Report on Ontario Blood Shortage Exercise held February 2014
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### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPCO MOHLTC</td>
<td>Blood Programs Coordinating Office, Ministry of Health and Long-Term Care</td>
</tr>
<tr>
<td>CBS</td>
<td>Canadian Blood Services</td>
</tr>
<tr>
<td>CPWG</td>
<td>Contingency Planning Working Group</td>
</tr>
<tr>
<td>EMB MOHLTC</td>
<td>Emergency Management Branch, Ministry of Health and Long-Term Care</td>
</tr>
<tr>
<td>HEBMC</td>
<td>Hospital Emergency Blood Management Committee</td>
</tr>
<tr>
<td>HEBMP</td>
<td>Hospital Emergency Blood Management Plan</td>
</tr>
<tr>
<td>MEOC</td>
<td>Ministry Emergency Operations Centre</td>
</tr>
<tr>
<td>MOHLTC</td>
<td>Ministry of Health and Long-Term Care</td>
</tr>
<tr>
<td>NAC</td>
<td>National Advisory Committee on Blood and Blood Products</td>
</tr>
<tr>
<td>National Plan</td>
<td>National Plan for the Management of Shortages of Labile Blood Components</td>
</tr>
<tr>
<td>OEBMC</td>
<td>Ontario Emergency Blood Management Committee</td>
</tr>
<tr>
<td>Ontario Plan</td>
<td>The Ontario Contingency Plan for Management of Blood Shortages</td>
</tr>
<tr>
<td>PWA</td>
<td>Platelet Web Application</td>
</tr>
</tbody>
</table>
Executive Summary

The Ontario Contingency Plan for Management of Blood Shortages (Ontario Plan) was originally developed and published in January 2008. A simulation blood shortage exercise was held March 10, 2010 to test out the plan and determine how well prepared Ontario hospitals were to respond to a National blood shortage. Recommendations were made following analysis of the results of the exercise and resulted in the revision and release of version 2 of the Ontario Plan. It was decided that a second simulation blood shortage exercise would be held in February 2014. The Contingency Planning Working Group (CPWG) developed the scenario and agenda for this exercise.

The 2014 exercise simulated a provincial platelet shortage resulting from severe winter weather that restricted blood collection and production as well as transport of blood between provinces. All Ontario hospitals that receive blood from Canadian Blood Services (CBS) were included in this exercise. The platelet shortage was initiated as an Amber Phase shortage that progressed to a Red Phase shortage throughout the day. The exercise was initiated on February 3, 2014 and continued through February 4, 2014.

The objectives of the 2014 exercise were to test 4 aspects of the Ontario Plan Version 2:

1. Notification process for a provincial blood shortage
2. Activation of each hospital’s emergency blood management plan (HEBMP)
3. Redistribution networks established in the province
4. Operations of the Ministry Emergency Operations Centre (MEOC)

Feedback from participants was gathered throughout the exercise and following the exercise, an online survey was issued to Ontario hospitals to collect data and comments. Analysis of the results from the exercise included comparison to the recommendations made in 2010 to determine how well they had been implemented and if improvement in performance could be seen. Debrief meetings were held internally by CBS and the Ministry of Health and Long-Term Care (MOHLTC) to identify lessons learned and recommended actions to improve response.

Key recommendations identified include:

- Hospitals should continue to refine their plans and fill any gaps identified in this exercise
Hospitals should ensure their plan includes the requirement for deferral decisions to be documented
Hospitals should report their inventory to CBS routinely and as requested by CBS
CBS should consider implementing a process to ensure notification of hospitals in a timely manner
CBS should provide guidance on what is needed following notification of recovery phase
CBS should develop internal processes and tools for staff to further improve their response
BPCO/CPWG should continue to develop and continually improve the Ontario Plan as well as run these exercises periodically
BPCO/CPWG should clarify how clinical recommendations for hospitals by the Ontario Emergency Blood Management Committee (OEBMC) should be communicated during a blood shortage to help ensure the consistency of response
CBS and BPCO should identify ‘trigger provincial inventory levels’ that would result in CBS alerting the BPCO Manager to determine if further action is required

The exercise appeared to be successful in achieving its objectives. Feedback from the majority of participants indicated that gaps in existing plans and processes were identified. Blood simulation exercises can help ensure continuing improvement of the preparedness of response to a blood shortage and ensure Ontario will be ready to respond if needed.

**Background**

In response to a priority identified by the Ontario Ministry of Health and Long-Term Care (MOHLTC) the initial version of the Ontario Contingency Plan for the Management of Blood Product Shortages (hereafter referred to as ‘Ontario Plan’) was released in January 2008. Along with this document, an accompanying toolkit was provided to support hospitals in the province of Ontario with the development of their own facility specific plan to manage their blood inventory in the event of a serious supply shortage.

On March 10, 2010, a simulated blood shortage exercise was held in order to test the preparedness of Ontario to respond to a blood shortage notification. All hospitals with a licensed transfusion service (158 hospitals) in the province of Ontario were made aware of the exercise and asked to be ready to participate in the exercise, however only 27 (17%) hospitals were actually asked to respond. This exercise simulated a national red blood cell shortage (Amber Phase) and was triggered (at
the request of the BPCO Manager) through the National Advisory Committee on Blood and Blood Products (NAC) Chairperson as per the direction of the National Plan for the Management of Shortages of Labile Blood Components (National Plan).

As a result of this exercise, several recommendations were made in order to improve the preparedness and response of those involved in the blood system in Ontario (see table 1).

Table 1—Recommendations from the Ontario Blood Shortage Exercise held March 10, 2010

<table>
<thead>
<tr>
<th>Hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hospital plans should be finalized</td>
</tr>
<tr>
<td>2. Staff should be trained on the plan</td>
</tr>
<tr>
<td>3. Have processes and agreements in place to redistribute products as required</td>
</tr>
<tr>
<td>4. Have a process in place for notifying patients if treatment is to be deferred or cancelled</td>
</tr>
<tr>
<td>5. Identify a committee to support maintenance of the blood shortage plan and support decision making during a shortage</td>
</tr>
<tr>
<td>6. Develop and maintain a contact list to facilitate staff notification process</td>
</tr>
<tr>
<td>7. Be familiar with CBS inventory reporting</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Canadian Blood Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Notification process should include a phone call in addition to fax as well as an email to TM Medical Directors</td>
</tr>
<tr>
<td>2. Ensure notification document is clearly marked ‘URGENT’</td>
</tr>
<tr>
<td>3. Use of multiple fax machines could avoid conflict between incoming and outgoing fax messages and help speed up process</td>
</tr>
<tr>
<td>4. Clarify what information CBS requires from hospitals; CBS role in redistribution; CBS role in allocation of product in hospital inventory</td>
</tr>
<tr>
<td>5. Avoid acronyms in communications to hospitals</td>
</tr>
<tr>
<td>6. Provide notification of shortage early in day before surgeries begin</td>
</tr>
<tr>
<td>7. Schedule CBS teleconferences to avoid conflicts for attendees with hospitals in more than one region</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Blood Programs Coordinating Office</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Avoid use of acronyms in communications to hospitals such as HEBMC</td>
</tr>
<tr>
<td>2. Develop provincial guidance documents to improve standardization in screening criteria for deferral of transfusion</td>
</tr>
<tr>
<td>3. Include notification of CritiCall, ORNGE, ambulance services</td>
</tr>
<tr>
<td>4. Provide guidance on notification responsibility for sites that receive their blood from another hospital</td>
</tr>
</tbody>
</table>

