Preventing Administration Errors

California COVID-19 Vaccination Program

Once an error or deviation has occurred, refer to CDC's Interim Clinical Considerations (Appendix C) for next steps. Then use this guidance to prevent the administration error from occurring again. **Reminder:** An administration error is any preventable event that may cause or lead to improper use of vaccine or patient harm. To reduce errors, complete COVID-19 vaccine product training and demonstrate competency for products your site will administer. Report errors to VAERS and ISMP to help prevent future errors.

Error Type	Guidance to Prevent Administration Errors
Wrong Site or Route	**Administer COVID-19 vaccines in deltoid muscle (or anterolateral thigh) using IM injection.** • **For 6 months through 2 years:** The injection site is the vastus lateralis in the anterolateral thigh. • **For 3 years and older:** The injection site is the deltoid muscle. • If multiple vaccines are administered at a single visit, administer each injection in a different injection site. Post this anatomical illustration to help identify recommended injection sites. • For people ≥11 years, the deltoid muscle can be used for more than one intramuscular injection administered at different sites in the muscle. • For children (5–10 years), if more than two vaccines are injected in a single limb, the vastus lateralis muscle of the anterolateral thigh is the preferred site because of greater muscle mass. • An IM injection given with too short a needle is functionally a subcutaneous injection; post this reference guide and use clinical judgment to adjust needle length for patient weight and gender. • COVID-19 vaccines may be administered without regard to timing of other vaccines. If coadministering COVID-19 vaccine with routine vaccines, prepare and organize syringes to ensure products are administered in correct site and route. • Ask patient to completely expose their shoulder when administering in the deltoid muscle. Ensure vaccinators can locate upper/lower borders of a safe IM injection zone. Incorrect administration into shoulder joint instead of deltoid muscle can trigger inflammation and injury.†
Wrong Age	**Do not administer vaccine to an unauthorized age group.** • Select the correct vaccine product based on patient eligibility and age at date of vaccination.
Wrong Formulation	**Select correct vaccine formulation based on patient age at date of vaccination.** • COVID-19 vaccine dosages are based on patient age—not size or weight; administering the wrong formulation may result in a lower-than-authorized dosage and insufficient protection. • **Read vial labels carefully. Do not rely on cap colors.** Moderna 6M-5Y (MAGENTA BORDER) and 6-11Y (PURPLE BORDER) have dark blue vial caps. Pfizer 12Y+ and bivalent products have gray caps. • Vial labels for early shipments of Pfizer 6M-4Y (maroon cap) and Moderna 6-11Y (dark blue cap/PURPLE BORDER) do not correctly state currently authorized age indicators. Please refer to Pfizer | Moderna Provider Letters.)
Overdosage	**Do not administer a higher-than-authorized vaccine injection volume for primary series and additional or booster doses.**

Error Type	Guidance to Prevent Administration Errors
	• If too much vaccine is administered, dose may invoke stronger adverse effects; double check injection volume for product & dose before administration. (Report adverse events to VAERS.) • Common errors may include overdosing with 0.50 mL instead of 0.25 mL for a Moderna booster. • **Moderna 12Y+ (red cap):** Syringes in ancillary kits may require estimating between lines; private stock with appropriate markings may be used instead.
Underdosage	**Do not administer a lower-than-authorized vaccine injection volume for primary series and additional or booster doses.** • If too little vaccine is administered, dose may not provide sufficient protection; double check injection volume for product & dose before administration. • Common errors may include underdosing 0.25 mL instead of 0.50 mL for Moderna primary series, leftover vaccine in syringe, vaccine leakage (check for tight fit between needle and syringe), equipment failure (do not use bent or damaged needles) and recipient pulled away (prepare patient in advance). • Don't exceed number of doses on vial label; resulting volume may not provide sufficient protection. • **Moderna 12Y+ (red cap):** When using syringes that have tick marks at 0.2-mL intervals, use best judgment to draw up half-way between 0.24mL and 0.26mL, or use private stock with appropriate markings.
Storage at Improper Temperatures	**Do not administer vaccine that has been exposed to improper temperatures (i.e., temperature excursion).** • Administration of vaccine after a temperature excursion may require revaccination. • Monitor and record storage unit temperatures twice daily. (See sample COVID-19 log.) • Label affected vaccines DO NOT USE to prevent administration and contact manufacturer to determine if vaccines may be used. • Report temperature excursions in myCAvax daily and include excursion resolution. • If manufacturer determines vaccines may not be used, report doses as spoiled in myCAvax and discard using guidance in linked document.
Storage Beyond Expiration Date	**Do not administer expired vaccine.** • Administration of expired vaccine may require revaccination. • Double check expiration dates before preparation and administration. (See COVID-19 Vaccine Product Guide for expiration dates & their location by product.) • Rotate stock weekly to ensure vaccines soon to expire are used first; remove expired vaccine from storage units to prevent administration. • Report expired doses as "expired" in myCAvax; discard following linked guidance.
Storage Beyond "Use By" Date and Time	**Do not administer vaccine past recommended beyond-use (i.e., use-by) date/time.** • Administration of vaccine past beyond-use limits may require revaccination. • Double check beyond-use date/time before preparation and administration; however, for **Pfizer 5-11Y (orange cap) and 6M-4Y (maroon cap):** 12-hour limit in EUA Fact Sheet supersedes 6 hours printed on labels and cartons. • Storage limits before puncture vary by temperature range; apply beyond-use tracking labels to cartons when vaccine shipments are stored to ensure beyond-use limits are followed.

