紐約州 2019 冠狀病毒病疫苗接種計畫關於運送疫苗的指示

不建議定期運送疫苗。每次運送都會增加疫苗暴露在不適宜儲藏環境中的風險，這會影響疫苗活性。但在特定的情況下有必要運送疫苗。不能運送敞口的藥瓶。

每次疫苗運送時，向紐約州 2019 冠狀病毒病疫苗接種項目 (NYS COVID-19 Vaccine Program) 發送郵件 covid19vaccine@health.ny.gov 交回填寫完成的運輸追蹤表（請見本指示最後一頁）

每個有儲藏能力的接收點必須註冊 2019 冠狀病毒病疫苗接種項目，必須遵守紐約州衛生廳 (Department of Health) 包括儲藏和處理要求在內的所有指示和命令。

應該如何運送疫苗？

1. **便攜式疫苗冷藏箱和冷凍箱**被認為是運送疫苗的**最好方法**。因為便攜式疫苗冷藏箱和冷凍箱有內嵌式溫度調節器，受恆溫器的控制來維持溫度，且不需使用包裝就能維持適宜的溫度，所以更推薦使用。
2. **使用不間斷的溫度檢測儀器**或數字版數據記錄儀 (digital data logger, DDL) 來檢測運送期間的溫度。
3. **符合要求的容器和包裝**經實驗室測試，適合在無便攜式疫苗冷藏箱時用於緊急或短期疫苗運送。
   A. 符合要求的容器無內嵌式溫度調節器來維持溫度，但可在同時採用符合要求的包裝情況下維持適宜的溫度。
   B. 聚苯乙烯冷卻器或完整的泡沫聚苯乙烯疫苗運送容器就是符合要求的容器範例。不能使用軟面或可折疊冷卻器。
   C. 符合要求的包裝要求特定的用品和包裝程序，旨在減少溫度偏移的情況。請參照***疾病控制中心 (Centers for Disease Control, CDC) 的***指示：***緊急情況下運送疫苗的包裝要求***請見第 3 和 4 頁。
   D. 無便攜式或符合要求的容器時，可在短期或緊急運送中使用**硬面絕緣冷卻器**。
4. **運送冷藏疫苗：**
   A. 運送中的溫度應維持在 36ºF 至 46ºF（2ºC 至 8ºC）之間。楊森公司 (Janssen)、摩德納公司 (Moderna) 和輝瑞公司 (Pfizer) 的疫苗可冷藏運送。
   B. 使用便攜式冷藏箱或符合要求的容器，並在包裝中裝有數據記錄儀。妥善包裝可在無破損的情況下維持 8 小時的適宜溫度。
   C. 避免陽光直射疫苗。
   D. 盡可能保護疫苗不掉落、不受打擊和不受震動。盡可能放在原始紙板箱中運送。若單獨運送藥瓶，則要在藥瓶旁放置墊襯（泡沫包裝或類似類似填充物等填充材料）。必須固定運送容器。
   E. 僅運送完整無孔的藥瓶。
   F. 謹慎處理，保證疫苗在運送過程中不會再次冷凍。

G. 在計算疫苗超過使用期限 (beyond use date, BUD) 時加上運送時長。如需獲取更多訊息和超過使用期限追蹤標籤示例，請參照 https://www.cdc.gov/vaccines/covid-19/info-by-product/moderna/downloads/bud-tracking-labels.pdf 和 https://www.cdc.gov/vaccines/covid-19/info-by-product/pfizer/downloads/bud-tracking-labels.pdf

