



**Provincial Emergency Blood Management Committee**

**Final Report of the  
Blood Shortage Simulation Exercise  
February 16 - 19, 2016**

Department of Health

August 2016

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## ABBREVIATIONS:

**PEBMC:** Provincial Emergency Blood Management Committee

**BEMP:** Blood Emergency Management Plans

**EBMC:** Emergency Blood Management Committee

**TM:** Transfusion Medicine

**CBS:** Canadian Blood Services

**NAC:** National Advisory Committee

**DoH:** Department of Health

**BSAG:** Blood System Advisory Group

**RHA:** Regional Health Authorities

## EXECUTIVE SUMMARY:

In 2010 The New Brunswick Department of Health (DoH) in collaboration with the New Brunswick Blood System Advisory Group (BSAG) and endorsed by the Provincial Emergency Blood Management Committee (PEBMC), developed the New Brunswick Blood Shortages Management Plan (the NB Plan) which aligns with the National Plan for the Management of Shortages of Labile Blood Components (the National Plan).

The purpose of the NB plan is to maximize the effectiveness of a provincial response to a crisis that impacts the blood supply in New Brunswick by providing a framework to ensure a consistent, coordinated response within the province. The intent is to provide guidance to New Brunswick's Regional Health Authorities (RHAs) in the development of Blood Emergency Management (BEMP) plans in their respective facilities.

The PEBMC continues to recommend yearly Blood Shortage Simulation Exercises in order to maintain awareness of a possible blood shortage and the actions which should be taken to reduce the impact to our blood system.

From February 16 -19, 2016 a blood shortage simulation was held in conjunction with Canadian Blood Services to test the NB Plan and its integration with Regional / Zone / Hospital BEMPs.

Past simulation exercises were a good test of the communication and awareness aspects of the Blood Shortage Plans within the Transfusion Medicine (TM) Departments, but we had not tested the decision making process during a shortage. The PEBMC requested the 2016 simulation exercise to include a red phase shortage that required triage and would run for several days. This simulation exercise was developed to highlight the importance of the triage team and the need for the participation of physicians, nurses and other health care professionals in managing a true shortage; this gave the Hospitals/Emergency Blood Management Committees an opportunity to assess the effectiveness of their current plans in managing a shortage.

Advance notice was communicated to all pertinent stakeholders that a simulation exercise would occur in February but the exact date was not announced until the TM Labs received communication from Canadian Blood Services on Feb 16, 2016.

The simulation was run as a paper based exercise and consisted of a set of 10 scenarios set over 2 days. A starting inventory of red cell units at a Red Phase level (less than 2 day's supply) including expiry dates was provided.

The simulation, which was a Red Phase blood shortage for group O Rh Positive, O Rh Negative, A Rh Positive and A Rh Negative red blood cells was initiated by Canadian Blood Services sending a Fax, email and phone call to all 20 TM Labs in New Brunswick per the process laid out in the NB Plan.

All TM Labs (100%) responded to the communications from Canadian Blood Services, simulated activation of their BEMP's, notified appropriate personnel as per their communication plan,

entered their daily inventory into the Canadian Blood Services Hospital Disposition reporting system and identified their facility Red phase inventory levels.

In addition, the 8 Regional Facilities received a sealed envelope containing the details of the scenarios with their Canadian Blood Services delivery. Due to the need for a broader group of participants in this exercise the Regional Facilities were given 3 days to find a suitable time to convene the appropriate personnel and complete the scenarios.

**The objectives of the simulation exercise were:**

- To ensure that the processes in place meet the needs of hospitals and that any gaps identified have recommendations in place to address them.
- To increase awareness of a possibility of a blood shortage amongst a broader range of stakeholders.
- Highlight the importance of the composition of the Triage Team.
- To initiate conversation on the decision making process and what steps need to be taken during a shortage.
- To utilize the Emergency Framework for rationing blood for massively bleeding patients during a red phase of a blood shortage protocol.
- Utilize forms to ensure clear and complete documentation of discussions and rationale for decisions made.

New Brunswick's two Regional Health Authorities approached the scenario section of the simulation in different ways.

- Horizon Health Network functions using a Regional model where all four of its areas are represented on a Regional Emergency Blood Management Committee (REBMC) and there is a Regional Triage Team. The REBMC and triage team met twice to complete the exercise. This recently formed Triage Team had met twice prior to the exercise but had been struggling with getting membership from the surgical service. This exercise highlighted the need to have that expertise during a shortage.
- Vitalité Health Network operates as four separate zones. They are still in the planning stages of developing Triage Teams. There was a regional aspect to the communication around the simulation exercise. The Emergency Measures Advisers in all 4 zones were contacted through their centralized email and they contacted the TM Lab managers to ensure they were aware of the exercise. Each Zone then chose how to approach the exercise. Zones would rely on their Emergency Measures Team for assistance during a true shortage.

The consensus of all participants was that it was an educational and very valuable exercise which was taken seriously and brought home that sometimes hard decisions will need to be made during a blood shortage.

There was excellent execution of the communication aspect of the simulation by all TM laboratories in the Province. The level of engagement continues to increase with each simulation exercise and positively impacts the emergency preparedness in the event of a blood shortage, although some gaps were still identified in some zones. It was also identified that the forms being used need to be revised as many are quite redundant.

The scenarios sparked much discussion among the Team members and, although there were no right or wrong answers, the conversations on what could or should be done during each situation, impressed upon the participants the complexity of the scenarios that could occur and the importance of the allocation appendix as a guide for the decision making process.

There was a lack of participation by physicians from some services during this simulation, as this would have removed them from their duties, but the exercise did highlight the importance of their participation during a real blood shortage.

The need for alternate blood conservation strategies, communication with clinical colleagues, patients and their families, spiritual care and the importance of difficult decisions being made by the expertise of the Triage Team using the triage criteria was highlighted in this exercise.

## BACKGROUND:

The Provincial Emergency Blood Management Committee (PEBMC), with representation from senior management of both regional health authorities as well as from the Department of Health (DoH) and Canadian Blood Services, was formed as a result of the development of the National Plan for the Management of Shortages of Labile Blood Components (the National Plan) by the National Advisory Committee (NAC) on Blood Products in partnership with Canadian Blood Services. The National Plan was first implemented in late 2009 to provide the framework to optimally manage the distribution and use of blood products in times of shortage.

In 2010 the New Brunswick Department of Health in collaboration with the New Brunswick Blood System Advisory Group (BSAG) developed an Emergency Blood Shortages Management Plan (NB Plan) which aligned with the National Plan and was to be used to provide guidance to New Brunswick's Regional Health Authorities (RHAs) to enable the respective facilities to develop their Blood Emergency Management plans (BEMP)

The purpose of the NB plan is to maximize the effectiveness of a provincial response to a crisis that affects the adequacy of the blood supply in New Brunswick by providing a framework to ensure a consistent, coordinated response within the province.

In 2011, an announced simulation exercise was conducted in April to test the communication portion of the NB plan, to identify gaps and to reinforce the need for Regional/Zone/Hospital BEMPs. An unannounced simulation followed in August to test the Regional/Zone/Hospital BEMPs that had been developed in alignment with the NB Plan and gauge the improvement as a result of lessons learned from the announced simulation.

The NB plan, just like the National Plan, are living documents which need to be reviewed after each simulation, real shortage event or after revisions to the National Plan. The National Plan was revised in January 2012 and in alignment with this the NB Plan was reviewed and revised in March 2014 to align with the changes as well as recommendations from previous simulations.

In April 2014, a planned blood shortage simulation was held in conjunction with Canadian Blood Services to test the New Brunswick Blood Shortage Management Plan: *Version 2.0* and its integration with Regional/Zone/Hospital BEMPs. An unannounced simulation exercise was conducted in August 2014 to capitalize on the previous experiences and reinforce the need to practice the responses.

The PEBMC has recommended two simulations per year as an effective mechanism to ensure appropriate responses in the event of a blood shortage.

In April 2015 an announced simulation exercise was held and this demonstrated an increased engagement by TM Labs in the Province and indicated it positively impacted TM Lab emergency preparedness in the event of a blood shortage.

At the PEBMC meeting in June 2015 it was decided to take the simulation exercises further and, using red phase inventory levels, utilize the documents in the toolkit to record patient impact and the actions needed to be taken to manage a blood shortage.

