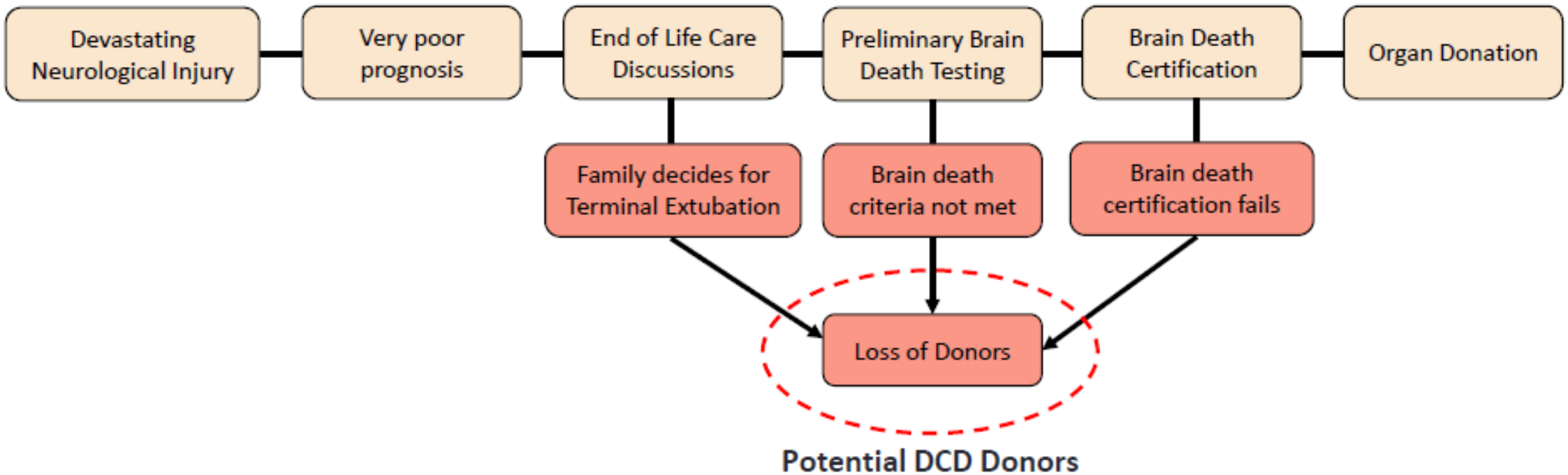
Kidney donation after circulatory death (DCD) workflow

Date: Feb 2025

Legislation

	HOTA	MTERA
Age	21 years old and above	18 years old and above
Nationality	Singaporeans & Permanent Resident	Anyone regardless of nationality
Possible Organs/Tissues for Donation	Kidneys, Liver, Heart & Corneas	All other organs, tissues & whole body
Purpose	Transplant only	Transplant, Education & Research
System	Opt-Out (Self)	Opt-In (Self / NOK)

Pathway for Organ Donation after Brain Death



Clinical trigger

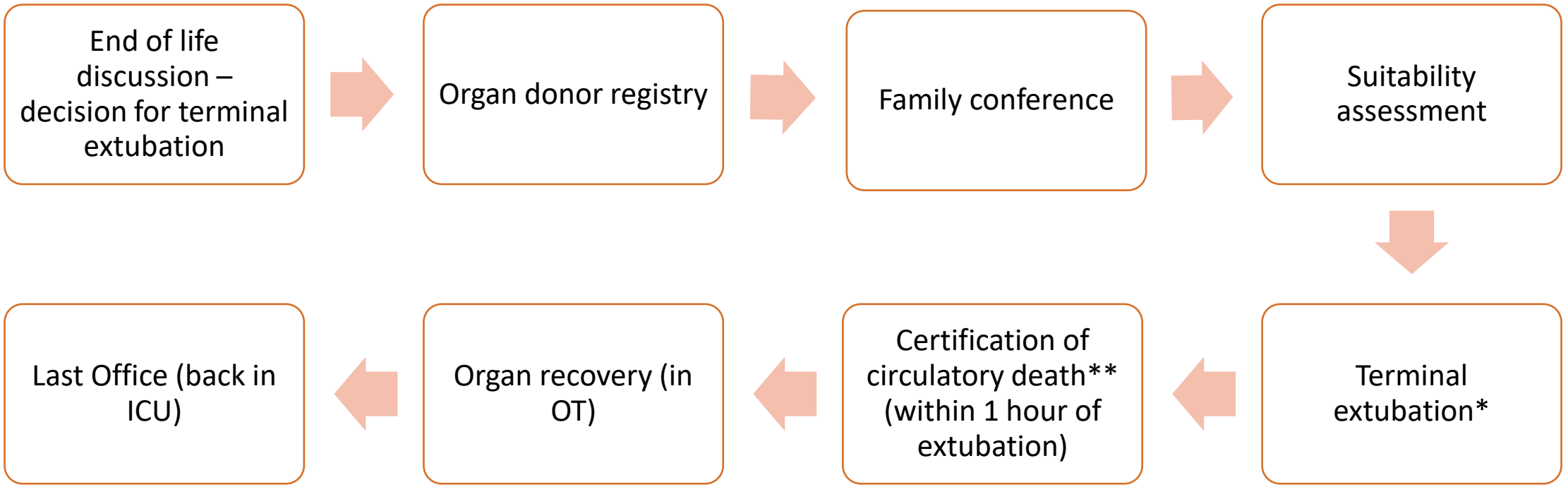
DCD criteria:

- Severe neurologic injuries and GCS < 4
- Age >2 months and < 70 years old (based on the Manual)
- Non-coroner's case
- No history of diabetes or uncontrolled hypertension

- Doctor-in-charge decides that active treatment for patient is futile and discusses end-of-life care with patient's NOK, NOTU Donor Coordinator (DC) can be activated for the family conference.
- If terminal extubation has been decided, the option of DCD can be offered to the family.
- DCD is performed under a controlled setting where cardiac arrest is anticipated following planned withdrawal of ventilatory support.
- Organ/tissue that can be recovered: Kidneys, heart valves, iliac vessels, corneas, skin

DCD process flow

6 – 12 hours (depending on the time of extubation)



****Certifiers of cardiac death: names to be obtained from existing hospital list of persons able to certify brain death and/or doctors who are not in the care of potential donor.**

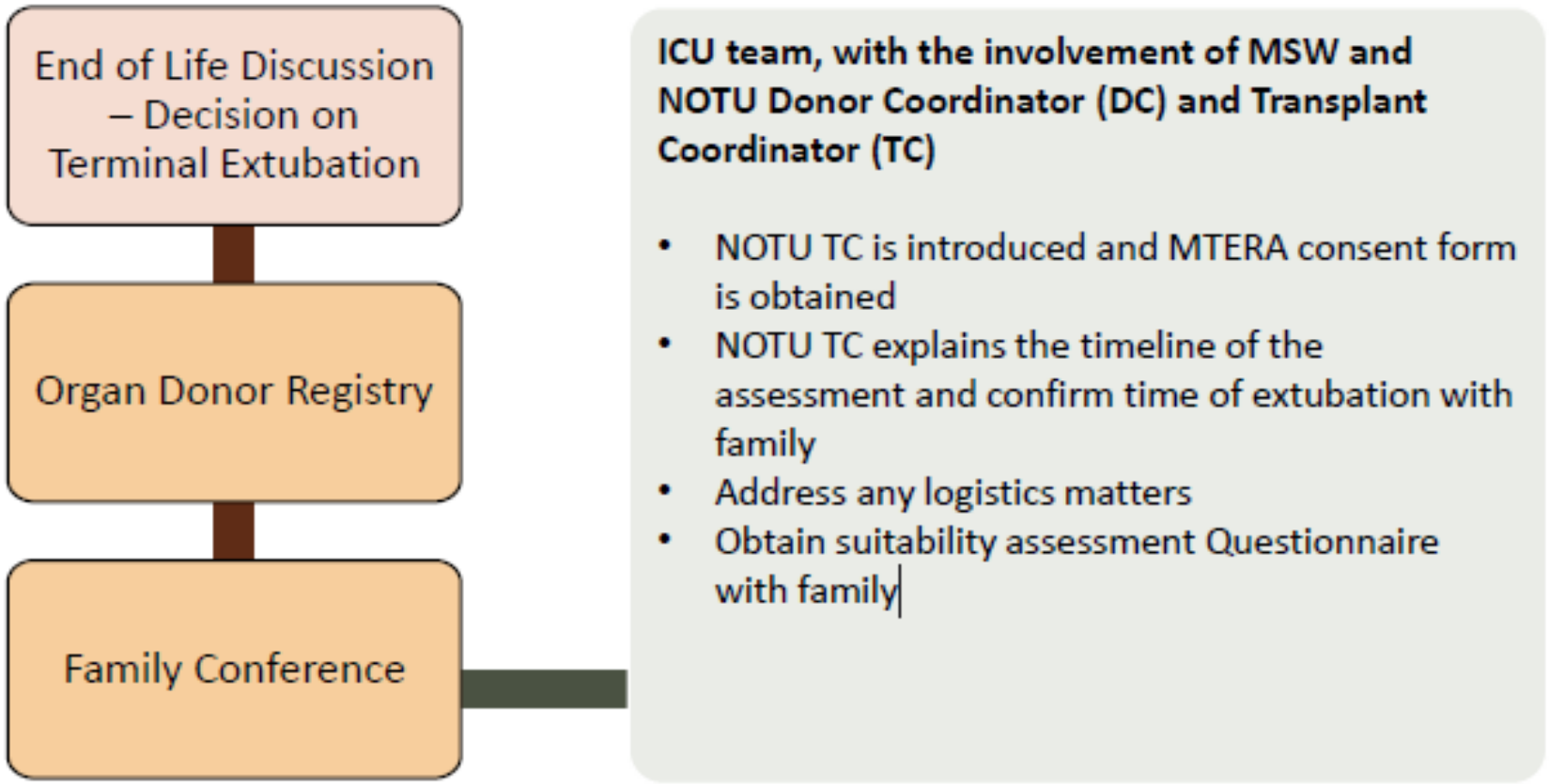
DCD process flow

End of life discussion – decision for terminal extubation

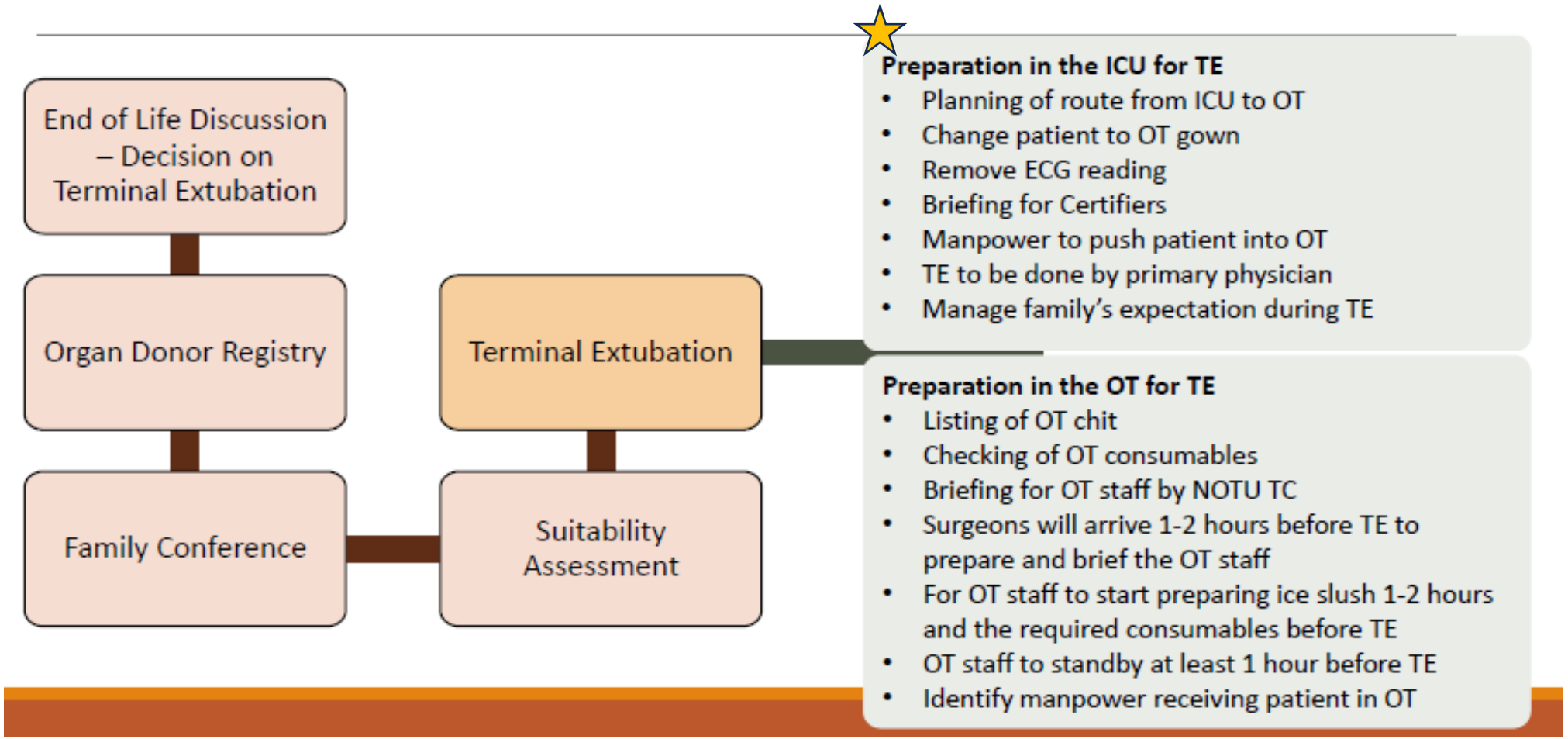
<u>ICU team with MSW and NOTU donor Co-ordinator (DC)</u>