Recommendations to include in next version of Ontario Plan

| 1. Templates for documenting decisions for deferral                      |
| 2. Template for patient notification                                       |
| 3. Checklist for actions to be taken at the hospital to facilitate training |
Planning the 2014 Exercise

One of the recommendations coming out of the March 2010 exercise was to hold regular exercises to continually test and improve the Ontario Plan and help ensure Ontario is prepared to respond in the event of a true blood shortage. The 2014 exercise plan was developed by the Contingency Planning Working Group (CPWG), a subgroup of the Ontario Emergency Blood Management Committee (OEBMC). See Appendix A for a list of members.

The objectives of the 2014 exercise were to test 4 aspects of the Ontario Plan Version 2:

1. Notification process for a provincial blood shortage
2. Activation of each hospital’s emergency blood management plan (HEBMP)
3. Redistribution networks established in the province
4. Operation of the Ministry Emergency Operations Centre (MEOC)

Based on these objectives, a scenario was created. The scenario described a severe provincial supply constraint resulting from an extraordinary winter storm that restricted collection of blood as well as interprovincial movement of product. For the purposes of the exercise, the shortage was restricted to platelets to lessen the impact on operations at the participating hospitals.

It was decided that the shortage would progress from an Amber level to a Red level to allow all participants to walk through both of these phases within their plan prior to reaching a recovery level which signaled the end of the exercise.

An agenda was developed to help structure the exercise and define roles and responsibilities of participants. See Appendix B for the Agenda. On the advice of the Emergency Management Branch (EMB) of MOHLTC, hospitals were notified of the week on which the exercise would be held but not the actual day. EMB also suggested holding orientation sessions two weeks prior to the exercise to help participants understand the objectives of the exercise and clarify expectations. As a
result of the feedback from the orientation sessions, hospital Chief Executive Officers (CEOs) received a letter from the MOHLTC informing them of the upcoming exercise and encouraging their hospital’s participation.

The day following the exercise, hospitals were invited to attend a debriefing teleconference. A survey was used to capture additional information on their response to the exercise. CBS and MOHLTC both held internal debriefing meetings to review their performance during the exercise and assess how well their response plan functioned. OEBMC members were asked to provide their feedback on the exercise.

**Hospital Survey Results**

A link to the online survey was distributed to all Ontario hospitals that receive blood from CBS the morning following the end of the exercise. Hospitals were asked to fill out one survey per site and to respond within three days.

Survey questions covered the following areas:
- Hospital Emergency Blood Management Plans
- Platelet Inventory Management
- Communication

There were 59 questions in the survey which was developed by the CPWG and created in LIME survey. The survey was distributed to 158 hospitals within the province of Ontario and included all those that have a licensed transfusion service and receive blood from CBS. 134 responses (85% response rate) were received and 96 responses were complete (all questions answered).

**Hospital Emergency Blood Management Plan (HEBMP)**

**Table 2 – Survey results on HEBMP**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you have a HEBMP in place?</td>
<td>110 of 119</td>
<td>92</td>
</tr>
<tr>
<td>Is your plan stand alone?</td>
<td>81 of 110</td>
<td>74</td>
</tr>
<tr>
<td>Are responsibilities of key individuals defined in the HEBMP?</td>
<td>94 of 110</td>
<td>85</td>
</tr>
<tr>
<td>Are these individuals aware of their roles and responsibilities?</td>
<td>94 of 110</td>
<td>85</td>
</tr>
<tr>
<td>Have staff been trained on the HEBMP?</td>
<td>63 of 110</td>
<td>57</td>
</tr>
<tr>
<td>Has a competency assessment been completed?</td>
<td>9 of 63</td>
<td>14</td>
</tr>
</tbody>
</table>
Of the 9 respondents who answered they did NOT have a HEBMP, 50% reported it was due to lack of administrative support and 20% that it was not a priority (15 respondents did not answer the question).

See figure 1 for the breakdown of the ways in which training was provided.

**Fig 1: Mode of HEBMP training used**

*Other included - In service presentations and group discussions, personal communication and quiz, document review

Staff that were trained included:
- Laboratory (46%)
- Physicians (16%)
- Nurses (7%)
- Other (4%)
  (Other included – HEBMC members, Managers, Chief of Staff and Communications Director).

**Platelet Inventory Management**

**Table 3 – Survey results on platelet inventory management**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you routinely stock platelets?*</td>
<td>41 of 110</td>
<td>37</td>
</tr>
<tr>
<td>Have you defined inventory levels for Green Phase?</td>
<td>27 of 41</td>
<td>66</td>
</tr>
<tr>
<td>Have you defined inventory levels for Amber Phase?</td>
<td>26 of 41</td>
<td>63</td>
</tr>
<tr>
<td>Have you defined inventory levels for Red Phase?**</td>
<td>25 of 41</td>
<td>61</td>
</tr>
<tr>
<td>Did you receive an order for platelets the day of the exercise?</td>
<td>36 of 110</td>
<td>33</td>
</tr>
<tr>
<td>Have you identified individuals to triage requests during a shortage?</td>
<td>32 of 36</td>
<td>89</td>
</tr>
<tr>
<td>Were these individuals involved in the exercise?</td>
<td>26 of 32</td>
<td>81</td>
</tr>
</tbody>
</table>
Did you report your inventory to CBS on the day of the exercise?  
17 of 36 47

Do you have a process defined in your HEBMP to document deferrals or cancellation of treatment?  
64 of 110 58

Did you document in this log during the exercise?  
40 of 64 63

Would you notify patients if treatment was deferred?***  
89 of 110 81

*The average number of platelets stocked was 6 (median 3). The minimum was 1 and maximum was 60. A total of 241 doses of platelets are stocked in the 41 Ontario hospitals responding that they routinely stock platelets.

**Hospitals that stock a minimal number of platelet doses likely have not defined inventory levels for the different phases of a blood shortage.

***(77%) would perform this notification verbally. 22% indicated they would notify using written format (1% did not answer).

Hospitals were asked what actions would have been taken to manage platelet inventory/orders (refer to Fig 2)

**Fig. 2: Actions taken to manage platelets in a shortage**

- Prospective screening of all platelet orders (20.90%)
- Strict adherence to hospital guidelines (12.69%)
- Mandatory consultation with Hematologist/TM physician (17.16%)
- Delay or cancellation of elective surgeries/procedures (16.42%)
- Delay or cancellation of all prophylactic platelet orders (18.66%)
- Prioritization according to need and probability of outcome (18.66%)
- Appeal process/re-evaluation period (11.94%)
- Extension of expiry date to 7 days (provided negative culture) (5.22%)
- Reduction in number of pools per treatment (9.70%)
- Splitting of platelet doses (11.94%)
- Use of alternatives such as tranexamic acid (8.96%)
Of the actions that were listed in Fig 2 to be taken during a blood shortage to manage platelet inventories, 72% (26) of the hospitals that stock platelets responded that they have outlined these actions in their HEBMP.

