



## NPOD After DCD Attempt

### Reference Package

Version Date: 22 April 2021

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**Non-Perfused Organ Donation (Lung)  
Following Death by Circulatory Determination (DCD)**

**Inclusion Criteria**

**Potential non-perfused organ donation (NPOD) lung donors following DCD attempt include the following:**

- All DCD donors where lungs have been accepted for transplantation AND who are at a hospital located within a 2-hour driving distance from the University Health Network (UHN). Access to sites may vary depending on time of day (e.g. night driving) and traffic or weather conditions. These considerations will be made in real-time.

**Note:**

- **Paediatric** donors should be offered to UHN and will be discussed on a case-by-case basis. Considerations of age and size will be made.

# ORC References:

Click on each title below to be taken directly to the relevant page

[Participating Hospital List \(CPI-9-226 Exhibit 5 p9\)](#)

[Process Flow Diagram \(CSF-9-224\)](#)

[NPOD Following DCD Attempt – Transition Huddle Guidelines \(CPI-9-226 Exhibit 2 p6\)](#)

[NPOD Following DCD Attempt – Rapid Huddle Guidelines \(CPI-9-226 Exhibit 4 p8\)](#)

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## Non-Perfused Organ Donation (Lung) After DCD Attempt Scripting

Parametres	
<b>Who to Approach</b>	All potential DCD donors (at participating hospitals) where lungs have been accepted
<b>When to Approach</b>	During initial DCD approach

### Scripting

- **Explain the 'non-guaranteed' nature of DCD**
  - *(as discussed) we can only move forward with donation if your loved one's heart stops within 1-2 hours. Past that time, there is a concern that organs don't work well in the recipients.*
- **Introduce opportunity for NPOD after DCD attempt as addition opportunity to save lives**
  - *We are working with our lung transplant team to offer donation when loved ones die outside of the 1-2 hour window, and up to 24 hours later. The lung transplant program would be contacted at the time of your loved one's death to determine if they can recover lungs for transplant. This means donation might still be able to help save up to two people's lives if your loved one's heart stopped within 24 hours of the treatment being stopped.*
- **Implications and impact**
  - *In order for this to happen, we will need to bring your loved one back to the ICU for up to 24 hours to be monitored. When your loved one's heart stops, we would record the time of death, then place the tube back into your loved one's lungs through their mouth. We would give a very low flow of oxygen to the lungs, you likely wouldn't see any rise or fall of their chest. We would turn your loved one over to look like they are sleeping on their front/tummy. This is done to help keep the lungs healthy enough to transplant.*

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## Non-Perfused Organ Donation (Lung) Following DCD Attempt

### For ICU Nurse

#### What do I have to do?

- If the patient does not die within 3 hours of withdrawal of life-sustaining therapy, **leave the monitor on.**
- Monitor the patient remotely, where possible. The patient should still be connected to the monitor but the screen may be shut off in the room.
- Continue use of the NG tube.

#### When do I call the physician?

- When the patient's systolic blood pressure is below 50 mmHg, call the physician to note potential NPOD case.

#### When do I call the Provincial Resource Centre?

- Call the Provincial Resource Centre (1-877-363-8456, press 1) at Trillium Gift of Life Network (TGLN) when the **systolic blood pressure is  $\leq$  50**
  - Begin call by stating "I am calling from (*hospital name*) with a potential NPOD donor following DCD attempt. I am calling to let you know the patient's systolic blood pressure is now less than 50."

#### What do I do after the patient dies?

- Call the Provincial Resource Centre to note time of death.
- Call the physician for death determination (do not wait for asystole to make call).
- Arrange for the Registered Respiratory Therapist or physician to re-intubate the patient and initiate lung recruitment 30cm H<sub>2</sub>O for 30 seconds. To be completed 10 minutes after determination of death.
- Page the physician to notify case will move ahead, as per instructions from TGLN.
- Prone patient.
- Respiratory Therapist to place patient on pressure control 10cm H<sub>2</sub>O, rate 10; PEEP 10cm H<sub>2</sub>O, FiO<sub>2</sub> 0.21. Minimum time from death determination (time of death is end of 5-minute observation period) to ventilation is at least 10 minutes.
- Go to OR with patient when the OR and recovery staff are ready.
- Assist with unproning patient in OR.