The National Plan was revised in October 2015 and Table 1: "Guidelines for the use of RBC Transfusions in children and adults in shortage situations" from this version, were circulated with the patient scenarios to be used in the decision making process during the simulation exercise. The NB Plan will be revised in alignment with the National Plan and incorporate any revisions identified during this simulation.

## SIMULATION EXERCISE: FEBRUARY 2016

**Jan 18, 2016:** Communications were sent to the Regional Health Authorities, the New Brunswick Emergency Management Committee and the Transfusion Medicine Laboratories to advise of an upcoming Blood Shortage Simulation Exercise in the month of February.

**Feb 15, 2016:** The Chair of PEBMC was notified by Canadian Blood Services on February 15, 2016 that there will be a Blood shortage simulation exercise on February 16<sup>th</sup> commencing at 08:00.

**Feb 16, 2016:**

- **08:00:** Canadian Blood Services initiated the simulation of a Red Phase Inventory Alert of red blood cells with an email to the P/T Blood Liaison at the Department of Health, who serves as the administrative arm of the PEBMC. Canadian Blood Services faxed the Simulation Alert Advisory as well as an instruction/action sheet to all the NB Transfusion Medicine Labs. They were also notified by telephone and email that an important Fax was being sent.

**The exercise scenario**, as provided to Transfusion Medicine Labs:

**DO NOT CANCEL ANY TRANSFUSIONS, SURGICAL or MEDICAL PROCEDURES BASED ON THIS EXERCISE.**

Hospitals have just received an urgent faxed communication and phone call from Canadian Blood Services, Dartmouth Distribution Site which indicates they are experiencing a Red Phase blood shortage for group O Positive, O Negative, A Positive and A Negative Red Blood Cells (RBC). Red phase implies that blood inventory levels are insufficient to ensure that patients with non-elective indications or need for transfusion will receive the required transfusion(s). Hospitals need to reduce their use of red blood cell inventory and transfusions. It is unknown as to when inventory levels will recover. .

Calls were complete by 08:47, but due to the size of the broadcast (9 pages) it took 2 hours for the Faxing to be complete. Email had to be sent 3 times as file size was not acceptable by all hospitals. ***(Larger file sizes can be put into a ZIP format to eliminate this issue)*** 100% of Hospitals sent a confirmation of receipt back.

- **08:39:** The DoH sent an email to members and alternates of the PEBMC to advise them that the simulation exercise was underway and that a debrief teleconference would be held on February 19, 2016 at 11:00.
- **09:06:** Email sent to the Blood System Advisory Group, the Executive Management Committees of the Regional Health Networks and the Department of Health to advise them that a blood shortage simulation was underway.
- **08:00-11:00:** The 8 Regional Facilities received the 10 scenarios and set inventory in a sealed envelope with their Canadian Blood Services delivery.
- **13:00:** A teleconference with the Hospital TM supervisors/designates, Canadian Blood Services and the DoH was held. At the time of the teleconference, 19/20 Transfusion Medicine Laboratories had reported their inventory numbers to Canadian Blood Services as requested. 15/20 facilities and all 8 zones had representation on the call.

Hospitals were reminded that no surgeries or patient treatment should be cancelled. An error was found on scenario #10 of the English version and on the evaluation sheet. Corrected versions were emailed to TM Labs immediately following the call. Simulation exercise steps were reviewed and questions answered.

**Feb 16-19, 2016:** Facilities responded to the communications from Canadian Blood Services, simulated activation of their Red Phase Emergency Blood Management plan, activated their communication plan, entered their daily inventory into the Canadian Blood Services Hospital Disposition reporting system and identified their facility Red phase inventory levels. In addition, the 8 Regional Facilities convened the appropriate personnel and completed the 10 scenarios. Due to the need for a broader group of participants in this exercise the Regional Facilities were given 3 days to find an appropriate time to convene and complete the scenarios

**Feb 18, 2016:** Scenarios which were delivered to 8 Regional Hospitals on day of simulation were emailed to the smaller sites for awareness.

**Feb 19, 2016**

- **13:30:** Canadian Blood Services faxed, emailed and telephoned the Recovery Phase Alert to all hospitals to advise them that the simulation was over. 100% of Hospitals sent the confirmation of Fax received back to Canadian Blood Services.
- **13:39:** An email was sent to the PEBMC, BSAG, and the Executive Management Committees of Horizon, Vitalité and the DoH notifying all that the exercise was completed.

**Feb 22, 2016:**

- **11:00:** A debrief teleconference with the PEBMC and the TM Labs was held. All 8 zones were represented as well as 11 members of the PEBMC.

**RESPONSE TO COMMUNICATIONS:**

Eight Zones participated in this exercise comprised of 20 facilities. The eight Regional Hospitals were directed to complete the entire exercise while the smaller facilities were to complete the first 7 steps.

- All 20 facilities were sent the Red Phase Advisory Fax from Canadian Blood Services with a follow-up call and 100% sent in their confirmation of receipt.
- 100% of facilities sent their inventory numbers to Canadian Blood Services as requested. There was 100% representation from Zones on the Canadian Blood Services Teleconference as well as attendance by 75% of the total facilities.
- 100% of hospitals returned their confirmation of receipt for the recovery Fax/phone call from Canadian Blood Services.
- 100% of the zones were represented on the debrief teleconference as well as 11 members of the PEBMC.

**EVALUATION SURVEY RESULTS: (APPENDIX H)**

All eight Zones with a total of 15 facilities responded for a total of 75% of evaluations returned. The 25% of evaluations not returned were from small facilities who report directly to their Regional facility.

- 100% of regional facilities documented their Red Phase Inventory Level. All smaller facilities also documented their inventory levels but some may have been unclear on the requirement to document a Red Phase Inventory level. This may be due to the wording in heading " Regular Inventory"
- When asked if senior TM staff and Medical Director were notified when fax received, 100 % replied yes.
- 100% of Zones notified their EBMC (75%) or TMC (25%).
- 88% (6/8 Zones) convened their EBMC while 1 convened their TMC and 1 did not convene a meeting.

- When asked if they have a pre-approved communication list and log 7/8 (88%) of zones and 3/7 (43%) of smaller facilities said yes.
- All Zones (100%) have a communications template for internal hospital notification.
- When asked if their communication template had a pre-determined modification to ordering practices to be used in order to conserve blood components in inventory 5/8 (63%) replied yes and 3/8 (37%) replied no.
- No Zones had a communication template to notify patients and their families to explain the need to defer their treatment but the Horizon EBMC (4 Zones) has one in development. **(Action: Will contact NAC as they indicated that they are developing a template)**
- 63% (5/8) of the Zones have a Triage Team. Horizon EBMC has a Regional Triage team which covers 4 Zones and 1 other zone has a small triage team.
- Those who do not have a Triage team, triaged patients with their TMC (2) or small team comprised of the TM Medical Director and TM Supervisor.
- Forms for documentation which are provided in the NB Plan toolkit or the Hospital/Regional Plans were used during this exercise. 63% (5/8) replied that these forms require revision as many are redundant. **(Action: Forms in NB Toolkit to be revised)**
- All but 1 zone utilized the Triage Document for massively bleeding patients. **( This was identified as a gap and will be incorporated into their plans.)**
- Documentation was completed around deferral/cancelations of transfusions/surgeries by all zones in varying degrees but it was identified that these forms required revisions.
- When asked if they did any of the following during the simulation:
  - Alter the way you issue units (i.e. 1 at a time): 7/8 (88%) Yes
  - Consider a blood group switching policy: 8/8 (100%) Yes
  - Recall any units already cross-matched: 3 Yes, 3 Yes if necessary, 2 No
  - Do you have a policy for use of untested or expired units: 8/8 (100%) Yes
- When asked if the table top exercise had a positive effect on their preparedness for a blood product shortage 100% of zones replied yes. All smaller facilities replied yes with the exception of 1 who was “Not Sure”.

**General Comments from evaluation:**

- Very well done. Was an excellent exercise for the members of the newly formed triage team. Helped them to better understand their role.
- Following completion of the exercise the scenarios were shared with MLT’s from smaller facilities. This was a very good learning experience and made them understand the importance of diligence in inventory management.
- Suggest consolidation of some forms
- An educational and challenging exercise. Much appreciated
- Exercise helped lab realize gaps in our procedures. Our EBM process will be evaluated and improved.
- All scenarios chosen reflected the reality of a small facility during a red phase.

