Temperature Regulation
- The thermostat in domestic refrigerators detects temperature changes and controls the compressor's on and off function. When the temperature exceeds the set temperature of the thermostat, the thermostat sends a signal to the compressor to cool the unit.
- Domestic refrigerators are designed to cool the unit by air blown at below 0°C from the evaporator into the refrigerator. Products placed close to vents will experience these below 0°C temperatures.
- Finally, temperature sensors are located in various areas of the refrigerator depending on the model. The sensors may not measure the temperature where the vaccines are stored, thereby possibly exposing vaccines to temperatures outside the recommended range when the evaporator blows cold air into the refrigerator.

Defrost Mechanism
- The defrost mechanism in domestic refrigerators can cause temperature fluctuations within the unit. The combination of the compressor cooler, the defrost heating, as well as poor uniformity of temperatures throughout the compartments, creates temperature variations which can affect vaccine storage.

Spatial Temperature Differential
- Domestic refrigerators are designed to have various temperature zones for multiple storage functions. They are designed so that there is transfer of cool air from the freezer to the refrigerator. In turn, this could result in vaccines being stored in suboptimal conditions.

Effects of Changes in Ambient Temperature
- In domestic refrigerators, the temperature sensor may be located in the freezer. As a result, when the ambient temperature rises, the compressor operates more frequently, and the refrigerator gets exposed to cooler air from the evaporator.

Temperature Recovery
- With domestic refrigerators the temperature recovery (from high and low ranges) can depend on many factors and this should be checked to ensure that it does not place the vaccines at risk.

Equipment Placement
- Good air circulation around the vaccine storage unit is essential for proper heat exchange and cooling functions.
- The unit should be placed in a well-ventilated room and should have space around the sides, top and back. Leave at least 10 cm of space (or as recommended by the manufacturer) between the back of the unit and the wall.
- Do not place in direct sunlight, near a heat source, or along an outside wall where the temperature of the wall can vary, depending on the season.

Use of a Bar Fridge
- Any style of small single-door (bar-style) fridge is unpredictable in terms of maintaining temperatures and should not be used.
- Jurisdictions in Canada report that use of bar fridges for vaccine storage is a leading cause of cold-chain breaks.

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