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## Non-Perfused Organ Donation (Lung) Following DCD Attempt

### For Registered Respiratory Therapists

#### What is non-perfused organ donation (NPOD) lung donation following DCD attempt?

- NPOD is a form of lung donation following unexpected or uncontrolled death by circulatory determination (DCD). NPOD lung donors must be taken to the OR for recovery within three hours of death.
- If consent for DCD donation has been obtained, but the patient does not die within 3 hours of withdrawal of life-sustaining measures, the patient may be eligible for NPOD following DCD attempt provided:
  - **Death occurs within 24 hours of WLSM**
  - **Lungs have been accepted for donation**

#### What do I do after the patient dies?

- If the patient dies **within 24 hours** of WLSM and lungs have been accepted, the nurse will call the Provincial Resource Centre at Trillium Gift of Life Network (TGLN) to notify them of the potential NPOD donor and time of death.
- Once TGLN has informed the nurse that the case will proceed, re-intubate the patient and initiate lung recruitment 30cm H<sub>2</sub>O for 30 seconds. This should occur no sooner than 10 minutes following determination of death by two physicians.
- Assist nurse with turning patient to prone position.
- Place patient on pressure control 10cm H<sub>2</sub>O, rate 10; PEEP 10cm H<sub>2</sub>O, FiO<sub>2</sub> 0.21. Minimum time from death determination (time of death is end of 5-minute observation period) to ventilation is at least 10 minutes. As per hospital policy, this may be done by RT or Anaesthetist.
- Go to OR.
- Assist with unproning patient in OR.
- Attach patient to vent in OR and place patient on pressure control PEEP 10cm H<sub>2</sub>O, rate 10, FiO<sub>2</sub> 0.21, or follow lung transplantation team's instructions. As per hospital policy, this may be done by RT or Anaesthetist.
- Complete handover to anaesthesia as required.

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## **Non-Perfused Organ Donation (Lung) Following DCD Attempt**

### **For Physicians**

#### **What is non-perfused organ donation (NPOD) (lung) following DCD attempt?**

- NPOD is a form of lung donation following unexpected death by circulatory determination (DCD). NPOD lung donors must be taken to the OR for recovery within three hours of death.
- If consent for DCD donation has been obtained, but the patient does not die within 3 hours of withdrawal of life-sustaining measures, the patient may be eligible for NPOD following DCD attempt provided:
  - **Death occurs within 24 hours of WLSM**
  - **Lungs have been accepted for donation**

#### **What do I do?**

- After the patient has been identified as a potential NPOD donor following DCD attempt, the nurse providing care will call to notify you of imminent death. Come to the bedside when called.

#### **What do I do after the patient dies?**

- Pronounce time of death. A second physician must confirm this.
  - Please note that one of the two physicians must be a staff physician. The second physician may be a fellow or resident.
  - The staff physician may be from the ICU, ER, Anesthetist, or any non-transplant surgeon in the hospital.
- Confirm death on **Pronouncement of Death: Non-Perfused Organ Donation (NPOD) Form**.
- MRP to call anesthesia to alert them of planned OR recovery.
- Complete the Death Certificate, where appropriate.
- With the assistance of the TGLN Coordinator, fax the NPOD Form to the Provincial Resource Centre (fax: 416-214-7797).

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## **Non-Perfused Organ Donation (Lung) Following DCD Attempt**

### **Information for Organ and Tissue Donation Coordinators**

#### **What do I have to do as the patient is assessed as a potential DCD donor?**

- At the appropriate time during a case (e.g. lungs have been accepted), inform the family of the potential to recover their loved one's lungs by non-perfused organ donation (NPOD).
- Inform the hospital that lungs have been accepted and there may be potential for NPOD after DCD attempt.

#### **What do I have to do after WLSM?**

- If the patient does not die within 3 hours of WLSM, provide comforting care to the family. Repeat the information shared earlier about NPOD lung donation after DCD attempt.
- Ensure the unit is aware and holds the bed.
- Advise the hospital that staff from the Provincial Resource Centre (PRC) will call every four hours to check the status of the patient.
- Remind the hospital to call the PRC (1-877-363-8456, press 1) when the SBP is <50 mmHg.
- Confirm the transfer of care with the family and explain to them that one of your colleagues may come to the hospital.
- Provide contact information to the family and hospital.
- Prepare required paperwork for OR booking and leave with OR.
- Participate in NPOD After DCD Attempt Transition Huddle Huddle with Manager-On-Call and Clinical Services Coordinator.