## Scenario Responses:

Ten scenarios were provided to the Teams for discussion and decision on disposition of product using the red phase inventory levels provided and the Inventory Alert details provided by Canadian Blood Services.

### ***(See appendix E for scenarios)***

Below is a list of some of the decisions and lessons learned during these discussions.

- Stabilize and observe patient and transfuse if Hgb drops below 60g/L. *(This follows the current NAC Guidelines for the use of RBC transfusions in children and adults in shortage situations.)*
- If blood group is not part of the blood shortage order additional units from Canadian Blood Services.
- Use non-surgical interventions (ie: endoscopy, D&C, administer iron, interventional radiology )
- If a specific compatible group was previously cross matched for a patient, consider if a group not under the inventory shortage is appropriate, and issue that instead.
- Conversations with family or patient's clinicians may help determine if symptoms such as confusion are a new occurrence or not.
- Be cognizant of using oldest units first.
- Ethics and spiritual care consultations may be necessary.
- During Massive Transfusion Protocol events give group O Rh negative product until blood group is determined then switch to group specific.
- If patient is Rh negative consider issuing Rh positive blood in certain situations
- Suggest transfer to center that can treat patient with interventional radiology vs surgery.
- Elective surgeries to be deferred.
- Scenario with Ruptured Aortic Aneurysm created much discussion and differing opinions on whether to transfuse patient or not.
  - Will require many units and high mortality rate therefore do not transfuse
  - If surgeon wants to operate must be advised of shortage situation
  - Suggestion to use an auto-transfuser in operating room to reduce utilization by 80%
  - These type of decisions need to be made from the expertise of this group in providing the right information and facts
- Discussion on compassionate use of blood group not affected by the blood shortage.
- Discussion on transfusing a patient with blood group not affected by shortage in order for organ retrieval.
- For small amount of product used in pediatrics units may be aliquoted using a sterile docking device, or used within 24 hrs, and remainder transfused to another patient.

**General Comments:**

- Ensure there are sufficient redundancies amongst Triage Team
- People need to make this committee a priority
- Need to emphasise to our colleagues the importance of being part of this group
- In real life scenarios need surgical representative
- All Regional hospitals should be routinely stocked with AB Rh-Pos and B Rh-Pos
- Need to develop procedures for performing blood typing on blood from chest tube or intraosseous device
- Need education on the need for using 60g/L as a transfusion threshold in a blood shortage situation (as per recommendations from NAC)
- Chair of Local Trauma Advisory committee to be part of EBMC/Triage Committee ( or Medical Director of NB Trauma Program)
- Redundancy in communication is a good thing
- National Advisory Committee guidelines were very useful

**RECOMMENDATIONS:**

1. Forms in NB Toolkit and Hospital / Regional Plans to be revised.
2. Communication Lists and Logs to be implemented where not already in place and lists to be verified and updated regularly.
3. BEMP's be reviewed to ensure they have the most current guidelines as per the National Plan.
4. The importance of a Triage Team, or targeted group who will triage, be stressed in the decision making process during a shortage
5. Need to identify the role and duties of a person to document the decision making process and assignments made accordingly
6. Triage Team, or targeted group who will triage, has been educated to the NAC framework as approved by the province. Lead of Team to be identified.
7. Communication template updated to include the pre-determined modification to ordering practices as per the most recent National Plan.
8. Request that NAC develops a patient communication template
9. NB Trauma program and Ambulance NB to have some involvement during a red phase
10. Ensure education is provided to physicians that the plan exists (i.e.; ER Physicians, presentation to RMAC
11. Simulation exercises be continued on a yearly basis and the buy in from upper management and the clinicians is essential to ensuring NB is prepared.

## CONCLUSIONS:

Overall the simulation was a success as it demonstrated the engagement from all Transfusion Medicine Labs in the Province as well as a broader base of medical professionals who are critical in the decision making around management during a blood shortage. The need and role of the Emergency Blood Management Teams, Triage Team, National Guidelines and Emergency Framework for rationing of blood during a red phase of a blood shortage was demonstrated.

The scenario aspect of the simulation realized its intent by stimulating conversation among a broader base of stakeholders on what information and expertise is required to make decisions, sometimes difficult ones, during a critical blood shortage.

Alternate means of treating patients were discussed as well the importance of communication amongst the clinical care team of the patient when making a decision and the need to keep the patient and family informed of the situation and rational.

The exercise also demonstrated the importance of having processes in place prior to a shortage such as communication lists, templates, policies on inventory management practices etc., to minimize the time required to activate any plans and ensure all relevant stakeholders are notified.

For those Regions who do have a Triage Team, the exercise re-enforced the importance of this team. For those who used a small TM committee, the exercise emphasized the scope of responsibility in making those decisions.

Although our two RHAs approached the exercise in different ways, all took it seriously and found it to be challenging, educational and valuable. This exercise gives the EBMC/TMC an opportunity to assess the effectiveness of their current plans in managing a blood shortage.

New Brunswick is in a good position to react to a blood shortage but it is essential to have these exercises on a regular basis to keep all stakeholders engaged and plans current. Some gaps and updates to Hospital/Regional EBMPs were identified during this exercise and will be addressed by those regions. It was also identified that the forms for documentation of decisions require revisions.

The committee is extremely grateful for the support we were given during this exercise by Canadian Blood Services, the TM Labs, the EBMCs, TMCs, PEBMC and all stakeholders. Participation and engagement in events such as this are critical to ensure our plans are appropriate in order to coordinate a provincial response to a blood shortage.

It should be noted that this exercise was performed by NB Hospitals in isolation but due to the majority of inventory for NB being housed at Canadian Blood Services in Dartmouth; Dartmouth staff would be dealing with all hospitals in the Maritimes so communication timelines would be extended. Should a real red phase shortage ever happen there may also be a need for physicians, hospital staff and the DoH to consult with counterparts in NS and PEI to discuss the situation and patient impacts. The details of how this would be coordinated have yet to be determined.

**REFERENCES:**

The New Brunswick Emergency Blood Management Plan. *Version 2.0*

The New Brunswick Blood Shortage Management Plan –Toolkit (Appendix G of NB Plan)

National Plan for Management of Shortages of Labile Blood Products. – *October 2015*

Emergency Framework for rationing of blood for massively bleeding patients during a red phase of a blood shortage-*Synopsis for Triage Team*

Hospital/ Regional Emergency Blood Shortage Plans and Forms

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**APPENDIX A: COMMUNICATION TO RHA'S**

**Acute Services / Services aigus**  
**Health Services Division / Division des services de santé**  
 P.O. Box/C.P. 5100  
 Fredericton, NB E3B 5H1  
 Tel/Tél. (506) 444-4128  
 Fax/Télé. (506) 453-2958

**Date :** January 18, 2016 / le 18 janvier 2016

**To/Dest. :** John McGarry, President and Chief Executive Officer / président-directeur général, Horizon Health Network / Réseau de santé Horizon  
 Gilles Lanteigne, President and Chief Executive Officer / président-directeur général, Vitalité Health Network / Réseau de santé Vitalité

**From/ Exp. :** Dan Coulombe, Executive Director / Directeur général  
 Acute Services, Department of Health / Services aigus, Ministère de la Santé  
 Dr. Lakshmi Rajappannair, Chair of Provincial Emergency Blood Management Committee / president, le Comité provincial de gestion des réserves de sang en situation d'urgence

**Copies :** Provincial Blood Emergency Management Committee / Comité provincial de gestion des réserves de sang en situation d'urgence

**Subject/objet :** **Blood Shortage Simulation Exercise / Exercice de simulation de pénurie de sang**

The New Brunswick Blood Emergency Management Committee (PEBMC) in collaboration with Canadian Blood Services will be initiating a paper based Blood Shortage simulation Exercise in February of 2016.

En collaboration avec la Société canadienne du sang (SCS), le Comité provincial de gestion des réserves de sang en situation d'urgence (CPGRSSU) du Nouveau-Brunswick organisera un exercice de simulation de pénurie de sang sur papier en février 2016.