5. 運送冷凍疫苗：

A. 截止 2021 年 3 月，摩德納公司和輝瑞公司的疫苗可在冷凍狀態下儲藏或運送（-25˚C 至 -15˚C 或 -13˚F 至 5˚F）。若必須運送摩德納公司的疫苗和輝瑞公司的單獨藥瓶，且還未解凍，則更建議冷凍運送。

B. 使用便攜式冷凍箱或符合要求的容器，並在包裝中裝有能承受冷凍溫度的數據記錄儀。

C. 抵達目的地後馬上打開疫苗包裝，並將其放置在維持在可接受溫度範圍內的冷凍箱或冷藏箱中。

D. 若輝瑞公司的單獨藥瓶被冷凍運送，則運送過程中的時長也算在 -25˚ C 至 -15˚ C 之間儲藏的 2 週期限內。 -25˚ C 至 -15˚ C 之間運送的冷凍疫苗可一次性調回至 -80˚ C 至 -60˚ C 的建議儲藏條件。

E. 不要僅在乾冰或 -40˚C (40˚F) 以下運送或儲藏摩德納公司疫苗。

F. 避免陽光直射藥瓶。

G. **若冷凍疫苗在運送中開始解凍，則應在接收點處放入冷藏箱儲藏。不要再次冷凍已經開始解凍的疫苗。**

6. 運送超冷凍 (ultra-frozen, ULT) 疫苗：

A. 截止 2021 年 2 月，輝瑞公司的疫苗是唯一一種可在超冷凍情況下（-80˚C 至 -60˚C 或 -112˚F 至 -76˚F）儲藏或運送的冠狀病毒病疫苗。

B. 使用有乾冰的原始熱運輸容器，或可維持在 -80˚C 的便攜式超冷凍箱。

C. **僅運送完整托盤中的疫苗**；未裝滿的托盤或單獨藥瓶可在 -25˚ C 至 -15˚ C 之間運送，準備解凍的要冷藏運送，這種情況除外。已使用的藥瓶在任何情況下都不能在提供商之間運送。

D. 維持托盤的原包裝，避免疫苗受到光線照射。

E. 不要在馬上要解凍以前打開托盤或拿走藥瓶。

F. 打開包裝後的五分鐘之內要把托盤放在超冷凍的儲藏環境中。

G. 輝瑞公司的 2019 冠狀病毒病疫苗離開超冷凍儲藏條件後，必須在 120 個小時（5 天）內使用。

H. 不要再次冷凍已解凍的疫苗。

若運送過程中的溫度超過或低於適宜溫度範圍，則要在疫苗送達接收點後盡快發送郵件至 vaccinetempexcursion@health.ny.gov 上報。

資源

疾病控制中心、緊急情況下運送疫苗的包裝要求，請見
http://www.cdc.gov/vaccines/recs/storage/downloads/emergency-transport.pdf

疾病控制中心、疫苗儲藏和處理工具箱，請見
https://www.cdc.gov/vaccines/hcp/admin/storage/toolkit/storage-handling-toolkit.pdf 第 21-24 頁和 49-62 頁

Packing Vaccines for Transport during Emergencies

Be ready BEFORE the emergency

Equipment failures, power outages, natural disasters—these and other emergency situations can compromise vaccine storage conditions and damage your vaccine supply. **It's critical to have an up-to-date emergency plan with steps you should take to protect your vaccine.** In any emergency event, activate your emergency plan immediately, and if you can do so safely, follow the emergency packing procedures for refrigerated vaccines.

1 Gather the Supplies

Hard-sided coolers or Styrofoam™ vaccine shipping containers

- Coolers should be large enough for your location's typical supply of refrigerated vaccines.
- Can use original shipping boxes from manufacturers if available.
- Do NOT use soft-sided collapsible coolers.

Conditioned frozen water bottles

- Use 16.9 oz. bottles for medium/large coolers or 8 oz. bottles for small coolers (enough for 2 layers inside cooler).
- Do NOT reuse coolant packs from original vaccine shipping container, as they increase risk of freezing vaccines.
- Freeze water bottles (can help regulate the temperature in your freezer).
- Before use, you must condition the frozen water bottles. Put them in a sink filled with several inches of cool or lukewarm water until you see a layer of water forming near the surface of bottle. The bottle is properly conditioned if ice block inside spins freely when rotated in your hand.