#### **What do I do if I am the OTDC assigned to the NPOD portion of the case?**

- If you are the OTDC assigned to the NPOD portion of the case, you will be dispatched to go onsite when TGLN is made aware that the patient's systolic blood pressure is  $\leq 50$ .
- Prior to arriving onsite, call the OR to assess resources and book according to hospital classification system within a 3-hour time frame (book as per hospital protocol; paperwork to have been left in OR).
- Travel to the hospital.
- Check on the family.



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- Confirm patient is re-intubated, recruitment completed, and proned with ventilation. Assist hospital staff with proning patient as required.
- Confirm the OR is booked as requested and ensure all relevant forms are filled out.
- Call the PRC to initiate the NPOD After DCD Attempt Rapid Huddle.
- Participate in NPOD After DCD Attempt Rapid Huddle with Manager On Call and Clinical Services Coordinator.
- Coordinate scrub access for recovery team as per hospital protocol.
- Call TGLN Tissue Coordinator and provide information so Tissue Coordinator can reassess for multi-tissue and/or ocular recovery.
- Bring patient to the OR with the RN when the OR and recovery team are ready.
- Stay at the hospital during the recovery process and debrief with the OR and ICU teams and family.

**What do I do if the case is cancelled at any time?**

- If the case is cancelled due to lack of resources or suitability issues, you will still proceed to the hospital.
- Inform the hospital and family that the case has been closed.

## **Non-Perfused Organ Donation (Lung) Following DCD Attempt**

### **For Clinical Service Coordinators**

#### **What is non-perfused organ donation (NPOD) lung donation following DCD attempt?**

- NPOD is a form of lung donation following unexpected or uncontrolled death by circulatory determination (DCD). NPOD lung donors must be taken to the OR for recovery within three hours of death.
- If consent for DCD donation has been obtained, but the patient does not die within 3 hours of withdrawal of life-sustaining measures, the patient may be eligible for NPOD following DCD attempt provided:
  - **Death occurs within 24 hours of WLSM**
  - **Lungs have been accepted for donation**

#### **What does this mean for you?**

- You will be offering medically suitable lungs from DCD consented donors from participating hospitals.
- NPOD lung donation following DCD attempt will only be possible if the lungs have been accepted for transplantation. Please refer to the document “**NPOD After DCD Inclusion Criteria**” for details.
- NPOD lung donation following DCD attempt is being implemented at hospitals within a 2- hour driving distance (at night) from UHN. Please refer to the document “**NPOD After DCD Attempt Participating Hospitals**”.

#### **What do you have to do?**

- Following consent of a DCD donor at one of the participating hospitals, you will begin the process of screening the patient using existing criteria, as per usual practice.
- During the DCD Huddle, review the opportunity for NPOD after DCD.
- If the patient does not die within the 3-hour time limit for DCD lung recovery, they will be formally considered as a potential NPOD following DCD Attempt donor.
- You will coordinate a Transition Huddle with the Manager on Call and OTDC. Please refer to the document “**NPOD Following DCD Attempt – Transition Huddle Guidelines**”.

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- You will call the hospital to check the status of the patient every four hours and at shift change.
- When the patient's systolic blood pressure  $\leq 50$ , the hospital will call the PRC. At this time, you will dispatch an OTDC to go on-site.
- When the OTDC is on-site and has confirmed the OR booking, you will coordinate an NPOD Huddle. Please refer to the document "**NPOD Following DCD Attempt – Rapid Huddle Guidelines**".
- Following the huddle, you will dispatch the Surgical Recovery Coordinator and lung recovery team as per existing protocols.

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## **Non-Perfused Organ Donation (Lung) Following DCD Attempt**

### **For Manager on Call**

#### **What do you have to do to prepare?**

- Proceed as per current practices for any DCD donation case but also make note of the following:
  - Familiarize yourself with the hospitals where NPOD After DCD Attempt may occur so that you are prepared. NPOD After DCD is available at hospitals within a 2-hour driving distance (at night) from the University Health Network (UHN). Please refer to the document **“NPOD After DCD Attempt Participating Hospitals”**.
  - NPOD lung donation following DCD attempt will only be possible if the lungs have been accepted for transplantation. Please refer to the document **“NPOD After DCD Inclusion Criteria”** for details
  - Paediatric donors should be offered to UHN and will be discussed on a case-by-case basis.