The Department of Health in conjunction with the PEBMC, developed the New Brunswick Blood Shortage Management Plan that is congruent with the *National Plan for the Management of Shortages of Labile Blood Products*, as approved by the Deputy Ministers of Health. The Plans provide a framework for Hospitals and RHA's to develop their own plans to ensure consistency and collaboration crucial to the effective management of a blood shortage.

En conjugaison avec le CPGRSSU, le ministère de la Santé a élaboré le Plan de gestion en cas de pénurie de sang du Nouveau-Brunswick, qui est conforme au *Plan national de gestion des pénuries de composants sanguins labiles*, tel qu'il a été approuvé par les sous-ministres de la Santé. Ces plans fournissent un cadre de travail qui permet aux hôpitaux et aux régies régionales de la santé d'élaborer leurs propres plans visant à assurer une cohérence et une collaboration essentielles à la gestion efficace d'une pénurie de sang.

The PEBMC, which has representation from senior levels of both Regional Health Authorities as well as national and provincial stakeholders, recommends yearly simulation exercises in order to maintain awareness of a possible blood shortage and the

Le CPGRSSU, qui compte parmi ses membres des cadres dirigeants de régies régionales de la santé (RRS), ainsi que des intervenants nationaux et provinciaux, recommande des exercices de simulation annuels afin de maintenir la

actions which should be taken to reduce the impact to our blood system.

Past simulation exercises were a good test of the communication and awareness aspects of the Blood Shortage Plans within the Transfusion Medicine Departments, but we have not tested the decision making process during a shortage. This exercise has been developed to highlight the importance of the triage team and the need for the participation of physicians, nurses and other health care providers in managing a true shortage. This will give the Hospitals/ Emergency Blood Management Committee's (EBMCs) an opportunity to assess the effectiveness of their current plans in managing a shortage.

The simulation will occur in February however the exact date of the simulation exercise will not be announced until the Transfusion Medicine Labs receive communication from Canadian Blood Services as per the process laid out in the NB Blood Shortage Management Plan.

We would like to thank all participants in advance for their cooperation and commitment to ensuring that New Brunswick Hospitals are prepared in the event of a blood shortage.

sensibilisation à l'égard de pénuries possibles de sang et des mesures qui doivent être prises pour réduire leurs effets sur notre système de collecte et de distribution du sang.

Les exercices de simulation antérieurs ont constitué un bon moyen de vérifier les aspects liés à la communication et à la sensibilisation à l'égard des plans de gestion en cas de pénurie de sang au sein des services de médecine transfusionnelle, mais nous n'avons pas vérifié le processus de prise de décisions durant une pénurie. L'exercice a été élaboré afin de souligner l'importance de l'équipe de triage et la nécessité de faire participer les médecins, les infirmières et infirmiers, ainsi que les autres fournisseurs de soins de santé à la gestion d'une véritable pénurie. Ainsi, les hôpitaux et les comités de gestion des réserves de sang en situation d'urgence auront l'occasion d'évaluer l'efficacité de leurs plans actuels de gestion de pénurie.

L'exercice de simulation aura lieu en février cependant, la date précise ne sera annoncée qu'au moment où les laboratoires de médecine transfusionnelle recevront un message de la Société canadienne du sang, conformément au processus établi dans le Plan de gestion en cas de pénurie de sang du Nouveau-Brunswick.

Nous tenons à remercier à l'avance tous les participants de leur coopération et de leur engagement afin de s'assurer que les hôpitaux du Nouveau-Brunswick sont préparés en vue d'une pénurie de sang.

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Dan Coulombe  
Executive Director / Directeur général  
Acute Services, Department of Health / Services aigus, Ministère de la Santé

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Dr. Lakshmi Rajappannair

Chair of Provincial Emergency Blood Management Committee / présidente, le Comité provincial de gestion des réserves de sang en situation d'urgence

**APPENDIX B: NOTIFICATION TO TRANSFUSION MEDICINE LABS****Provincial Emergency Blood Management Committee****Notification of Blood Shortage Simulation**

In collaboration with Canadian Blood Services and on behalf of the Provincial Blood Emergency Management Committee (PEBMC), who recommend that yearly simulation exercises should continue in order to maintain awareness of a possible blood shortage and the actions which should be taken to reduce the impact to our blood system, we will be holding a Red Phase paper based Blood Shortage simulation exercise in the month of February 2016.

The past simulation exercises were a good test of the communication and awareness aspects of the Blood Shortage Plans within the Transfusion Medicine Departments, but we have not tested the decision making around management during a shortage. This exercise has been developed to highlight the importance of the triage team and the need for the participation of physicians, nurses and other health care providers in managing a true shortage. This will give the Hospitals/ EBMCs an opportunity to assess the effectiveness of their current plans in managing a shortage.

**The Simulation Exercise will take place in the month of February.****NO TREATMENTS OR SURGERIES ARE TO BE ADJUSTED DURING THE SIMULATION EXERCISE.**

The simulation will be a paper based exercise only and will consist of a set of 10 scenarios set over 2 days. A starting inventory at a Red Phase level (less than 2 day's supply), including expiry dates, will be provided.

- All Transfusion Medicine Labs will receive a Fax from CBS initiating the simulation.
- The scenarios will be delivered to the 8 Regional Facilities in a sealed envelope with their CBS delivery.
- The smaller facilities will receive the scenarios later in the week for awareness
- Only the 8 Regional Facilities will complete the scenario section of the simulation and the smaller facilities will complete Steps 1-7 only.
- Due to the need for a broader group of participants in this exercise the Regional Facilities will be given 3 days to find an appropriate time to convene and complete the exercise.

- The scenarios along with the Red Phase inventory levels will necessitate the convening of Regional/Hospital Emergency Management Committees and Triage Teams and utilizing the “*Emergency Framework for Rationing of Blood for massively bleeding patients during a Red Phase of a blood shortage*”, as well as the National/ Provincial and Regional Blood Shortage Plans and associated forms.
- There will be a CBS teleconference held on Day 1 to answer any questions you may have on the exercise.
- There will be a debrief teleconference in conjunction with the PEBMC on the Monday following the simulation exercise.
- Completed scenario worksheets, forms, communication logs, examples of internal communication, as applicable, along with the evaluation should be returned to Gail Samaan at the Department of Health within 5 working days of completion of the exercise.
- A debrief report will be available in 6-8 weeks after the exercise.
- The PEBMC and the NB Blood System Advisory Group will review this information and make recommendations on improvements to the Provincial Plan

I would like to thank all participants in advance for their cooperation and commitment to ensuring that New Brunswick Hospitals are prepared in the event of a blood shortage.