Hospitals were asked to report how many platelet orders would have been cancelled or deferred due to the shortage. Hospitals reported that 64 orders for platelets would have been deferred or cancelled (representing 77 doses). The average number of orders that would have been cancelled was 1.2 doses and the maximum was 15.

**Table 4 – Survey results on redistribution of platelets:**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you have a plan for redistribution of platelets in place?</td>
<td>64 of 110</td>
<td>58</td>
</tr>
<tr>
<td>Do you use the ORBCoN Platelet Web Application (PWA) to facilitate redistribution?</td>
<td>18 of 110</td>
<td>16</td>
</tr>
<tr>
<td>Would contact the regional hub site in their LHIN</td>
<td>23 of 110</td>
<td>21</td>
</tr>
<tr>
<td>Would contact nearest site that stocks platelets</td>
<td>45 of 110</td>
<td>41</td>
</tr>
<tr>
<td>Would the PWA be useful during a platelet shortage?</td>
<td>20 of 20</td>
<td>100</td>
</tr>
<tr>
<td>Would you be interested in the PWA (currently not using)</td>
<td>37 of 90</td>
<td>41</td>
</tr>
</tbody>
</table>

Some of the comments from those sites that currently use the PWA are as follows:
- Quick way to know which nearest hospital to contact to request platelets
- Less phone calls and interruptions to locate platelets
- Would help with redistribution and help prevent wastage

**Communication**

**Table 5 – Survey results on communication**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you have a Hospital Emergency Blood Management Committee (HEBMC)?</td>
<td>68 of 105</td>
<td>65</td>
</tr>
<tr>
<td>Did you convene your HEBMC during this exercise?*</td>
<td>29 of 68</td>
<td>43</td>
</tr>
<tr>
<td>Do you have a notification list as part of your HEBMP?</td>
<td>86 of 105</td>
<td>82</td>
</tr>
<tr>
<td>Did you initiate your list during this exercise?</td>
<td>78 of 86</td>
<td>91</td>
</tr>
<tr>
<td>Did you activate your list in all three phases of the exercise?</td>
<td>29 of 78</td>
<td>37</td>
</tr>
<tr>
<td>Do you include a process in your HEBMP for the recall of patients whose treatment has been deferred during a</td>
<td>45 of 105</td>
<td>43</td>
</tr>
</tbody>
</table>
血短缺？

*这些委员会是通过面对面会议（33%）、电子邮件（33%）和电话会议（33%）召集的。

人们在联系名单上的数量因设施大小而异。共有1,390名个人被通知。平均每家医院有18人，最低为2人，中位数为12人，最高为115人。

那些被通知的人平均成功联系72%（中位数90%，最高100%）。联系的主要方式是通过电子邮件，尽管电话、传呼机和头顶报话系统也被报告。参见图3。

**图3：通知的主接触方式**

*其他包括-传真、气动管系统、电子邮件到智能手机、事件管理系统（IMS）、手写备忘录和当面。

当问及成功的障碍时，28%的障碍是由于缺席，31%由于临床实践活动，11%联系名单未更新和10%的联系方式未按预期工作。各种类型的人员被通知（见图4）。
Fig 4: Who was notified of the blood shortage during this exercise?

- Laboratory Management (62%)
- Laboratory medical staff (56%)
- Senior Administration (57%)
- Staff Physicians (50%)
- Staff Nurses (38%)
- Risk Management personnel (31%)
- Patient Relations (14%)
- Public Relations (17%)
- Other* (12%)

*Other included: Transfusion Committee, Chief of Staff, Managers, Finance, Ethics and Occupational Health

Orientation sessions

86% (82 of 95) of respondents had attended the orientation sessions held by the MOHLTC and 80% (66 of 82) of those who attended found them helpful. Of those that did not attend, it was due to either low blood use at their hospital or they were not available to attend. An email was issued to hospitals (copied to CBS and BPCO Manager) following the two sessions providing clarification on points raised.

There were 79 comments received about the orientation sessions. Most fell into four main areas:
Clarified the expectations for the exercise - the PowerPoint slides provided were useful to share the information with those who could not attend. The question and answer document emailed following the two sessions helped clarify issues raised. Felt better prepared – it was helpful to know the week that the exercise was being held. There was one comment that they would prefer to know the actual day and a few others who did not think there should be any advance warning at all.

Notification of hospital CEOs – hospitals recommended that their CEOs be notified by MOHLTC about the upcoming provincial blood shortage exercise to help raise awareness and achieve better ‘buy-in’ from medical and administrative personnel.

When should hospitals initiate their response to the exercise - there was some confusion over the start point of the exercise – whether or not hospitals should initiate their notification in the evening when the first fax was received from CBS or wait until the following morning.

A few respondents commented that they were looking for guidance on their response i.e. how to triage orders and where to find examples of documents within the Ontario Plan and Toolkit.

Exercise

Hospitals were asked if they had held their own blood shortage exercise. 96% (92 of 96) responded that they had not. 80% (77 of 96) of hospitals said they would hold a review of this exercise.

Table 6 – Who will be included in the review of this exercise?

<table>
<thead>
<tr>
<th>Staff to participate in review of exercise</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood Transfusion Staff</td>
<td>43</td>
</tr>
<tr>
<td>Hospital Transfusion Committee members</td>
<td>44</td>
</tr>
<tr>
<td>HEBMC members</td>
<td>28</td>
</tr>
<tr>
<td>Other*</td>
<td>13</td>
</tr>
</tbody>
</table>

*Other included – Medical Advisory Committee, Vice President professional practice, security, risk management, Chief of Surgery, Hospital administration, Regional Transfusion Committee

91% (87 of 96) of hospitals responded that they found the exercise helpful in identifying gaps in their own plan.

Eighty comments were received from hospitals on the key learning points they identified while participating in the exercise. These points can be categorized as follows:
Internal Hospital Contact lists – many hospitals (31 of 80) reported that their contact list needed more frequent updating, that key people were not currently on their contact list, and that they wanted a way to confirm receipt of notification. One respondent noted that they identified some challenges as they are a multi-site organization and there were inconsistencies in the notification process. 

Triage – there were a number of comments (18) stating that it would be helpful to have guidelines or recommendations on the triage of blood components in a shortage in order to encourage sites to use a standardized process for deferral decisions (i.e. which surgeries should be deferred). Recommendations from the provincial committee need to be communicated to medical staff at the hospitals in a timely manner. There were also some comments that sites still need to get documentation logs in place to record decisions relating to triage. Two respondents requested more clarity around the role CBS would play in allocating components.

CBS notification – 14 of 80 commented that they would like a phone call in addition to the fax and email; several noted problems if the fax notification was received during off hours if the lab is not staffed 24/7.