Insulating material — You will need two of each layer

- **Insulating cushioning material** – Bubble wrap, packing foam, or Styrofoam™ for a layer above and below the vaccines, at least 1 in thick. Make sure it covers the cardboard completely. Do NOT use packing peanuts or other loose material that might shift during transport.
- **Corrugated cardboard** – Two pieces cut to fit interior dimensions of cooler(s) to be placed between insulating cushioning material and conditioned frozen water bottles.

Temperature monitoring device – Digital data logger (DDL) with buffered probe. Accuracy of +/-1°F (+/-0.5°C) with a current and valid certificate of calibration testing. Pre-chill buffered probe for at least 5 hours in refrigerator. Temperature monitoring device currently stored in refrigerator can be used, as long as there is a device to measure temperatures for any remaining vaccines.

Why do you need cardboard, bubble wrap, and conditioned frozen water bottles?

Conditioned frozen water bottles and corrugated cardboard used along with one inch of insulating material such as bubble wrap keeps refrigerated vaccines at the right temperature and prevents them from freezing. **Reusing vaccine coolant packs from original vaccine shipping containers can freeze and damage refrigerated vaccines.**

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

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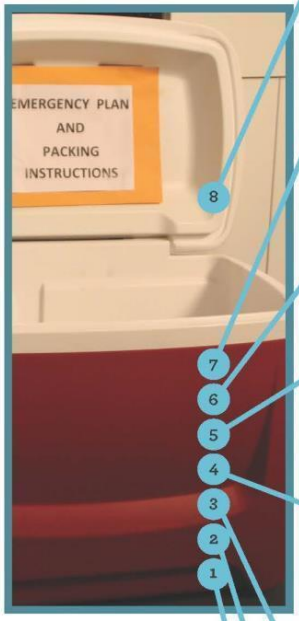
Visit www.cdc.gov/vaccines/SandH for more information, or your state health department.

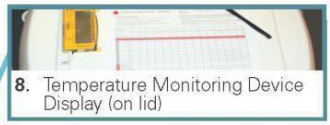
Packing Vaccines for Transport during Emergencies

2 Pack for Transport

Conditioning frozen water bottles

- Put frozen water bottles in sink filled with several inches of cool or lukewarm water or under running tap water until you see a layer of water forming near surface of bottle.
- The bottle is properly conditioned if ice block inside spins freely when rotated in your hand.
- If ice "sticks," put bottle back in water for another minute.
- Dry each bottle.
- Line the bottom and top of cooler with a single layer of conditioned water bottles.
- Do NOT reuse coolant packs from original vaccine shipping container.




8. Temperature Monitoring Device Display (on lid)

Close lid – Close the lid and attach DDL display and temperature log to the top of the lid.


7. Conditioned Water Bottles

Conditioned frozen water bottles – Fill the remaining space in the cooler with an additional layer of conditioned frozen water bottles.


6. Cardboard Sheet

Insulating material – Another sheet of cardboard may be needed to support top layer of water bottles.


5. Bubble wrap, packing foam, or Styrofoam™

Insulating material – Cover vaccines with another 1 in. layer of bubble wrap, packing foam, or Styrofoam™


4. Vaccines, Diluents, and Temperature Monitoring Device Probe

Vaccines – Add remaining vaccines and diluents to cooler, covering DDL probe.
Temperature monitoring device – When cooler is halfway full, place DDL buffered probe in center of vaccines, but keep DDL display outside cooler until finished loading.
Vaccines – Stack boxes of vaccines and diluents on top of insulating material.


3. Bubble wrap, packing foam, or Styrofoam™

Insulating material – Place a layer of bubble wrap, packing foam, or Styrofoam™ on top (layer must be at least 1 in. thick and must cover cardboard completely).


2. Cardboard Sheet

Insulating material – Place 1 sheet of corrugated cardboard over water bottles to cover them completely.


1. Conditioned Water Bottles

Conditioned frozen water bottles – Line bottom of the cooler with a single layer of conditioned water bottles.