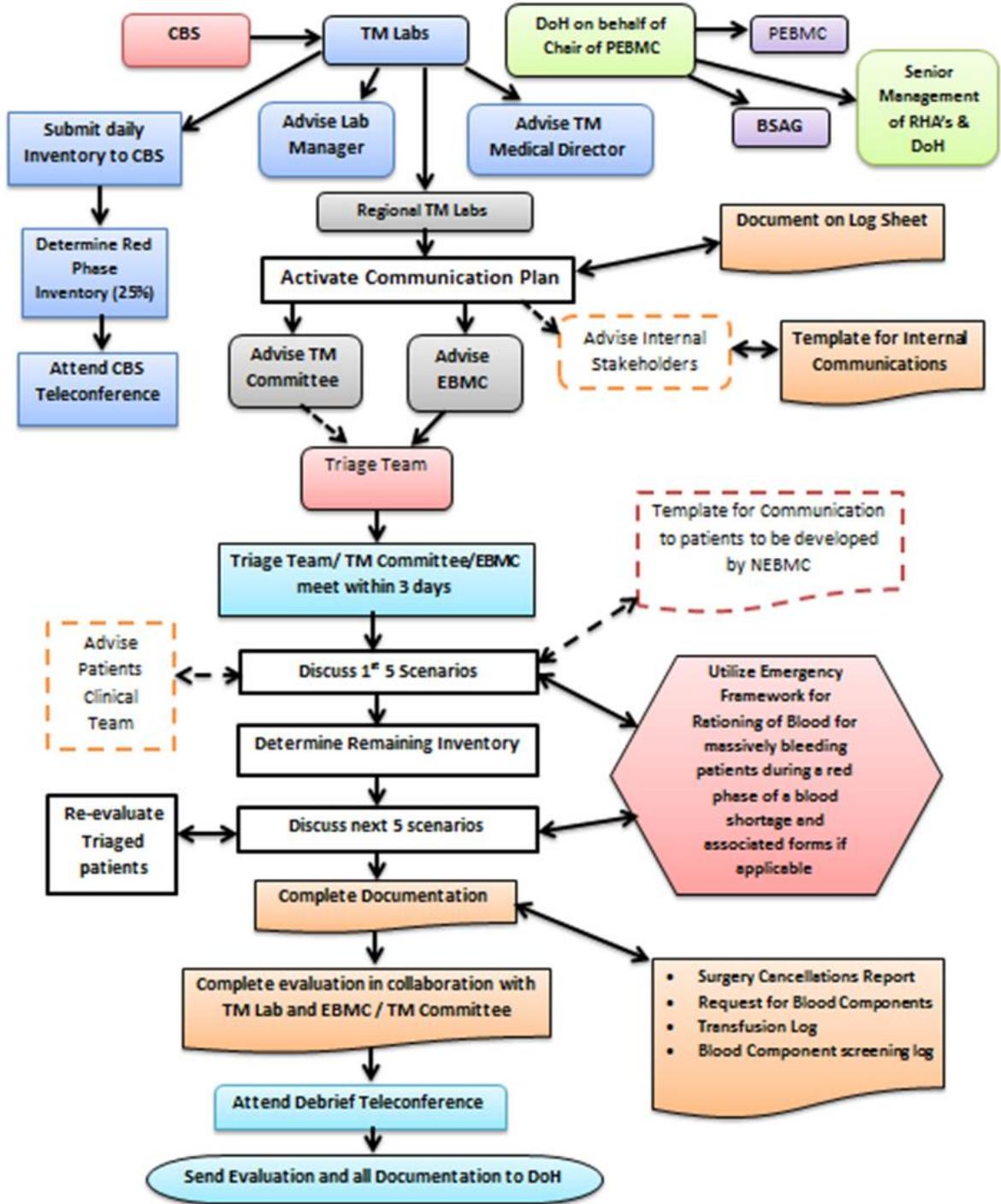
Sincerely

Dr. L Rajappannair

Chair, Provincial Emergency Blood Management Committee

APPENDIX C: SIMULATION EXERCISE FLOW CHART

Red Phase Blood Shortage Simulation Exercise Activities



APPENDIX D: ADVISORY NOTICE / INFORMATION SHEET



Canadian Blood Services  
Société canadienne du sang

## URGENT: Immediate Action Required

**To:** ALL NB HOSPITAL SITES  
**From:** Canadian Blood Services, Dartmouth Production and Distribution Site  
**Subject:** Blood Shortages Simulation Exercise for NB Hospitals, Inventory Advisory

FAX NOTIFICATION

<b>Date of Issue</b>	2016-02-16	
<b>Inventory Availability Phase</b>	RED	
<b>Product(s)</b>	Red Blood Cells (group O Positive, O Negative, A Positive, A Negative)	
<b>Description</b>	<p>Red Phase Blood Shortage Simulation Exercise For NB Hospitals</p> <p><b><u>DO NOT CANCEL ANY TRANSFUSIONS, SURGICAL or MEDICAL PROCEDURES BASED ON THIS EXERCISE.</u></b></p>	
<b>Impact on hospitals</b>	<p>Table Top Paper Exercise. A scenario Package will be delivered to Regional Hospital Sites Today. Smaller sites follow instructions in accompanying communication.</p> <p>Follow directions in the *National Blood Shortages Plan (including Emergency framework for rationing of blood for massively bleeding patients during a red phase blood shortage) / Provincial/ RHA and/or Hospital blood shortage plan as you complete the scenarios</p> <p><i><u>Please have a member of your Transfusion Medicine Laboratory team attend a teleconference today (Tuesday February 16, 2016) at 1:00pm with Canadian Blood Services to answer any questions you have about this exercise. Telephone 1-866-752-7690, Passcode 1026108#</u></i></p>	
<b>Contact Information</b>	<p><b>Shelley Doyle</b>  Acting Site Manager, Production, Dartmouth  Atlantic  Canadian Blood Services  E. shelley.doyle@blood.ca  T. 709-758-8065</p>	<p><b>Dorothy Harris</b>  Hospital Liaison Specialist,  Canadian Blood Services  E. Dorothy.harris@blood.ca  T. 605-648-5054</p>

\*For information about the National Blood Shortages Plan, please see <http://www.nacblood.ca/resources/shortages-plan/index.html>

Date: February 16, 2016

**DO NOT CANCEL ANY TRANSFUSIONS, SURGICAL or MEDICAL PROCEDURES BASED ON THIS EXERCISE.**

**Situation and Simulation scenario:**

Hospitals have just received an urgent faxed communication and phone call from Canadian Blood Services, Dartmouth Distribution Site which indicates they are experiencing a Red Phase blood shortage for group O Positive, O Negative, A Positive and A Negative Red Blood Cells (RBC). Red phase implies that blood inventory levels are insufficient to ensure that patients with non-elective indications or need for transfusion will receive the required transfusion(s). Hospitals need to reduce their use of red blood cell inventory and transfusions. It is unknown as to when inventory levels will recover.

**Actions: To be completed by all facilities**

1.  Send Fax receipt notification back to Canadian Blood Services
2.  Simulate activation of your hospital/regional Emergency Blood Management plan for a Red Phase.
3.  Notify appropriate personnel as per your communication plan. Document on notification Log.
4.  Enter your current actual total inventory ( crossmatched and uncrossmatched ) into the CBS Hospital Disposition Reporting System.
5.  Identify your facility red phase inventory levels for group O Positive, O Negative, A Positive, A Negative RBC. (This would be approximately 25% of your optimal green level RBC or less than 2 days on hand for these groups. This total includes both crossmatched and uncrossmatched units).

**Note:** Document your facilities Red Phase Inventory Levels in the chart on the evaluation form. **During the Table Top exercise a set Inventory of RBC units will be provided as part of the scenarios.**

6.  Attend CBS simulation Teleconference at 1:00 PM on Feb 16, 2016.
7.  At completion of Simulation Exercise complete evaluation form and forward to the Department of Health as indicated on form.

**The remainder of this exercise is to be completed by the Regional Hospitals only**

*(The Moncton Hospital, Dr. Georges L. Dumont University Hospital, Saint John Regional, Dr. Everett Chalmers Regional, Edmundston Regional, Campbellton Regional, Chaleur Regional, Miramichi Regional)*

**The smaller facilities will receive the scenarios by Feb 19<sup>th</sup> for awareness only.**

*(Sackville, Stella Maris, Sussex, Charlotte County, Oromocto, URVH, Perth, Grand Falls, Saint Quentin, L'Enfant Jesus, Lameque and Tracadie)*

**Table Top Exercise: To be completed by Regional Hospitals only**

- The scenarios for use with this exercise will be delivered in a sealed envelope to your facility with your Canadian Blood Services delivery today.
- It is intended that you complete this paper exercise based on the preparedness of your facility / regions blood shortage plan. If you are unable to complete the triage steps please document the reasons on the evaluation form.
- You are required to convene the appropriate personnel and complete the exercise within 3 business days.
- Please follow your triage process for these scenarios one at a time. After the first 5 scenarios document your remaining inventory and proceed with the next five. Although the scenarios take place over 2 days the exercise can be completed in one session.
- The intent of these scenarios is to initiate conversation on what steps may be taken within your team. Please feel free to add patient information, comments and rationale for your actions as you feel appropriate. Your comments will be used to improve the preparedness of our Provincial/Regional /Hospital Plans.
- There will be a debrief teleconference scheduled on Monday Feb 22, 2016 at 11:00 for the TM Labs in conjunction with the Provincial Blood Emergency Management Committee.