Training – several sites (13) commented that they need to do more training of staff, to raise awareness of and to define roles and responsibilities particularly for those outside of the laboratory.

Buy-in from Senior Medical/Administration – 7 comments received related to the fact that as a result of this exercise, they would be receiving more buy-in from hospital personnel outside the laboratory to better incorporate the plan in the hospital emergency plan and generally raise awareness about the process.

Other –
- need more clarity around inventory reporting to CBS
- need to better define process for recall of deferred patients once recovery reached
- How would CBS be involved in the redistribution or allocation of scarce product?
- HEBMP needs to be expanded to cover components/products other than just red cells
- internal notification memos need to be reworded

Refer to Appendix C for additional feedback collected.

Survey final comments

85% (82 of 96) of respondents said they found the survey a useful way to gather information about their experience in the blood shortage exercise.

Finally, participants were asked for their general comments on the exercise - 52 responses were received and the comments were grouped in the following categories:
CBS notification and teleconferences
- Hospitals should be contacted by phone
- Fax notification did not work well, email worked but is not reliable if that person is not available
- We realized we need to identify an alternate person if primary contact cannot attend teleconferences
- There was confusion over the confirmation of receipt (is it required or not?) and if inventory needs to be reported to CBS and if so, when?
- Would be helpful to do roll call

Small hospitals
- We were disappointed because we felt we did not have the opportunity to really participate
- Very difficult to respond as only one staff person in lab

Internal notification
- We found it hard to know if notification had been received
- Phone call is still best method
- Hospital transfusion committee acts as the HEBMC

Post Mortem Lessons Learned

CBS Internal Debrief

The debrief meeting held internally at CBS resulted in identification of three key areas for improvement:
1. Look for better way to notify hospitals of a blood shortage (potentially using automated method)
2. Develop an internal checklist or toolkit to provide support for staff and to ensure processes are followed consistently
3. Look for strategies to collect inventory data from hospitals (potentially visible inventory application)

MOHLTC feedback:

The Ontario Blood Shortage Exercise held on February 2014, was an opportunity to test how MEOC would operate in a blood shortage. Communication flow (e.g., appropriate contacts, mode and timing of communication) with MOHLTC, CBS, hospitals and OEBMC was confirmed.

The MOHLTC internal debrief identified the following two areas for improvements:
1. The need to clarify roles and responsibilities, both within the ministry and with the ministry and its stakeholders for blood shortages. The MOHLTC will work with its internal stakeholders, BPCO, EMB and MEOC to clarify respective roles and responsibilities in a blood shortage and identify the overall lead and/or the lead for each function, including clarifying MEOC roles in OEBMC calls and facilitating better understanding of MEOC triggers and functions in blood shortages.

2. The need for clear and detailed communications both within the ministry and with the ministry to its stakeholders (CBS, Local Health Integration Networks (LHINs), hospitals and the public) for blood shortages. The MOHLTC will work with its internal stakeholders, BPCO, EMB, MEOC and the ministry’s Communications and Marketing Branch to develop a communication strategy to address these gaps, including development of communication templates for use in emergency blood shortages.

**OEBMC feedback:**

The following was identified through OEBMC as key points from the exercise:

- Communication via email functioned well with a high per cent of OEBMC members attending conference calls (50% of members attended first call and 75% of members attended the second call)
- OEBMC members offered some clinical recommendations but it was unclear if and how these should be communicated to hospitals
- There is concern that hospital response may be too variable with not all sites following the same restrictions or deferral criteria. How can we ensure a more consistent approach is taken during a real blood shortage?
- The trigger for blood shortages needs to be better defined i.e. will it always be through CBS? Can a hospital or a group of hospitals ever trigger concerns around inventory availability that would necessitate convening OEBMC and CBS to determine the need for notifying hospitals of a blood shortage?
- The move to recovery phase does not imply an immediate return to ‘normal operations’ but should be interpreted to be a gradual return towards green phase inventory levels and operations

**Discussion**

In order to determine how Ontario is doing with respect to preparedness for managing a blood shortage, we went back to the recommendations of the 2010 exercise to compare with hospital responses in 2014.
2010 recommendations for Hospitals – compare to results from 2014:

1. Hospital plans should be finalized and include forms for cancellation and deferral of treatment; procedure for reporting inventory to CBS; staff checklist to ensure all steps in plan are followed

83% of the hospitals responding in 2014 stated that they had an emergency blood management plan in place and that key responsible individuals were aware of their roles and responsibilities. Those that responded they still did not have a plan in place cited the fact that they have not been able to get the attention of Senior Medical and Administrative staff to incorporate the emergency blood management plan at a corporate level. Only 58% reported that they had a process for documenting decisions made around deferral/cancellation of treatment resulting from a supply shortage despite the fact that examples have been provided in a toolkit available to all hospitals in Ontario.

2. Staff should be trained on the plan.

A training template and material was provided to hospitals to aid in training their staff about emergency blood management. Just over half of hospitals reported that they have provided training for their staff on the HEBMP. This is a big improvement from the previous exercise where it was evident that little or no training had taken place.

3. Hospitals should have processes and agreements in place to redistribute products as required.

Many hospitals participate in the provincial RBC and plasma protein products redistribution process therefore do have processes in place to perform this, however, just over half of responding hospitals indicated that they have incorporated redistribution of platelets into their HEBMP. The need for platelets would be infrequent or rare for many hospitals in the province. Not all sites feel they need to have a plan in place for redistribution of platelets. All sites should have a plan to redistribute RBC as the need for transfer of this blood component during a shortage is more likely.

4. Hospitals should have a process in place for notifying patients if treatment is to be deferred or cancelled

Over 80% of hospitals responded that they have a process for notifying patients. This is an improvement from the previous blood shortage exercise where only 45% of participants reported they had a process for notification of patients if their treatment is impacted by a blood shortage.

5. A committee should be identified to support maintenance of the blood shortage plan and support decision making during a shortage.

At the time of the 2010 exercise, there were only a few sites that had created their Hospital Emergency Blood Management Committee (or equivalent). For this exercise, over 60% of respondents indicated that they had one in place and 42% of these were convened as a result of this exercise.

6. A contact list should be developed and maintained to facilitate notification process
At the time of the 2010 exercise, very few hospitals had their contact lists created. In 2014, over 80% of hospitals responded that they do have a list in place. Interestingly, one of the most common gaps identified through the exercise was that this list was either missing contacts or was out of date. While difficult to keep up to date, the list should be reviewed at regular intervals and updated. Some sites reported using their central locating office to facilitate the notification of staff. This office maintains up to date contact information for clinical staff.

7. Hospitals should be familiar with CBS inventory reporting.

This recommendation was not directly measured or tested. A greater effort was made by CBS during this exercise to provide actual numbers and explain what they meant so that hospitals could have a clear understanding what numbers would trigger a real blood shortage.

2010 recommendations for CBS – compare to results from 2014:

1. Notification process should include a phone call in addition to fax as well as an email to Transfusion Medicine Medical Directors

An email to Transfusion Service Medical Directors was included in the 2014 exercise notification. However, it was decided not to phone each of the hospitals to notify them of the blood shortage exercise in 2014 due to logistical challenges for CBS. It became apparent during the teleconferences held throughout the exercise that hospitals feel a phone call is needed. CBS needs to consider how this can be accomplished in a real blood shortage and come up with a solution to address this.

