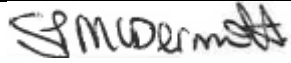







<b>Document Title</b>	<b>Guideline for the use of the Tecotherm Neo to deliver neonatal therapeutic hypothermia treatment</b>
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### Approval signatures

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No	Operating Procedure	Key Points
1	<b>Introduction</b>	<p>Therapeutic hypothermia is a recognised treatment for infants with hypoxic ischaemic encephalopathy. The treatment consists of cooling the infant's core temperature to 33.5 °C, for a period for 72hrs, before slowly rewarming. 'Cooling', as it is known, is recognised to decrease the severity of adverse neuro-developmental outcomes following an asphyxial event. Outcomes are improved if cooling is commenced within 6 hours of the insult.</p> <p>The Tecotherm Neo is a cooling device which utilises a temperature regulated mattress (either manual or servo controlled) to achieve total body hypothermia. The Tecotherm is also portable and can be used during the transfers of these compromised infants to ensure therapeutic hypothermia is commenced in a timely and controlled manner.</p>
2	<b>Objective</b>	To safely and accurately set up and operate the Tecotherm Neo for the purpose of providing therapeutic hypothermia during transport

3	<b>Scope</b>	The NISTAR Neonatal Team
4	<b>Procedure</b>	<p><b>Equipment Preparation:</b></p> <ul style="list-style-type: none"><li>• Tecotherm Neo</li></ul>  <ul style="list-style-type: none"><li>• Sterile Water</li><li>• Fill Up Set</li></ul>  <ul style="list-style-type: none"><li>• Connecting Hose</li></ul> 

- Reusable Aqua Wrap Mattress



- Interlayer
- Chlorine Dioxide Tablet (1.5-4ppm)
- Disposable Rectal Probe



- Reusable Skin Probe



**Preparing the Tecotherm mattress:**

- Connect the male mattress connectors to the female connectors of the hose
- Connect the hoses to the lower pair of device ports
- Fill the Fill Up Set with sterile water up to the 450ml mark



- Connect the Fill Up Set to the refill connection ports on the front of the Tecotherm device
- Invert the Fill Up bottle and let the water flow into the mattress via the Tecotherm. Continue until the mattress is filled with fluid and is firm to the touch. Ensure all air bubbles are dissipated. Be aware that you may need more than 450mls of water if the mattress is completely empty to start. If this is the case, simply disconnect the Fill Up Set, refill it with sterile water and repeat the process
- Once the mattress is filled, disconnect the Fill Up Set from the Tecotherm

#### Using the Tecotherm:

- Turn on the Tecotherm by pressing the power button
- A self-test will run automatically, which will include hearing two different alarm sounds. Once you have heard both alarms sound, press the 'Yes' button
- The Main Menu should now appear. This includes several functions. These can be scrolled through with the up and down arrows using the buttons to the right side of the screen
- Once the desired treatment option had been chosen, confirm the choice using the 'Select' button. Complete Treatment Mode, Servo Mode or Constant Mattress Temperature Mode will be the most commonly used programmes, with Servo Mode being the default option
- The non-disposable skin probe should be attached to the patient for all treatment options, and connected to the Tecotherm in the S (skin) port.
- If using the Servo Mode, a rectal probe must be inserted into the patient, and connected to the Tecotherm in the R (rectal) port. The rectal probe should be inserted gently into approximately 5-6cm and fixed securely to the patients leg
- Once the appropriate parameters have been selected, press 'Start'
- When using during a transfer, ensure the incubator temperature is turned off
- Ensure this is no kinking in the tubing during use, which could lead to restricted fluid flow

#### During Treatment:

- The initial screen will display the set, rectal, mattress and skin temperatures. After approximately 60 secs, the screen will change to on a large font display
- In Servo Mode, the current rectal temperature is displayed. Once the rectal temperature is within the target range, it is displayed in large **GREEN** figures. However, if this temperature is outwith the target temperature (33.5°C by more than +/- 0.5°C the figure appears in **RED**.



		<ul style="list-style-type: none"> <li>In the Constant Mattress Temperature Mode the figure appears in <b>BLUE</b> once the set mattress temperature is reached. Again, if the recorded mattress temperature is outwith the target by +/- 0.5°C, the figure will appear in <b>RED</b>.</li> <li>At any point, all recorded and set parameters can be visualised by pressing the 'Details' button</li> <li>Parameters can be changed at any time by selecting the 'Change Parameters' button</li> </ul> <p><b>Following Treatment:</b></p> <ul style="list-style-type: none"> <li>Once the transfer is complete, the Tecotherm should NOT be powered off directly. Instead, first select 'End Treatment and Save Data' and then select 'Power Off' in the main menu</li> <li>If required, the last treatment episode can be saved to a USB by selecting 'Export Treatment Data' in the main menu</li> <li>Unplug the mattress hoses and clean the mattress with alcohol wipes</li> </ul> <p><b>Cleaning:</b></p> <ul style="list-style-type: none"> <li>The Tecotherm should be fully cleaned every 2 months with the appropriate cleansing solution (450 ml sterile water and 1x Chlorine Dioxide Tablet (1.5-4 ppm) )</li> <li>Refer to the Tecotherm Neo Instructions for the full cleaning procedure</li> </ul>
5	<b>Regulations/ references</b>	<p><a href="http://www.cps.ca/documents/position/hypothermia-for-newborns-with-hypoxic-ischemic-encephalopathy">http://www.cps.ca/documents/position/hypothermia-for-newborns-with-hypoxic-ischemic-encephalopathy</a></p> <p><a href="http://www.npeu.ox.ac.uk/downloads/files/tobyregister/Register-Clinicians-Handbook-v4-07-06-10.pdf">http://www.npeu.ox.ac.uk/downloads/files/tobyregister/Register-Clinicians-Handbook-v4-07-06-10.pdf</a></p>
6	<b>Related documents</b>	<p><a href="http://www.youtube.com">www.youtube.com</a> Inspiration Healthcare; How to set up Tecotherm Neo</p> <p><a href="http://www.InspirationHealthcare.com">www.InspirationHealthcare.com</a> Tecotherm Neo User Manual</p>
7	<b>Abbreviations</b>	<p>NISTAR- Northern Ireland Specialist Transport and Retrieval</p> <p>PPM- Parts per million</p>
8	<b>Revision history</b>	<p>Review 14/07/2023</p>