If you have any questions during this exercise please feel free to contact or Dorothy Harris at [Dorothy.Harris@blood.ca](mailto:Dorothy.Harris@blood.ca) Tel: 648-5054 or Gail Samaan at [gail.samaan@gnb.ca](mailto:gail.samaan@gnb.ca) Tel: 651-6114

8.  Identify any RBC which are soon to outdate, determine how best to use those units.
9.  Convene your Transfusion Medicine Committee/ Emergency Blood Management Committee / Triage Committee as appropriate within 3 days to complete the paper exercise.
10.  Use triage protocol and appropriate physicians / hospital personnel to determine how patients identified in exercise will be triaged and transfused
11.  Indicate who determined the actions that would be taken
12.  Utilize when appropriate, the Emergency Framework for rationing blood for massively bleeding patients during a red phase of a blood shortage. [Synopsis for Triage Team](#)
13.  Record triage actions and log transfusion determinations, decisions and comments on appropriate forms. *(Forms found in your Facility/Regional Blood Shortage Plan or the NB Blood Shortage Plan Toolkit as well as those found in the Synopsis for Triage Teams.)*

***Clear and complete documentation is essential for a complete patient record and for evaluation after the red phase.***

14.  Provide an example of communication to internal stakeholders.
15.  Document the re-evaluation of triaged patients as appropriate.
16.  Attend the debrief teleconference in conjunction with the PEBMC on Monday,

**February 22, 2016 at 11:00 AM. Dial in Information 506-637-9386 Participants code: 2216614**

17.  Complete the evaluation form and return along with any documentation completed during simulation to:

**Gail Samaan, NB Department of Health by fax at 1-506-462-2046 or scan and email to [gail.samaan@gnb.ca](mailto:gail.samaan@gnb.ca) by Friday Feb 26, 2015.**

#### **References which may be helpful:**

- National Plan for the Management of Shortages of Labile Blood Components ([www.nacblood.ca](http://www.nacblood.ca))
- Emergency Framework for rationing of blood for massively bleeding patients during a red phase of a blood shortage- Synopsis for Triage Team ([www.nacblood.ca](http://www.nacblood.ca))
- The New Brunswick Blood Shortage Management Plan, Version 2.0
- The New Brunswick Blood Shortage Management Plan- Toolkit (Appendix G of NB Plan)
- Hospital/Regional Emergency Blood Shortage Plans and Forms.

## APPENDIX E: PATIENT SCENARIOS

## Day 1: Starting Inventory

Blood Group /Rh	Regular Inventory	Expiry Dates	Anti CMV Negative /Irradiated	Expiry Dates
O Positive	11	1 unit =36hrs, 3 units =5 days, 2 units =8 days, 5 units =20 days	2	2 units = 26 days
O Negative	3	1 unit =12 hrs, 2 units =14 days	0	
A Positive	9	4 units =10 days, 3 units =12 days, 2 unit =20 days	1	1 unit = 3 days
A Negative	1	1 unit =12 days	0	
B Positive	3	1 unit =6 days, 2 units =24 days	0	
B Negative	0		0	
AB Positive	0		0	
AB Negative	0		0	

**FOR THE PURPOSE OF THIS PAPER EXERCISE ONLY!** You will not receive any additional group O or group A RBC inventory from Canadian Blood Services (the assigned inventory is all you have on hand for the next 2 to 3 days). Group B and AB red blood cells and all other components are available from Canadian Blood Services as required.

In a real life situation life threatening emergencies may need to be triaged in a different way than other transfusion patients. Please give this some thought during your discussions and document your comments on the evaluation forms.

**Scenario: Day 1**

These 5 patients have transfusions ordered today at your hospital. In collaboration with the appropriate hospital personnel, triage the patients based on the inventory provided and document the actions you would take for each patient in this situation.

Should you determine that these scenarios require additional clinical information to make an informed decision you may add information and document on the worksheet.

At the end of Day 1 document on the worksheet your remaining inventory after any activities performed using the Inventory levels provided in this document.

Scenario # 1			
<p><b>Patient A.B.</b></p> <p><b>50 Year old male arrived at emergency department this morning with GI bleed. Admitted to floor for observation, treatment and possibly pending surgery.</b></p>			
<b>Lab Results</b>	Hgb 67g/L  Blood Group AB Rh Positive		<b>Product Ordered</b>  2 Units to transfuse when ready  Lab Staff currently performing x match on 2 A Positive RBC units
<b>Product Issued</b>			<b>Treatment/Surgery Cancelled/Deferred</b>
<b>Comments / Rational</b>			
<p><b>Re-assessed after 24 hrs , 10 units or if change in clinical status:</b></p>			
<p><b>Triaged By:</b></p>			

Scenario # 2			
<p><b>Patient C.D.</b></p> <p><b>An 86-year-old female in- patient with anemia following diverticular haemorrhage. Admitted yesterday. Patient experiencing shortness of breath and confusion.</b></p>			
<b>Lab Results</b>	Hgb 66g/L Blood group A Rh negative Anti-Big C	<b>Product Ordered</b>	2 Unit RBC ordered
Scenario # 3			
<p><b>Patient E.F.</b></p> <p><b>19 year old female, 10 weeks pregnant presented to emergency room last night with heavy vaginal bleeding.</b></p> <p><b>Spontaneous incomplete miscarriage diagnosed. No transfusion history in LIS.</b></p>			
<b>Lab Results</b>	Initial Hgb 115g/L Hgb dropped to 73g/L Blood group O Positive	<b>Product Ordered</b>	4 Units RBC ordered
Scenario # 4			
<p><b>Patient G.H.</b></p> <p><b>69 year old Male transferred to hospital from nursing home. Symptoms cough, low blood pressure and fever. Treated for pneumonia and given 2L intravenous fluid. Patient reported feeling better and hypotension had resolved on day after admission. Patient has no obvious signs of bleeding.</b></p>			
<b>Lab Results</b>	At admission Hgb 90g/L 2 Days post 79g/L Historic Blood group A Rh Positive	<b>Product Ordered</b>	2 Units RBC ordered

Scenario # 5			
<p><b>Patient I.J</b></p> <p>49 year old male cyclist just arrived by ambulance in emergency department. He was struck by an SUV on his way to work. He is intubated because of respiratory distress and has multiple facial fractures and suspected internal injuries to spleen and kidney. A chest tube has been inserted and has drained 300mL blood. MTP has been activated in preparation for emergency abdominal surgery.</p>			
<p><b>Lab Results</b></p>	<p>A blood sample has not yet reached the laboratory for ABO typing.</p>	<p><b>Product Ordered</b></p>	<p>MTP Activated</p>

**Inventory at Start of Day 2 (to be completed after Patient #5)**

**FOR THE PURPOSE OF THIS PAPER EXERCISE ONLY!** You will not receive any additional group O or group A RBC inventory from Canadian Blood Services (the assigned inventory is all you have on hand for the next 2 to 3 days). Group B and AB red blood cells and all other components are available from Canadian Blood Services as required.

Blood Group /Rh	Regular Inventory	Expiry Dates	Anti CMV Negative /Irradiated	Expiry Dates
<b>O Positive</b>				
<b>O Negative</b>				
<b>A Positive</b>				
<b>A Negative</b>				
<b>B Positive</b>				
<b>B Negative</b>				
<b>AB Positive</b>				
<b>AB Negative</b>				

**Scenario: Day 2** (May be completed on same day as Day 1)

These 5 patients have transfusions ordered today at your hospital. In collaboration with the appropriate hospital personnel, triage the patients based on the inventory determined after day 1. Document the actions you would take for each patient in this situation.

Should you determine that these scenarios require additional clinical information to make an informed decision you may add information and document on the worksheet.

**Update from Day 1: Upon re-assessment of Patient 4 (G.H) there are now signs of internal bleeding and his Hgb is now 60g/L**

Scenario # 6			
<b>Patient K.L</b> <b>58 year old female admitted for Total knee arthroplasty</b>			
<b>Lab Results</b>	Hgb 100g/L  Blood group O Rh positive	<b>Product Ordered</b>	3 Units RBC ordered
Scenario # 7			
<b>Patient M.N.</b> <b>69 year old male scheduled for an aneurysm repair in 2 weeks was admitted to ER with a Ruptured Abdominal Aortic Aneurysm</b>			
<b>Lab Results</b>	Hgb 60 g/L Blood group O Rh positive ( Historical)	<b>Product Ordered</b>	MTP Activated  6 Units RBC ordered

Scenario # 8			
<p><b>Patient O.P.</b></p> <p><b>14 year old female arrived in emergency after falling from a third floor balcony. Hypotensive, pupils fixed and dilated.</b></p>			
<b>Lab Results</b>	BP: 70/50 Glasgow Coma Scale =3. Hgb 100g/L Blood group B	<b>Product Ordered</b>	1 Unit RBC ordered
Scenario # 9			
<p><b>Patient Q.R.</b></p> <p><b>85 year old female with metastatic colon cancer brought in from nursing home due to decreased level of consciousness. ECG shows signs of cardiac ischemia</b></p>			
<b>Lab Results</b>	Hgb 70g/L (decreased from 110g/L 3 weeks ago) Historic blood group O Rh Negative	<b>Product Ordered</b>	2 Units RBC Ordered
Scenario # 10			
<p><b>Patient S.T.</b></p> <p><b>3 month old male on O2 by nasal cannula, Heart Rate increased for the past 24 hours</b></p>			
<b>Lab Results</b>	Heart Rate 190 for past 24 hours Hgb: 97g/L Blood Group: O Negative	<b>Product Ordered</b>	50 mls RBC

## Inventory at end of Simulation Exercise

Blood Group /Rh	Regular Inventory	Anti CMV Negative /Irradiated
<b>O Positive</b>		
<b>O Negative</b>		
<b>A Positive</b>		
<b>A Negative</b>		
<b>B Positive</b>		
<b>B Negative</b>		
<b>AB Positive</b>		
<b>AB Negative</b>		

You have now completed the 10 Scenarios.