#### **What do you have to consider when planning for a potential case?**

- To support planning, potential NPOD opportunity will be reviewed at the DCD case huddle.
- Death determination is completed as per current practice. If the patient does not die within the 3-hour time limit for DCD lung recovery, they will be formally considered as a potential NPOD following DCD Attempt donor.
- The CSC will coordinate an NPOD Following DCD Attempt Handoff Huddle to review next steps before the OTDC and SRC leave the hospital. Please refer to the document **“NPOD Following DCD Attempt - Transition Huddle Guidelines”**.
- The CSC will call the hospital to check the patient’s status every four hours and at shift change.

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### **What happens if the patient dies in < 24 hours following WLSM?**

- When the patient's systolic blood pressure  $\leq 50$ , the hospital will call the PRC. At this time, the CSC will dispatch an OTDC to go on-site.
- Once the OTDC has arrived onsite and confirms the OR booking, a decision will need to be made regarding pursuing the case as an NPOD After DCD Attempt. The CSC will coordinate an NPOD Huddle. Please refer to the document "**NPOD Following DCD Attempt – Rapid Huddle Guidelines**".
- If the case is closed, the OTDC will go onsite (if not already there) to close the case and inform the next of kin and hospital staff.
- If the case moves ahead, the CSC will dispatch a Surgical Recovery Coordinator and the lung recovery team as per existing protocols.
- The lungs will be recovered as per existing protocols.

## NPOD After DCD Attempt OTDC Checklist

### AFTER DCD ATTEMPT

- Huddle with MOC, CSC re: plan for NPOD
- Bring NPOD materials to bedside and give to primary RN
- Confirm with ICU Staff MRP about potential NPOD and timing window (up to 24 hours post WLSM)
- Pre-populate OR Booking Form for potential NPOD and leave with NPOD materials (e.g. NPOD Binder)
  - Book OR as per hospital protocol. Note procedure as: "NPOD" and prepare patient label
- Ensure instructions for scrub access and relevant details (e.g. scrub card) are left with the NPOD materials.

### AFTER SBP <50, OTDC DISPATCHED BY PRC

- Head onsite
- Call OR charge RN to give a heads up that NPOD may be soon. Assess resources with OR team.

### WHEN ONSITE

- At TOD – ensure patient has been:
  - Determination of death has been confirmed by two (2) physicians on Pronouncement of Death: NPOD Form. Confirm that Death Certificate has been completed
  - Re-intubated
  - Recruited (PEEP 30x 30 seconds)
  - Proned (assist if necessary)
  - Placed on pressure control 10cm H<sub>2</sub>O, rate 10; PEEP 10cm H<sub>2</sub>O, FiO<sub>2</sub> 0.21. Minimum time from death determination (time of death is end of 5-minute observation period) to ventilation is at least 10 minutes.
- Bring OR Booking Form to OR charge desk
- Call Anaesthesia to inform of NPOD
- Connect with SRC about scrubs sizes and ensure preparation completed for scrub access as per hospital protocol.
- Participate in NPOD After DCD Attempt Rapid Huddle
- If a decision is made to close the case, close the case when onsite. Speak to next of kin and hospital teams.

### WHEN OR READY

- Ensure bronchoscopy tower is brought to OR (RT to bring)
- Assist with transport to OR
- Bring
  - Consent forms
  - Coroner permission form
  - Pronouncement of death: NPOD Form
- Assist with placing patient in supine position in OR

### AFTER PATIENT IN OR

- If applicable, return scrub card to NPOD binder.
- Request that recovery team return scrubs as per hospital protocol.
- Bring chart back to ICU or ask OR RN to do this when recovery finished and leave at charge desk
- Update iTransplant

### RECORD IMPORTANT NUMBERS AT HOSPITAL (ICU, OR, Anaesthesia, RRT)

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## Non-Perfused Organ Donation Following DCD Attempt

### Primary RN Checklist

**Following DCD attempt, the patient is still eligible to be a lung donor if they die between 3-24 hours from withdrawal of life-sustaining measures. At this time:**

- Leave the monitor on and monitor the patient remotely, where possible. The patient should still be connected to the monitor but the screen may be shut off in the room.
- Continue use of NG tube.
- Document vital signs hourly on ICU flowsheet.

