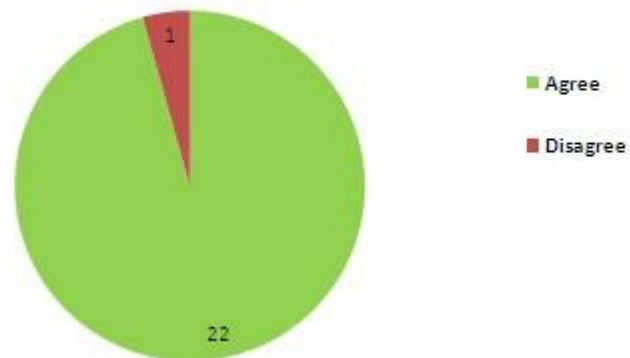




### Abandon Irradiation for Exchange transfusion in Neonates



### Irradiated blood is NOT required for Emergency Transfusions of unmatched group O RBC





## Neonates with congenital heart defects should receive irradiated blood until 6 months?

Di George Syndrome - testing for 22q11.2 deletion