- Please ensure that the appropriate forms from your Hospital/Regional Emergency Blood Shortage Plan have been completed.
- Please complete and return the Evaluation Form, along with any completed documentation within 5 working days to the Department of Health. Any additional comments/ suggestions are welcome.
- Send to Gail Samaan, Acute Care, NB Department of Health:

**FAX: 506 462-2046 or email [gail.samaan@gnb.ca](mailto:gail.samaan@gnb.ca)**

- The information gathered will be reviewed by the Provincial Emergency Management Committee and the New Brunswick Blood System Advisory Group.
- All Hospitals will receive a summary of findings and any recommendations for improvement.

We would like to Thank you and your Team for participating in this Simulation Exercise.

**APPENDIX F: RECOVERY PHASE ADVISORY**



**URGENT: Immediate Action Required**

**To:** ALL NB HOSPITAL SITES  
**From:** Canadian Blood Services, Dartmouth Production and Distribution Site  
**Subject:** Blood Shortages Simulation Exercise for NB Hospitals – Simulation Exercise Completed

**FAX NOTIFICATION**

<b>Date of Issue</b>	2016-02-19		
<b>Inventory Availability Phase</b>	<b>Green</b>		
<b>Product(s)</b>	Red Blood Cells (group O Positive, O Negative, A Positive, A Negative)		
<b>Description</b>	Simulation Exercise Completed		
<b>Impact on hospitals</b>	<p><i>Please have a member of your Transfusion Medicine Laboratory team attend a post simulation teleconference on Monday February 22, 2016 at 11:00am with NB Emergency Blood Management Committee. Telephone 506-637-9386. Passcode 2216614#</i></p> <p>Complete your simulation exercise paperwork and evaluation form and forward to Gail Samaan by Fax at 506-462-2046 or email gail.samaan@gnb.ca</p>		
<b>Contact Information</b>	<table border="0"> <tr> <td> <p><b>Shelley Doyle</b>  Acting Site Manager, Production, Dartmouth  Canadian Blood Services  E. shelley.doyle@blood.ca  T. 709-758-8065</p> </td> <td> <p><b>Dorothy Harris</b>  Hospital Liaison Specialist, Atlantic  Canadian Blood Services  E. Dorothy.harris@blood.ca  T. 605-648-5054</p> </td> </tr> </table>	<p><b>Shelley Doyle</b>  Acting Site Manager, Production, Dartmouth  Canadian Blood Services  E. shelley.doyle@blood.ca  T. 709-758-8065</p>	<p><b>Dorothy Harris</b>  Hospital Liaison Specialist, Atlantic  Canadian Blood Services  E. Dorothy.harris@blood.ca  T. 605-648-5054</p>
<p><b>Shelley Doyle</b>  Acting Site Manager, Production, Dartmouth  Canadian Blood Services  E. shelley.doyle@blood.ca  T. 709-758-8065</p>	<p><b>Dorothy Harris</b>  Hospital Liaison Specialist, Atlantic  Canadian Blood Services  E. Dorothy.harris@blood.ca  T. 605-648-5054</p>		

On Behalf of Canadian Blood Services and the NB Emergency Blood Management Committee We Would Like To Thank You and Your Team for Participating in this Simulation Exercise.

**APPENDIX G: EVALUATION SURVEY**

**Instructions: Please complete with your actions and comments.**

This will help assess the impact of the ‘simulated shortage’ at your facility. This information will help to evaluate the functioning of the Provincial Blood Shortage Management Plan and indicate any need to make revisions for improvement for future situations.

Site and Event Information				
Name of facility:				
Completed By:			Date:	
Position:				
You Facilities Red Phase Inventory Level. ( Step 5)				
Blood Group /Rh	Regular Inventory	Anti CMV Negative /Irradiated	Expiry Date < 7 days	Total
O Positive				
O Negative				
A Positive				
A Negative				
Simulation actions:				
1. Senior Transfusion Lab staff notified when Fax received?			<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. Medical Director/ Designate notified when Fax received?			<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> NA
3. Emergency Blood Management Committee (EBMC) and/or Transfusion Medicine Committee (TMC) notified?			<input type="checkbox"/> EBMC	<input type="checkbox"/> TMC <input type="checkbox"/> NA
4. Was a meeting of your EBMC and/or TMC convened?			<input type="checkbox"/> EBMC	<input type="checkbox"/> TMC <input type="checkbox"/> NA
5. Do you have a pre-approved contact list and communication log.			<input type="checkbox"/> List	<input type="checkbox"/> Log <input type="checkbox"/> No
6. Do you have a communication template available for internal hospital notification.( In writing)			<input type="checkbox"/> Yes	<input type="checkbox"/> No
7. Does your communication template have a pre-determined modification to ordering practices to be used in order to conserve blood components in inventory?			<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> NA
8. Did your Medical Director review all orders which fall outside of these pre-determined guidelines			<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> NA
9. Do you have a communication template to notify patients and their families to explain the need to defer their treatment if necessary			<input type="checkbox"/> Yes	<input type="checkbox"/> No
10. Did you determine that you would perform any inter-hospital transfers? Do you have contact and transportation lists available?			<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Lists
11. Does your facility have a Triage Team			<input type="checkbox"/> Yes	<input type="checkbox"/> No

<p>12. If you do not have a Triage Team, who was the person responsible for determining cancelation/deferral of transfusions/surgeries.</p>																
<p>13. Was documentation completed around deferral of procedures/transfusions?</p> <ul style="list-style-type: none"> <li>• Surgery cancellation report</li> <li>• Request for Blood components</li> <li>• Transfusion Log</li> <li>• Blood component screening log</li> <li>• Other</li> </ul>	<table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> <td><input type="checkbox"/> NA</td> </tr> <tr> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> <td><input type="checkbox"/> NA</td> </tr> <tr> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> <td><input type="checkbox"/> NA</td> </tr> <tr> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> <td><input type="checkbox"/> NA</td> </tr> <tr> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> <td><input type="checkbox"/> NA</td> </tr> </table>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
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<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA														
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA														
<p>14. Was the documentation appropriate? ( <i>attach suggestions</i> )</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Requires revisions															
<p>15. Was the triage document for massively bleeding patients utilized?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No															
<p>16. Was the documentation in the Synopsis for Triage teams completed?</p> <ul style="list-style-type: none"> <li>• Triage Tracking Log</li> <li>• Patient Triage Record</li> </ul>	<table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> <td><input type="checkbox"/> NA</td> </tr> <tr> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> <td><input type="checkbox"/> NA</td> </tr> </table>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA									
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA														
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA														
<p>17. During the simulation did you do any of the following:</p> <ol style="list-style-type: none"> <li>a. Alter the way you issue units ( i.e. 1 at a time)</li> <li>b. Consider a blood group switching policy ( i.e. ABO match, age requirement)</li> <li>c. Recall any units already cross matched for other patients?</li> <li>d. Do you have a policy for use of untested or expired units?</li> </ol>	<p>Please specify:</p>															
<p>18. Did the Table Top Exercise have a positive effect on your preparedness for a blood product shortage</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not sure															
<p><b>Comments:</b> <i>Your comments will assist with improvements to the process.</i></p>																