**When the patient's systolic blood pressure is  $\leq$  50mmHg:**

- Call the Provincial Resource Centre at TGLN (1-877-363-8456 press 1), begin by stating "I am calling from (hospital name) with a potential NPOD donor following DCD attempt to let you know the patients systolic blood pressure is below 50."
- Call-in the on-call staff ICU physician to prepare for NPOD.

**At Time of Death (TOD):**

- Call the Provincial Resource Centre (1-877-363-8456) to note time of death.
- Call the ICU staff physician for death determination. Ensure they have **Pronouncement of Death: NPOD Form** and Death Certificate.
- Call Respiratory Therapist/ Physician. Respiratory Therapist/physician to **re-intubate** patient and initiate lung recruitment 30cm H<sub>2</sub>O for 30 seconds.
- Prone** patient once intubated and recruited.
- Respiratory Therapist/physician to put patient on pressure control 10cm H<sub>2</sub>O, rate 10; PEEP 10cm H<sub>2</sub>O, FiO<sub>2</sub> 0.21. Minimum time from death determination (time of death is end of 5-minute observation period) to ventilation is at least 10 minutes.
- Accompany TGLN Coordinator to take patient to OR and assist with un-proning in OR.

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## **Non-Perfused Organ Donation (Lung) Following DCD Attempt**

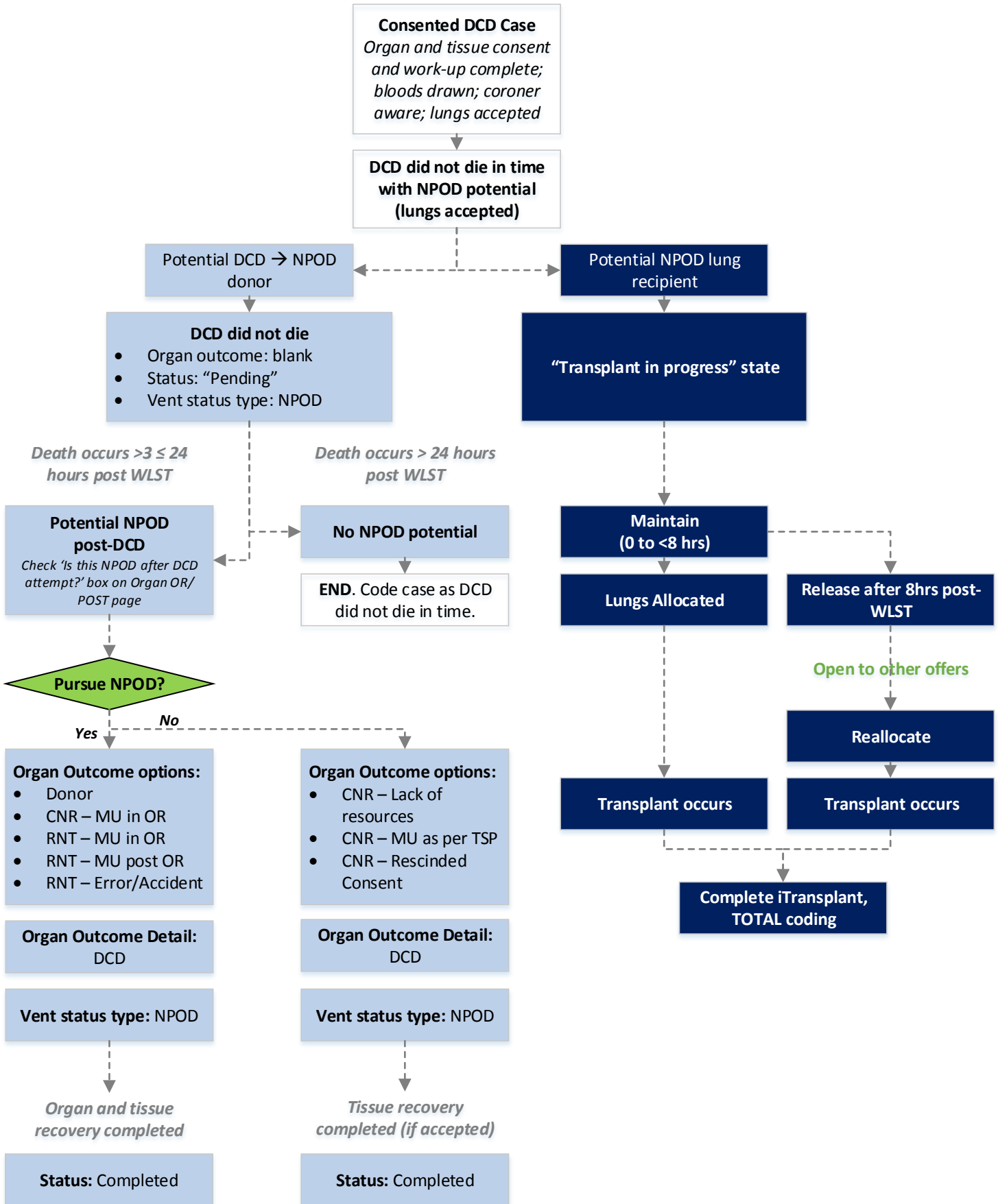
### **Registered Respiratory Therapist Checklist**