2. Ensure notification document is clearly marked ‘URGENT’

The fax notifications used for the 2014 exercise were titled in large, bold font and the word ‘simulation’ was underlined. Ideally, CBS should come up with a template for such notifications and raise awareness with hospitals so that there would be greater recognition of such fax notifications and hospitals would know how to respond.

3. Use of multiple fax machines could avoid conflict between incoming and outgoing fax messages and help speed up process

Additional fax machines were installed in CBS sites to provide contingency in case of equipment failure and prevent interference of incoming and outgoing messages during situations where urgent communication is needed. For the 2014 exercise, hospitals were not required/directed to provide a responding fax confirmation of receipt. CBS needs to clarify the process and expectations for hospitals. If they need to provide receipt confirmation in a real shortage situation, the communication should state this.

4. Improve hospital understanding of CBS processes during a blood shortage including: what information will CBS require from hospitals; CBS role in redistribution; CBS role in allocation of product in hospital inventory
Several hospitals commented in the post exercise survey that they need a better understanding of CBS processes around their involvement in redistribution and allocation/triage of components between hospitals either within a region or within the province. The role of the CBS Medical Director in these activities needs to be better defined.

5. **Avoid acronyms in communications to hospitals**

Far fewer acronyms were used during this blood shortage exercise. If acronyms were used, they were expanded first to clarify. The use of the acronym RHA (for regional health authority) was taken from the blood shortage plan and may have caused a bit of confusion because this is not a term used in Ontario. CBS should develop standard communication templates and use them in future blood shortage exercises.

6. **If possible provide notification of shortage early in day before surgeries begin**

During this 2014 blood shortage exercise, the notification actually went out at approximately 1700. The purpose of this was to first of all make hospital personnel aware that a shortage notification could come at any time and secondly to attempt to provide the information to allow for assessment of operating schedule lists in a timely way and allow for time to defer or cancel (in this case simulated) any surgeries that would be associated with a high probability of platelet use. By providing the notification after normal working day hours, it caused some challenges for sites that are not staffed 24/7. The fact that these sites are small and unlikely to use platelets raises the question of how urgently they would need to be made aware of a blood shortage situation.

7. **Schedule CBS teleconferences to avoid conflicts for attendees with hospitals in more than one region**

The number of CBS teleconferences held was reduced in 2014 compared to 2010 in part due to the fact that the consolidated CBS Brampton facility now provides services for over 100 hospitals in the province. CBS restructuring/regionalization also has resulted in consolidating services for hospitals served by Ottawa and Winnipeg. Therefore only two sets of calls were required. This still resulted in conflicts for some attendees as a result of hospital coverage within the province. The information raised during the CBS teleconferences was very similar therefore it should not be problematic if someone was unable to attend both.

**2010 recommendations for MOHLTC – compare to results from 2014:**

1. **Avoid use of acronyms in communications to hospitals such as HEBMC**

In the 2014 exercise, communications from MOHLTC were consistent in using the expanded version of the acronym in its first use.

2. **Develop provincial guidance documents to improve standardization in screening criteria for deferral of transfusion and help clarify physician roles**

This is an outstanding item and was requested again as an outcome of this 2014
exercise. This guidance document should include some standard approaches to assessing orders during a blood shortage (criteria for RBC, platelets, frozen products, IVIG, types of surgeries associated with blood loss). This guidance document can be based on existing documents and provide an endorsement for Ontario hospitals to help standardize actions to be taken across the province and ensure equity of care for patients. A suggestion was made to develop a 'one-pager' for hospital physicians to aid in clarifying their roles.

3. Include notification of critical, ORNGE, ambulance services

With the inclusion of the Emergency Management Branch (EMB) of MOHLTC on the CPWG, this provides access to the MEOC, facilitating communications to other emergency providers and the public as needed.

4. Provide guidance on notification responsibility for sites that receive their blood from another hospital

This information was provided to hospitals as part of the communications during annual site visits between ORBCoN, CBS and hospital transfusion service representatives in 2011-12 to ensure hospitals were aware that this was a responsibility.

2010 recommendations for Ontario Plan – compare to results from 2014:

1. Templates for documenting decisions for deferral

Templates for documentation of decisions regarding deferral, cancellation or modification of treatment during a blood shortage were provided in the 2012 Ontario Plan toolkit. This toolkit is available online at www.transfusionontario.org, and was distributed in Ontario to all hospitals that receive blood from CBS and was communicated during annual site visits in 2013-14. Despite this, only 65 hospitals reported having this process in place. It is a recommendation in the Ontario Plan that hospitals have this process in place and that the process includes documentation of deferral of any blood components affected by a shortage.

2. Template for patient notification

This was included in the 2012 version of the Ontario Plan Toolkit. Ninety-one (91) hospitals reported that they would inform patients verbally of any changes in their treatment resulting from a blood shortage. The need for documentation of this notification should be discussed by the CPWG to determine its importance.

3. Checklist for actions to be taken at the hospital to facilitate training

A training package was provided in the 2012 Ontario Toolkit. Sixty-five (65) hospitals
reported that they have trained their staff on their plan. This is a significant improvement from the 2010 exercise where it was evident that while the plan may have been in place, many did not have a clear understanding of what, if any role they were supposed to play once the notification was received. Training should continue to be implemented at sites that have not yet done so.

4. **Template of a contact list for hospital internal notification/communication**

   This template was provided in the 2012 Ontario Plan Toolkit. Most hospitals reported that they have such a contact list developed however they also commented that it needed to be updated more frequently. Maintenance of contact lists are challenging due to staff turnover and change. Assignment of reviewing and updating this contact list could be added to a schedule of maintenance such as regular maintenance of equipment or review of other documents such as procedures and policy manuals.

While the majority of hospitals have implemented a HEBMP, there are still some holdouts. It was encouraging that awareness of the HEBMP among clinical staff is high (73%) and that they are aware of their responsibilities in a blood shortage as clinicians are the critical piece in making decisions around deferral of treatments that will result in a decreased demand for blood in times of shortage. It was noted by several sites that it is key to determine who has the authority to impact changes in the operating room schedule should it be necessary to defer or cancel certain surgeries associated with blood loss.

The exercise provided a clearer understanding of platelet inventory numbers held across the province. According to the exercise results, about 41 hospitals stock platelets routinely (holding around 240-250 doses). Use of the new CBS web based inventory reporting module could facilitate better understanding of the availability and location of hospital platelet inventory during a shortage. In this platelet shortage exercise, approximately 75 doses would have been deferred representing roughly 60% of the daily platelet demand for the province. Most sites only needed to defer 1 dose. This information could be helpful for CBS when attempting to estimate how long the existing supply of platelets may last. The suggestion was made that CBS might be the most logical ‘broker’ of inventory during shortage situations to ensure no platelets expire while decisions are being made around prioritization of need.