**Thank you for your participation, on behalf of CBS and the NB Provincial Emergency Blood Management Committee**

Please FAX to NB Department of Health – Gail Samaan (506) 462-2046, [Gail.Samaan@gnb.ca](mailto:Gail.Samaan@gnb.ca)

**APPENDIX H: EVALUATION SURVEY RESULTS**

		Horizon Health Network	Zone 1 VHN	Zone 1 HHN	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7
Red Phase Inventory Level Provided		N/A	y	Y	y	Y	Y	Y	Y	Y
1	Senior Transfusion Lab staff notified when Fax received?	Y	y	Y	y	Y	Y	Y	Y	Y
2	Medical Director/ Designate notified when Fax received?	N/A	Y	Y	y	Y	Y	Y	Y	Y
3	Emergency Blood Management Committee (EBMC) and/or Transfusion Medicine Committee (TMC) notified?	EBMC/TMC	EBMC	EBMC/TMC	EBMC/TMC	EBMC	EBMC	TMC partly	TMC	EBMC/TMC
4	Was a meeting of your EBMC and/or TMC convened?	EBMC	EBMC	EBMC	EBMC/TMC	N/Regional meeting/	EBMC	N	TMC	EBMC
5	Do you have a pre-approved contact list and communication log.	LIST	List	List	List/Log	LIST	List	N	LOG	List
6	Do you have a communication template available for internal hospital notification.( In writing)	Y	Y	Y	Y	Y	Y	Y	Y	y
7	Does your communication template have a pre-determined modification to ordering practices to be used in order to conserve blood components in inventory?	Y	N	Y	N	Y	Y	N	Y	y
8	Did your Medical Director review all orders which fall outside of these pre-determined guidelines	TRIAGE COMMITTEE REVIEWED	N	TRIAGE COMMITTEE REVIEWED	Y	Y	Y	Y	Y	TRIAGE COMMITTEE REVIEWED
9	Do you have a communication template to notify patients and their families to explain the need to defer their treatment if necessary	N/IN DEVELOPMENT	N	N/IN DEVELOPMENT	N	N	N	N	Y	N/IN DEVELOPMENT
10	Did you determine that you would perform any inter-hospital transfers? Do you have contact and transportation lists available?	Y available in facility	N	N/List	N	N/List	Y	Y	Y	N/List
11	Does your facility have a Triage Team	Y	N	Y	Y (HTMC)	Y	Y	N	N	Y
12	If you do not have a Triage Team, who was the person responsible for determining cancelation/deferral of transfusions/surgeries	N/A	N/A	N/A		N/A	N/A	Lab Medical Director	Medical Director/Medical head of anaesthesia/surgery and ER	N/A
13	Was documentation completed around deferral of procedures/transfusions?									
	• Surgery cancellation report	Y	Y	Y	N	Y	y	Y	y	Y
	• Request for Blood components	Y	Y	Y	Y	Y	y	N/A	y	Y
	• Transfusion Log	Y	N	Y	Y	Y	Y	Y	y	Y
	• Blood component screening log	Y	N	Y	Y	Y	N/A	Y	y	Y
	Other	Y		Y	Y	N/A	N/A		y	Y
14	Was the documentation appropriate? ( attach suggestions )	Y	N	Requires revision	Y	Y	Requires revision	Requires revision	Y	Requires revision
15	Was the triage document for massively bleeding patients utilized?	Y	Y	Y	Y	Y	N	y (Table 1 guide)	Y	Y
16	Was the documentation in the Synopsis for Triage teams completed?									
	• Triage Tracking Log	Y	N	Y	Y	Y	N/A	Y	y	Y
	• Patient Triage Record	Y	N	Y	Y	Y	N/A	Y	y	Y

17	1. During the simulation did you do any of the following:									
	a. Alter the way you issue units ( i.e. 1 at a time)	Y		Y	Y		Y	Y	y	
	b. Consider a blood group switching policy ( i.e. ABO match, age requirement)	Y	Y	Y	Y	Y	Y	y	y	Y
	c. Recall any units already cross matched for other patients?	N/A		Y	Y		N	Would if necessary	y if necessary	Y
	d. Do you have a policy for use of untested or expired units?	Y	Y	Y	Y		Y	y	y	Y
18	Did the Table Top Exercise have a positive effect on your preparedness for a blood product shortage	Y	Y	Y	Y		Y	Y	y	Y
<b>Comments</b>										
<b>Zone 1 VHN</b>	We are going to use the guidelines for the transfusion log. We did not use some of them because they were almost identical									
<b>Zone 1 HHN</b>	Very well done. Was an excellent exercise for the members of the newly formed triage team. Helped them to better understand their role on the team . Following the completion of the exercise the scenarios were shared with all MLTs in Moncton, Sackville and Miramichi. Good learning experience and made them understand the importance of diligence in inventory management. Suggest consolidation of some of the forms. Quite a bit of redundancy									
<b>Zone 2</b>	An educational and challenging exercise Much appreciated									
<b>Zone 3</b>										
<b>Zone 4</b>	Better translation of the document would help. Had to read the instruction in both french and english because some of the translations made no sense. Simulation with scenarios like this would be good once in a while but not every year ( every other year?)									
<b>Zone 5</b>	TMC chair felt no need to convene for simulation. Exercise helped lab realise Gaps in our procedure. Our EBM process will be evaluated and improved for future simulations. can test improvements, changes and additions to our existing process. Thank-you for this exercise. I would suggest a repeat in 6-12 months, so that we can test improvements changes and additions to our existing process.									
<b>Zone 6</b>	Simulation is a good exercise to verify if all processes are in place at the different facilities. All scenarios chosen reflected the reality of the small facility during a red phase .I hope this exercise come again next year as is good practice. Thanks for the amount of work everyone made on this project									

**APPENDIX I: TIMELINE**

Table Top Simulation Exercise Feb 2016 - Timetable						
Date	Time	ACTION	Audience	Responsible	✓	Comments
Jan-18	13:40	Advance notification of Simulation	Senior Mgt Horizon, Vitalité . cc PEBMC	G. Samaan for D.Coulombe and Dr Rajappannair	✓	Notified that will be in Feb but exact date not given
Jan-19	14:00	Advance notification of Simulation	TM Labs	G. Samaan	✓	Notified that will be in Feb but exact date not given
Feb-15		Scenarios sent in sealed envelopes with blood delivery	Regional TM Labs	Dartmouth Distribution Staff	✓	
Feb-16	8:00	Fax and email with instructions sent	TM Labs	CBS Dartmouth/ D Harris	✓	Fax took 2 hrs to broadcast due to size ( 9 pages) . Email was too large for some sites . Sent French and English seperately, or Zipped file
Feb-16	8:24	Follow-up call by CBS	TM Labs	Dartmouth	✓	Calls completed by 8:47
		Confirmation of Fax receipt	CBS Dartmouth	TM Labs	✓	100% response
Feb-16	8:39	E mail to advise of simulation	PEBMC/ BSAG/ Horizon/ Vitalité/ DoH Senior Mgt	G Samaan	✓	
Feb-16	13:00	Teleconference to answer questions	TM Labs	D Harris/ G Samaan	✓	All 8 Zones present plus 7 small sites. 20/20 entered Daily inventory.
Feb 16-19		Scenarios to be completed by Regional Facilities		Regional TM Labs	✓	Regionally completed for HHN:TMH,DECH,MRH,SJRH* Individually by VHN: Bathust,Campb,EDM,GD. * SJRH also completed individually
Feb 18	15:49	Scenarios emailed to smaller facilities	TM Labs ( Not Regional)	CBS	✓	For awareness
Feb-19	13:30	CBS sends Return to Normal Advisory Fax	TM Labs / DoH	Dartmouth	✓	
Feb-19	13:33	Follow-up call by CBS	TM Labs	Dartmouth	✓	Calls completed by 14:00
Feb-19		Confirmation of Fax receipt	CBS Dartmouth	TM Labs	✓	100% response
Feb-19	13:39	E mail informing of conclusion of simulation	PEBMC/ BSAG/ Horizon/ Vitalité/ DoH Senior Mgt	G Samaan	✓	
Feb-22	11:00	Debrief Teleconference	PEBMC/ TM Labs/CBS	G Samaan/D Harris	✓	All 8 Zones present plus 12 PEBMC Members