#### **After Pronouncement of Death, rapidly:**

- Re-intubate the patient.
  
- Initiate ventilation 10 minutes after determination of death. Recruit 30cm H<sub>2</sub>O for 30 seconds.
  
- Assist nurse with turning patient to prone position.
  
- Place patient on pressure control 10cm H<sub>2</sub>O, rate 10; PEEP 10cm H<sub>2</sub>O, FiO<sub>2</sub> 0.21.  
Minimum time from death determination (time of death is end of 5-minute observation period) to ventilation is at least 10 minutes.
  
- Bring bronchoscopy tower to OR.
  
- Assist transporting to OR.
  
- Attach patient to vent in OR and ventilate/recruit donor lungs as per transplant team request intra-operative (May be completed by anaesthesia, depending on availability).



### iTransplant Coding for NPOD After DCD Attempt Cases



## iTransplant Coding for NPOD After DCD Attempt Cases

1. Referred DCD cases are assessed and proceed as per the protocol for regular DCD cases.
2. Should the potential DCD donor not die within 3 hours of withdrawal of life-sustaining measures (WLSM), they may be considered a candidate for non-perfused organ donation (NPOD) lung donation if the following conditions are met:
  - a. the patient's lungs have been accepted for transplantation; and
  - b. the patient is at one of the hospitals where NPOD lung donation is available.
3. If the conditions for #2 are met, these potential cases should be flagged for the UHN lung transplant team.
4. Potential DCD → NPOD cases should be coded as:
  - Organ outcome: blank
  - Status: "Pending"
  - Vent status type: NPOD
5. Should the patient die over 24 hours post-WLSM, the case is closed for NPOD and should be coded as DCD did not die in time.
6. Should the patient die in >3 hours but ≤24 hours, the case should be identified as a potential NPOD post-DCD. The check box next to "Is this NPOD after DCD attempt?" located on the Organ OR/POST page of iTransplant should be checked.
7. When the hospital calls the PRC to note the time of death of the patient, a decision is made as to whether NPOD is pursued.
8. The case may not be pursued for organ if any of the following conditions are met:
  - a. Lack of TGLN resources (Code: Consented Not Recovered – lack of TGLN resources)
  - b. Lack of hospital resources (Code: Consented Not Recovered – lack of hospital resources)
  - c. Lack of recovery resources (Code: Consented Not Recovered – lack of recovery resources)
  - d. Medically unsuitable (Code: Consented Not Recovered – Medically unsuitable as per TSP)
  - e. Rescinded Consent (Code: Consented Not Recovered – Rescinded Consent)9.
9. If the conditions for #8 are met, the organ outcome detail is coded as "DCD", with the vent status type noted "NPOD". The case status is marked as "Completed" by the Tissue Coordinator AFTER tissue recovery is completed.
10. If the conditions for #8 are not met, and the case is pursued for NPOD lung recovery.
11. The organ outcome options for cases that are pursued for organ are as follows:
  - a. Donor
  - b. Consented Not Recovered – medically unsuitable in OR
  - c. Recovered Not Transplanted – medically unsuitable in OR
  - d. Recovered Not Transplanted – medically unsuitable post OR
  - e. Recovered Not Transplanted – Error/Accident

The organ outcome detail is coded as "DCD", with the vent status type noted "NPOD". The case status is marked as "Completed" AFTER organ AND tissue recovery is completed. If there is no tissue recovery completed, this will be done by PRC-Organ; if tissue is recovered, this will be done by the Tissue Coordinator.