- Confirm family's decision on end-of-life options
- Family accepts that treatment is futile and choses terminal extubation
- Possibility of kidney donation (and other tissues)
- If family is agreeable, NOTU DC to share a brief timeline for assessment and a possible time for terminal extubation, unless otherwise requested by the family
- Management of family's expectations
    - DC (with support from ICU team and MSW) to counsel re: process and family presence during terminal extubation
    - **need for IAL line in order to certify cardiac death**
- MTERA Consent may be taken at this point

DCD process flow



DCD process flow



DCD process flow- Preparing for terminal extubation in ICU

Pre-extubation team briefing:

1. **Identify roles and responsibilities:**
    - **ICU dr:** perform extubation + help push bed
    - **ICU bedside nurse:** assist with bedside cares + help push bed, contact security when vitals deteriorating
    - **Code nurse**: hold code lift key + call lift when asystole occurs
    - **MSW:** to provide support for family
    - **2 cardiac death certifiers:** perform cardiac death certification
    - **TC:** prepare family, co-ordinate DCD process and help push bed
    - ***Security:*** *to help clear path during transfer*
2. **Planning of route from ICU to OT**
    - Decide how to move bed out of ICU
    - Confirm which OT door:
        - Paeds: E-door opposite level 2 CICU children's tower
        - Women's: Emergency Door (ED)1- code blue door at level 2 women's tower (Note: Staff pushing the patient need to tap on the first door leading to OT. OT staff to open and lean against the both panels of the ED1.) this is only applicable during ICU renovation period, after renovation, both Paeds/Women patient will enter from E-door opposite to level 2 CICU.

DCD process flow- Preparing for terminal extubation in ICU

Pre-extubation team briefing:

3. Briefing of certifiers by NOTU TC

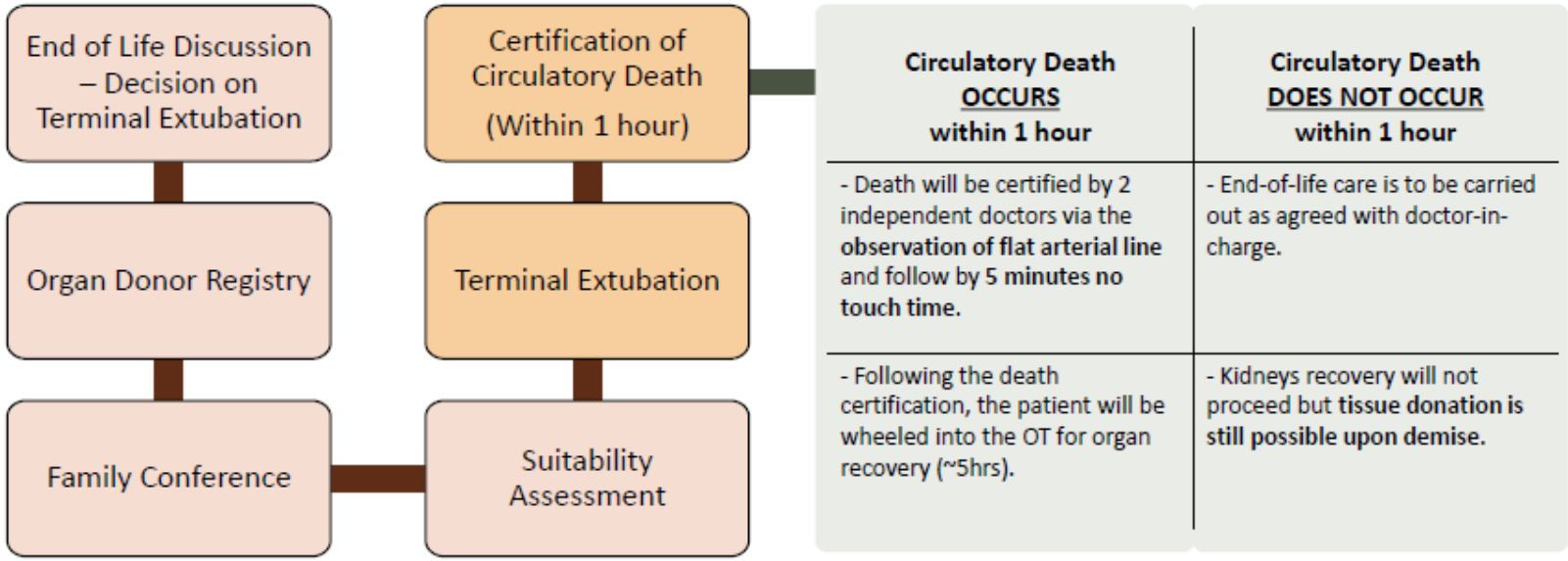
- TE to be performed by primary physician
- Certifiers to be by bedside to observe flat art line
- Once flat art line is observed, there will be a 5 minutes no touch (TC will time keep)
- Once 5 minutes up, certifiers to proceed with certification and signing of the cardiac death form

4. Prepare patient:

- Change to OT gown (OT gown to be laid on top of patient, covered by blanket)
- Remove all monitors (including ECG leads) except IABP
- Disconnect all infusions except IAL
- Spigot all drains (e.g. IDC, NGT, chest drains etc)
- Disconnect bed from power source

5. Prepare family: may not be present to witness cardiac death, and will be invited to wait outside after terminal extubation

DCD process flow- Terminal extubation in ICU



Best practices:

- Invite family outside of room/cubicle immediately after terminal extubation, MSW to support. Family not advised to carry patient after terminal extubation
- Minimize handling patient during asystole time
- To activate security when vitals deteriorating
- To call code lift once asystole has occurred
- To push out of ICU once cardiac death has been certified – bring patient case notes along
- Family can accompany patient till entrance of CICU/WICU, not recommended to follow in lift

DCD process flow- Preparation in OT

Pre–terminal extubation

- **Useful OT contact: OT nursing OIC handphone: 81217922 (24/7 available)**
- Listing of OT chit
- Checking of OT consumables
- Briefing for OT staff by NOTU TC – confirm which OT door to expect patient from
- Surgeons will arrive 1-2 hours before TE to prepare and brief the OT staff
- For OT staff to start preparing ice slush 1-2 hours and the required consumables before TE (all consumables opened are to be charged to the donor's bill regardless of successful or unsuccessful case)
- NOTU TC will send in HTK solutions, transport boxes and the necessary items.
- OT nurse to scrub up, prepare instrument trolly and benchwork ready at least 1 hour before TE
- Identify manpower receiving patient in OT
- Minimal patient identifiers will be verified when patient is pushed into OT (i.e. no stopping to check patient identifiers while en-route to OR)

Upon reaching OT

- Patient will be pushed into the OR asap while OT staff to ensure clearance of pathway.
- Once patient is in the OR, to transfer patient immediately to the operating table and remove OT gown asap.
- Surgeons will takeover immediately.

Post-organ recovery

- TC to inform family about completion of organ recovery
- OT staff to call ICU to inform that patient will be returning to ICU, and transport patient back to ICU to perform last office
- TC will update the stakeholders (ICU doctors, MSW) on the completion of organ recovery