Use of the ORBCoN PWA was also supported. This tool could also facilitate transfers of platelets between sites in times of shortage and help ensure available stock does not expire.

Most of the sites that stock platelets appear to have a process for triage in place. This could be due to the fact that the management of platelets (having such a short shelf life) frequently requires the need for triaging even if only for short periods of time. It would still be helpful to provide some guidance on criteria to prioritize the use of the available
platelets to help ensure a consistent approach is taken across the province. However, it was also apparent that hospitals were concerned over the equity of deferral criteria e.g. one hospital would have canceled all elective cardiac bypass surgeries while another would not have. Deferral criteria should be developed at the National level through the National Blood Shortage Working Group (a working group of NAC) during the Green phase in order to provide more guidance to hospitals during a blood shortage and help ensure a more consistent approach. These criteria may need to be scaled depending on the severity of the shortage and would need to be applicable to a variety of situations.

Documentation of decisions on deferral of treatment is strongly recommended in the National Plan as well as the Ontario Plan. There should be a strong recommendation from OEBMC for hospitals to include a process for this in their plans for managing a blood shortage.

The planning and execution of the exercise itself went fairly smoothly. There was some confusion among CPWG members around the trigger for a provincial blood shortage as opposed to a national one and if a provincial shortage can, in fact, exist. In the end, it was agreed that a provincial shortage was possible but would likely occur over a relatively short period (48-72 hours) resulting from restrictions in transportation preventing movement of product from elsewhere in the country. It was also agreed, that due to its size, an Ontario shortage could progress rapidly to a national shortage.

Provincial inventory levels held at CBS sites Brampton and Ottawa that can be considered ‘triggers’ for concern should be identified for all components and products. Whenever these levels are reached, the BPCO Manager should be alerted. If warranted, OEBMC will be convened and determine if there is a need for any further action including notification of hospitals. This will help ensure a timely response and minimize patient impact. Clarification is also needed to determine if a process for hospitals is needed to raise concerns around inventory to the Ministry (BPCO). However, definition of trigger inventory levels with automatic notification to the BPCO may reduce the concerns hospitals have around inventory availability and communication around potential shortages.

Very few hospitals reported that they hold their own internal blood shortage exercise therefore are dependent on these provincially run exercises to ensure there is regular testing and ongoing improvement of plans for the management of blood shortages.

The orientation sessions that were held were successful, providing hospitals with clarification on the objectives of the exercise and an opportunity to ask questions and get a better understanding of what role they would play. Some confusion arose around the inclusion of CEO notification about the exercise as well as the timing of response and involvement of clinical staff. As a result, there was a communication sent out to CEOs
notifying them of the upcoming exercise and an email reiterating how hospitals responded internally to the exercise was up to them. This message emphasized that no patients should be impacted by the exercise.

Several small hospitals voiced concerns around the fact that the notification occurred ‘after hours’. These small hospitals do not have laboratory staff on duty after 1600 but may only have someone on call. The concern that they would not receive notification until the following morning needs to be put into context. The amount of inventory these sites hold is minimal and the number of units and the frequency they transfuse is low, therefore, perhaps it is not as critical that they receive the notification as soon as it is issued. There should be internal discussion at these sites to determine if it is crucial that they receive notification immediately or if it can wait until the following morning. They might consider it be treated similarly to their process for receiving information about a blood product recall fax notification. If this information can wait until the following day for follow-up, then perhaps notification of the blood shortage can also. If it is deemed a priority, then a 24 hour contact fax/email/phone needs to be provided to CBS.

CBS did not have templates pre-built for the notification of hospitals and these needed to be developed for the exercise. It would be ideal if these were ready to be used should they be required (needing only details associated with the specific situation to be added in). This would provide consistent messaging across the country. During their debriefing meeting, this was recognized and one recommendation is that they develop an internal toolkit to aid in their response to any future blood shortages (simulated or real). Development of technical solutions to improve the process of notification of hospitals will also be explored to address the issues identified through this exercise.

**Recommendations from 2014 Exercise:**

**For hospitals:**

1. Complete HEBMP – Ensure there is a process to document decisions around deferral or modification of treatment regardless of the nature of the blood shortage
2. Train your staff on the HEBMP
3. Update your internal hospital notification list at regular intervals (at least annually)
4. Focus on the processes required once recovery notice is received e.g. continue reduced usage (Amber level) for 12-24 hours
5. Small hospitals need to determine if they need to receive immediate notification of a blood shortage and if they do, to provide the pertinent contact information to CBS
6. Identify individuals who will be tasked with triaging orders in a shortage situation and provide them with the tools they will need to make their
decisions i.e. guidelines and criteria to use to determine if transfusion should go ahead or be deferred, list of surgical procedures identified that should be deferred (may be dependent on what blood component/product is affected by the shortage)

7. Report inventory levels into the CBS web-based system routinely and as requested by CBS

For CBS:

1. Implement a process to ensure timely notification of the blood shortage to each hospital that receives blood components and products from CBS
2. Develop standardized templates for shortage notifications for use across Canada and mark the notifications as “URGENT”
3. Provide guidance during the recovery phase (e.g. to continue restrictions of product use for XX hours) in order to provide the same information to all hospitals and notify when back into stable GREEN phase and that operations can resume as normal
4. Develop standard process internally at the production/distribution site level to ensure all CBS sites will respond to a blood shortage in a consistent manner (toolkit of templates to use) and train staff on the process

For MOHLTC:

1. Continue to support CPWG and maintain the Ontario Plan
2. Incorporate recommendations for revisions/additions into the Ontario Plan including clarification around the triage role of CBS Medical Directors and actions for hospitals to take during the recovery phase.
3. In collaboration with CBS, define inventory ‘trigger’ points to ensure the BPCO Manager is notified when the inventory level of any blood component or product reaches a critical level for the province
4. Facilitate the development or endorsement of guidelines/recommendations on criteria to use during triage of blood orders in a shortage situation
5. Further clarify how clinical recommendations from OEBMC will be communicated to hospitals and particularly Transfusion Medicine Medical Directors in a timely way
6. Support the expansion of the PWA across the province
7. Clarify internal communication processes between BPCO and MEOC around MEOC activation
8. Plan to hold another provincial blood shortage exercise in 2-3 years and include:
   i. Test of the CBS notification process
   ii. Test of triage processes (both at hospitals and CBS)
   iii. Test hospital activities in the recovery phase
   iv. Test internal MOHLTC communication
Conclusion

In general, it seems that the exercise was successful in achieving its objectives. Blood shortage exercises are a bit like taking a dose of medicine. While no one really wants to participate, we all know it is good for us and results in improvement. The majority of hospitals reported that they found the exercise useful in that it resulted in a review of their hospital emergency blood management plan and raised the awareness of clinical and administrative staff of the importance of having a plan in place and the need for it to be integrated into the overall hospital emergency response plan.

Many of the recommendations from the 2010 exercise have been implemented, however, there is still work to be done to clarify actions to be taken during triage of orders and what should be done in the recovery phase to ensure the limited blood supply can stabilize to allow operations to eventually return to normal. CBS needs to further improve the notification process to ensure hospitals receive the information of an inventory shortage in a timely way and also to clarify their role in regional/provincial triage of blood.