NOTE:
This packout can maintain appropriate temperatures for up to 8 hours, but the container should not be opened or closed repeatedly.

3 Arrive at Destination

Before opening cooler – Record date, time, temperature, and your initials on vaccine temperature log.

Storage – Transfer boxes of vaccines quickly to storage refrigerator.

Troubleshooting – If there has been a temperature excursion, contact vaccine manufacturer(s) and/or your immunization program before using vaccines. Label vaccines "Do Not Use" and store at appropriate temperatures until a determination can be made.

2019 冠狀病毒並疫苗運送追蹤表

提供商必須將完成後的疫苗運送追蹤表發送至 covid19vaccine@health.ny.gov

運送日期：_____發放疫苗的提供商名稱：_____個人識別號碼：___

*發放*疫苗提供商除的聯繫人姓名：_____聯繫人電話號碼 ：_____

運送當日*發出*儲藏容器時的溫度：_____☐°C ☐°F 放入運送容器時的時間：_____☐上午☐下午

疫苗運送時的溫度*（選擇一項）*：

☐ **冷藏箱**
2°C 至 8°C (36°F 至 46°F)

- **摩德納公司、輝瑞公司和楊森公司疫苗**
- 使用便攜式冷藏箱或符合要求的容器，並在包裝中放有數字版數據記錄儀
- 避免陽光直射疫苗
- 僅運送完整無孔的藥瓶
- 運送過程中減少打擊和震動
- 在計算摩德納公司疫苗超過使用期限時加上運送時長。
- **不要再次冷凍已解凍的疫苗**

☐ **冷凍**
-25°C 至 -15°C (-13°F 至 5°F)

- **摩德納公司和輝瑞公司**
- 使用便攜式冷凍箱或符合要求的容器，並在包裝中放有數字版數據記錄儀
- 不要在乾冰或低於 -40°C (40°F) 運送摩德納公司疫苗
- 避免陽光直射疫苗
- 在輝瑞疫苗 2 週的冷凍儲藏期限中加上運送時長。
- 在冷凍情況下運送的輝瑞公司疫苗可一次性送回超冷凍儲藏環境。
- **不要再次冷凍已解凍的疫苗**

☐ **超冷凍**
-80°C 至 -60°C (-112°F 至 -76°F)

- **僅適用於輝瑞公司疫苗**
- 使用有乾冰的原始熱運輸容器，或可維持在 -80°C 的便攜式超冷凍箱
- **在超冷凍溫度下僅在完整托盤中運送輝瑞公司疫苗**
- 維持托盤的原包裝，避免疫苗受到光線照射
- 不要在馬上要解凍以前打開托盤或拿走藥瓶
- 打開包裝後要在五分鐘之內把托盤放入超冷凍儲藏環境
- **疫苗離開超冷凍儲藏環境後，必須在 120 小時（5 天）內使用**
- **不要再次冷凍已解凍的疫苗**

此次運送中的疫苗*（如有需要，請添加表單）*：

製造商	批號 #	有效日期	超過使用期限（超過使用期限）[1]	劑量數[2]	針劑順序（1 或 2）	是否維持冷鏈（是/否）[3]	說明

[1] *摩德納公司的超過使用期限為開始解凍後的 30 天。輝瑞公司疫苗的超過使用期限為開始解凍後的 120 小時（5 天）。*

[2] *2021 年 2 月 16 日以後，輝瑞公司疫苗一個藥瓶含有六機。*

[3] *若運送過程中溫度超出範圍，則馬上上報給 vaccinetempexcursion@health.ny.gov*

接收疫苗的提供方名稱（或儲藏點）：_____個人識別號碼：_____

*接收*提供方聯繫人姓名：_____聯繫人電話號碼：_____

送達接收點時間：_____☐早上☐下午

送達時運送容器溫度：_____☐°C ☐°F

運送當日*接收*儲藏容器時的溫度：_____☐°C ☐°F

運送過程中的最高溫度：_____☐°C☐°F