How to pack a cooler

Keep this step-by-step procedure with your cooler/s. Refer to the National Vaccine Storage Guidelines (NVSG) – Strive for 5, 2nd edition pps31 to 38.

Equipment required:

- Cooler, Esky™ (a solid-walled insulated container)
  Note: polystyrene coolers provide insulation for up to 4 hours

- Gel packs / ice packs (number is dependent on size of cooler)

- Insulating material, e.g. polystyrene chips, bubble wrap, shredded paper

- Min/max digital thermometer

- Qld Health temperature log (for recording temperature) and pen

- Zip-lock bags (optional) – can be used to pack vaccines together when relocating to cooler

Condition gel packs / ice packs prior to use:

Refer to NVSG pps 33-34.
'Condition' the gel packs / ice packs to allow the core temperature of the packs to reach 0°C, this reduces the chance of the vaccines freezing.

Time required to condition packs is dependent on room temperature but may take **up to one hour or more.** *(The time required to condition gel packs / ice packs is important given most purpose-built vaccine fridges, especially those with a glass door will exceed +8°C within 30 minutes)*

1. Remove from freezer; lay out in single layer leaving space between each pack.

2. Wait until packs begin to 'sweat'.

3. If you do not have time to condition the gel/ice packs ensure they are wrapped in insulating material, you may consider dunking gel/ice packs in warm water to rapidly condition.

4. The pack is conditioned when water begins to 'slosh', or gel is softened inside the pack.

Note: Gel packs may take longer to 'condition' than ice packs – refer to table below

Gel packs weighing < 750gms	Gel packs weighing > 750gms
• If room temperature is over +15°C, condition for **45 minutes** before use • If room temperature is less than +15°C condition for **1 hour** prior to use	• If room temperature is over +15°C condition for **1 hour** before use • If room temperature is less than +15°C condition for **1½ hours** before use

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Prior to using the cooler:
Chill the inside of the cooler by placing gel packs / ice packs inside. (This may only take about 15 minutes if packs are frozen.) Monitor the temperature to make sure the cooler reaches appropriate temperature.

Packing the cooler:
1. Place bubble wrap or other insulating material at the bottom of the cooler (this eliminates 'hot' and 'cold' spots).

2. If using zip-lock bags, vaccines can be grouped together to make packing and unpacking the cooler easier.

3. Place a min/max digital thermometer in the centre of the container. Make sure the thermometer probe is placed inside an empty vaccine box.

4. Surround the vaccines with packing material which allows cold air to circulate. Make sure vaccines are not in direct contact with gel packs / ice packs (this will reduce possibility of vaccines freezing). *If using bubble wrap, avoid wrapping vaccines tightly as this will inhibit air circulation around the vaccines.*

5. Place the conditioned gel pack /ice packs on top, close and seal the lid of the cooler. In a large cooler, you may also need to place additional gel packs / ice packs around the sides of the cooler.

6. Monitor the temperature frequently (every 15minutes for the first 2hours or until the temperature has stabilised) then every hour. Keep Qld Health temperature log with the cooler to record temperature.

7. If you are transferring your vaccines to alternative monitored storage you need to follow the steps above to ensure they remain within the recommended temperature range.

8. *If it is necessary to store vaccines in a cooler/s overnight once the temperature has stabilised record the min/max temperature before leaving on arrival the following morning.*

9. When the power is returned: refer to p30 of the 'NVSG – Strive for 5, 2nd edition p.30

Remember aim is to keep vaccines between +2°C and +8°C. Coolers may not be able to maintain this for a long period of time – it is important to monitor the temperature regularly.

Example of a packed 30Litre Cooler

Polystyrene chips or bubble wrap packed beneath and around vaccine packaging

Conditioned ice pack/gel packs

Polystyrene sheet (12 - 20mm thick), polystyrene chips or bubble wrap

Conditioned ice pack/gel packs lining the inside wall of the cooler

Min/Max Thermometer probe

Freeze Indicator in with freeze-sensitive vaccines