Redistribution networks are in place and most hospitals have a process in place to transfer product if required (although the process for transfer of platelets may need to be incorporated at some sites). The use of the ORBCoN PWA was useful and consideration should be given to expansion of this tool to make it available province wide for those sites that transfuse platelets.

The MOHLTC MEOC was tested out and this greatly enhances the communication capacity within the province to provide notification and recommendations to hospital CEOs using the LHINs communication infrastructure and to the public should it be deemed necessary. Discussion is needed at the provincial level to identify and agree at what inventory levels CBS will notify the Ontario BPCO Manager and when OEBMC would be convened to assess the situation and determine the need for further action.

The recommendations within this report should be implemented and another provincial exercise should be planned to ensure ongoing improvement of Ontario’s preparedness for a potential blood supply shortage.

Acknowledgements
Ontario hospitals that participated in this exercise
OEBMC members
CBS
ORBCoN
# Appendix A: OEBMC Membership

<table>
<thead>
<tr>
<th>Representation</th>
<th>Name</th>
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<tr>
<td>Blood Programs Coordinating Office (BPCO), MOHLTC - <strong>OEBMC Chair</strong></td>
<td>Mr. Dai Kim</td>
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<tr>
<td>Blood Programs Coordinating Office (BPCO), MOHLTC</td>
<td>Ms. Ramona Muneswar</td>
</tr>
<tr>
<td>Blood Programs Coordinating Office (BPCO), MOHLTC</td>
<td>Ms. Sophie Yang</td>
</tr>
<tr>
<td>Canadian Blood Services (CBS), Regional Medical Director</td>
<td>Dr. Bob Skeate</td>
</tr>
<tr>
<td>Canadian Blood Services (CBS), Regional Medical Director</td>
<td>Dr. Peter Lesley</td>
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<tr>
<td>CBS, Regional Director of Product and Hospital Services</td>
<td>Mr. Rob Romans</td>
</tr>
<tr>
<td><strong>CBS, Regional Hospital Liaison Specialist (HLS)</strong></td>
<td>Mr. Ahmed Coovadia</td>
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<tr>
<td>CBS, Regional Hospital Liaison Specialist</td>
<td>Mr. Jon fawcett</td>
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<tr>
<td>CBS, Regional Hospital Liaison Specialist</td>
<td>Ms. Denyse Tremblay</td>
</tr>
<tr>
<td>CBS, Regional Hospital Liaison Specialist</td>
<td>Ms. Valerie Paulson</td>
</tr>
<tr>
<td>Emergency Management Branch (EMB), MOHLTC</td>
<td>Mr. Tom Appleyard</td>
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<tr>
<td>Emergency Management Branch (EMB), MOHLTC</td>
<td>Ms. Caitriona O’Sullivan</td>
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<tr>
<td>Hospital Clinical Consultant</td>
<td>Dr. Jeannie Callum</td>
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<tr>
<td>Hospital Transfusion Service Manager</td>
<td>Ms Terry Paradis</td>
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<td>Hospital Senior Administrator</td>
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<tr>
<td>Risk Management</td>
<td>Ms. Sherry Szucsko-Bedard</td>
</tr>
<tr>
<td>National Advisory Committee on Blood &amp; Blood Products (NAC)</td>
<td>Dr. Katerina Pavenski</td>
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<tr>
<td>Ontario Blood Advisory Committee (OBAC)</td>
<td>Dr. Katerina Pavenski</td>
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<tr>
<td>**Ontario Regional Blood Coordinating Network (ORBCoN) - <strong>CPWG Vice Chair</strong></td>
<td><strong>Ms. Wendy Owens</strong></td>
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<td>Ontario Regional Blood Coordinating Network (ORBCoN)</td>
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<tr>
<td>Ontario Nurse Transfusion Coordinator (ONTraC)</td>
<td>Ms. Kathy Luke</td>
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<tr>
<td>Ontario Hospital Association (OHA)</td>
<td>TBD</td>
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<tr>
<td>Nunavut Blood Program</td>
<td>Ms. Sonia Marchand</td>
</tr>
<tr>
<td>Patient Group</td>
<td>Ad hoc</td>
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<tr>
<td>Transfusion Safety Officer - <strong>CPWG Chair</strong></td>
<td>Ms. Kathleen McShane</td>
</tr>
<tr>
<td>Intensivist, Critical Care</td>
<td>Dr. Laura Hawryluck</td>
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<tr>
<td>Surgeon, Trauma and Critical Care</td>
<td>Dr. Bernard Lawless</td>
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<tr>
<td>Anesthesiologist, Perioperative Medicine</td>
<td>Dr. Fiona Ralley</td>
</tr>
<tr>
<td>Small Hospital Laboratory</td>
<td>Ms. Linda Smit</td>
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<td>Emergency Physician</td>
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**Members highlighted in light blue are CPWG**
### Ontario Provincial Blood Shortage Exercise - Agenda

**Date:** Feb 3\(^{rd}\) and 4\(^{th}\) 2014  
**Time:** Approx 24 hours

#### Participants
- Ontario hospitals with a licensed transfusion service laboratory
- CBS
- MOHLTC (BPCO, EMB, and other program areas as necessary)
- OEBMC
- NEBMC (only the Chair, which is the Chair of NAC)
- ORBCoN

#### Scenario
- Massive severe winter storm across Central and Eastern Canada, freezing rain, snow, high winds
- Road closures, power outages, airline travel suspended
- Ministry Emergency Operations Centre (MEOC) has been activated by EMB
- Started 24 hours ago and expected to continue without relief for at least 48 hours
- Donor clinics closed, donor testing samples unable to be sent, staff unable to get into work at CBS clinics and production sites and hospitals, CBS centres outside of storm area unable to ship product due to transport restrictions (primary triage option unavailable)
- Storm abates after 48 hours, CBS collections and production can begin to recover. Inventory can begin to flow from elsewhere in Canada to allow for recovery of situation.

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<th>Time</th>
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| Feb 3 @ 1400 | 1. **First alert**: CBS HO designated Government Relations personnel will notify BPCO Manager of critical inventory situation due to storm disruption.  
- BPCO Manager will send out message to OEBMC to convene at 1500 via teleconference for discussion of simulated potential blood shortage situation (severe platelet shortage)  
- Note: Winnipeg CBS needs to be included in communications (CBS HLS for Winnipeg is included in OEBMC invitation and will forward information to Production and Medical) | CBS Government Relations, BPCO Manager |
|              | 2. **Decision**: Decision will be made to call an Amber platelet shortage (simulation) for Ontario hospitals. NEBMC Chair will be informed by BPCO Manager  
- CBS sites to notify LERTs and NERT of decision | BPCO Manager, CBS LERT Chair Brampton, Ottawa, Winnipeg |
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| Feb 3 @ 1700 | **3. Notification #1:** CBS will initiate notification of all Ontario hospitals of a simulation platelet shortage – Amber Phase  
**Note:** communication to include invitation to CBS teleconference next morning at 0800 and will be sent via fax to hospital transfusion labs and via email to Transfusion service primary, secondary and medical contacts. | CBS Distribution  
Brampton,  
Ottawa,  
Winnipeg |
| Feb 4 @ 0800 | **4. First teleconference:**  
CBS HLS will host conference call for all hospitals in each region, also include ORBCoN regional managers.  
**Note:** CBS Winnipeg HLS will host a call at 0800 CST (0900 EST). Ottawa CBS HLS will host a call at 0800 EST.  
Calls will go over the simulation scenario with participants as well as expectations and answer any questions.  
A review of current hospital inventory levels may also take place along with discussion of current platelet needs/users.  
CBS HLS will provide participants with current (simulated) Amber level of platelet inventory (between 25-50% of average daily use for each CBS site).  
ORBCoN regional managers to provide update to BPCO project coordinator via email following each call. | CBS HLS |
| Feb 4 @ 1100 | **5. Escalation to Red Phase Notification #2:**  
CBS Government Relations personnel to inform BPCO and EMB of inventory status and what actions (simulated) are being taken to correct the shortage.  
- BPCO Manager to reconvene OEBMC and discuss progression to a provincial Red phase shortage  
- BPCO Manager to notify the NEBMC Chair of a progression to provincial Red phase shortage  
- CBS reconvene LERT and notify NERT of move to Red Phase shortage in Ontario  
- CBS notify all Ontario hospital transfusion services of situation (Notification #2 include call in information instructions and time of next call). This notification will be sent via fax and email as per earlier notification  
- MEOC – notify other stakeholders (LHINs, OHA, Chief Medical Officer of Health) as required for Red Phase shortage (only to be simulated)  
- BPCO staff to be deployed to MEOC when requested by EMB personnel | BPCO Manager,  
CBS Distribution  
Brampton,  
Ottawa,  
Winnipeg,  
CBS Government Relations |
| Feb 4 @ 1300 | **6. Second teleconference:**  
- During this teleconference, participants will report activity and have an opportunity to ask questions  
- Hospitals should report inventory situation, extent of treatment deferral/cancellations, and any critical or urgent need for product  
- Discuss need for redistribution (CBS should have | CBS HLS  
Brampton,  
Ottawa,  
Winnipeg sites |
information on hospital inventory reported to them)
- CBS to provide an update on simulation situation (provide simulated inventory level of platelets - < 25% average daily issues) and answer questions
- This call also provides an opportunity to pass on any directions/guidance to hospitals provided from OEBMC about actions hospitals should take to reduce platelet use/demand
- ORBCoN to provide update from MOHLTC if applicable and answer questions
- ORBCoN Regional Managers to provide update to BPCO (via email to SY) following this call

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| Feb 4 @ 1500 | **7. Recovery Notification #3:**
- Hospitals will be informed that the simulation exercise is now ended and a final conference call will be held the following day to debrief participants
- Hospitals will follow their internal HEBMP to communicate recovery and end of exercise to hospital personnel
- CBS notification to hospitals will indicate that inventory is anticipated to recover in next 12 hours as storm is dissipating, roads and airline travel are opening
- BPCO Manager will inform OEBMC that the exercise is now ended
- MEOC – notify Sr. Hospital Admin and Medical that exercise is complete (simulated for this exercise) |

| Feb 5 @ 0900 | **8. Survey:**
- ORBCoN to send out follow up survey for hospitals to fill out online and return |

| Feb 5 @ 1000 | **9. Hospitals debrief:**
- CBS to host conference call for participants to answer questions
- Identify lessons learned and next steps |

| Feb 5 @ 1100 | **10. OEBMC debrief:**
- BPCO to issue email requesting feedback from OEBMC members - what went right and what went wrong.
- Feedback to be forwarded to ORBCoN to incorporate into final report |

| TBD         | **11. CBS debrief:**
- CBS to hold internal meeting to discuss exercise what went right and what went wrong
- Provide summary report to BPCO/ORBCoN for inclusion in final report |

| By end of March | **12. Analysis**
- ORBCoN to collate and analyse responses for presentation to CPWG and to prepare a final report |
Appendix C: Feedback from CBS Teleconferences/Survey

**Feedback received during exercise (on CBS hosted teleconferences):**

- Good participation from hospitals
- Hospitals looking for more information: duration of each phase, extension of shortage to other components, will delivery be affected due to poor conditions?
- What role would CBS play in triage of platelets within a region?
- Is splitting platelets and extension of expiry endorsed? Do hospitals have the capability?
- Hospitals were looking for clinical guidance on what other sites would do and on communication of clinical recommendations from OEBMC members (Hospital Transfusion Service physicians should receive communication directly on any recommendations provided through OEBMC)
- Many comments were received on the notification process (phone calls required, notification late in the day challenging, was confirmation receipt required, was inventory to be reported to CBS?)
- Redistribution may not always be an option depending on transport availability (remote sites may not have access in severe weather conditions)
- Hospitals served by CBS Brampton have been working on a ‘hub’ site model and form to facilitate transfer of products between designated hub sites and nearby smaller hospitals
- There was discussion around what response is required in the recovery phase and consistency of approach – should triage and deferrals continue for a period of time after recovery notification is received? How long?
- It is useful to know who in the hospital has the authority to defer/cancel surgeries if required
- A comment was made that CBS should consider indicating to hospitals in the notification if the Amber phase shortage is likely to progress to a Red phase (based on scenario and inventory availability)

**Additional comments received through survey:**

- Exercise was run very well by CBS, glad to be a part of it
- Being able to print or review survey questions ahead of time would have been helpful
- Exercise could have been shorter
- Provincial report will be useful
- Concerned that platelets might expire if trying to reduce demand – need to ensure this won’t happen
- Great province wide exercise – glad to be part of it – good team work!
- Learned about ORBCoN platelet web app
- As a result of this exercise our Senior management is taking more interest (one other site commented they are still struggling with this)
- Unsure about patient recall after recovery reached
- Next time shouldn’t warn ahead of time
- Survey was good and easy to complete (two comments received that some questions were too vague)
- Overall exercise was a great review for staff of our plan
- Very helpful way to identify gaps and review overall process
- Stressful but helpful, gave us more confidence in our plan
Appendix D: Communication Flowchart

CBS continuously monitors inventory and identifies ‘trigger level’

CBS notifies BPCO Manager of Inventory status

BPCO Manager convenes OEBMC (CBS provides update on inventory to OEBMC)

OEBMC makes decision to call shortage/recovery based on definitions in Ontario Plan

MEOC issues communication to Hospital CEOs and other pertinent emergency providers

BPCO Manager notifies NAC Chair and MEOC

CBS notifies hospitals

Hospitals follow HEBMP

CBS takes actions to improve supply shortage until resolved

CBS hosts teleconferences to provide updates to hospitals, ORBCoN, reinforce OEBMC clinical recommendations

ORBCoN provides summary of teleconference to BPCO

Makes clinical recommendations on actions to be taken

Report inventory to CBS

Reduce demand on affected component/product

Fan out notification internally