Error Type	Guidance to Prevent Administration Errors
	• Once vial is punctured, label vial with puncture date/time (dilution date/time for Pfizer products); use by time limit printed on vial label. • Routinely remove vaccine beyond use-by date/time from storage units to prevent administration. • Report doses beyond use-by limits as "expired" in myCAvax; discard following linked guidance.
Given Sooner than Minimum Interval	**Confirm the correct interval between doses for primary series and additional/booster doses.** • Administration at an incorrect interval may require revaccination. • Don't administer subsequent doses in a primary series or booster before its recommended interval. (A 4-day grace period prior to the recommended date is permitted.) • Refer to COVID-19 Vaccine Timing by Age for age indicators, timing of primary/booster doses, and recommendations for the immunocompromised; determine if extended dosing interval for Pfizer/Moderna/Novavax 2nd dose is appropriate. • Check My Turn, CAIR or your EHR to confirm timing of the patient's next dose. • Providers must document administration in My Turn or an EHR connected to CAIR (CAIR2/RIDE) to help reduce these administration errors. Complete the patient's Vaccination Record Card and update the card with additional/booster doses.
Incorrect Formulation (Mixed Series)	**Administer the correct mRNA COVID-19 vaccine product the appropriate dose in 2-dose or 3-dose primary series.** (See Interim Clinical Considerations.) • Check My Turn, CAIR, or your EHR to confirm vaccine product your patient previously received. • Check vial label carefully to ensure you're administering the correct product. • **For Pfizer 6M-4Y (maroon):** 3-dose primary series applies to 6M-4Y or for immunocompromised. • **For those moderately or severely immunocompromised:** Refer to COVID-19 Vaccine Timing Guide to determine if a third primary dose is recommended.
Incorrect Dilution Product	**Reconstitute Pfizer COVID-19 pediatric vaccine products correctly.** • **Do not dilute Comirnaty (gray cap) formulation.** • Double check vaccine and diluent labels before reconstituting vaccine. • ONLY use sterile 0.9% Sodium Chloride Injection, USP for diluent. • Record dilution date/time on vial label. • To prevent a higher-than-authorized dose, ensure diluent is used. • If feasible based on time frame for vaccine stability at room temperature, dedicate a team to dispense prefilled, labeled syringes of the vaccine for daily vaccination clinics. Consider an independent double check of the dilution process.† • **Pfizer 5 Years of Age and Older**: See Vaccine Dosage Chart for manufacturer guidance by dose.
Incorrect Dilution Volume	**Reconstitute Pfizer COVID-19 vaccine products with the correct diluent volume.** • Double check diluent volume; if too much is added, doses may not provide sufficient protection. • Diluent volume for **Pfizer 6M-4Y (maroon cap)** 2.2 mL/vial; **Pfizer 5-11Y (orange cap)** 1.3mL/vial; **Pfizer 12Y+ (purple cap)**: 1.8 mL/vial. • Pfizer recommends use of syringes with appropriate graduations to dilute with the directed 1.3 mL of saline. Using syringes with 0.2 mL graduations and estimating the volume will not significantly impact intended dose. • Use one diluent vial to dilute one vaccine vial; discard the remainder of the diluent in the vial. • **Pfizer 5 Years of Age and Older**: See Vaccine Dosage Chart for manufacturer guidance by dose.

† Top 10 Errors Related to COVID-19 Vaccination; published June 28, 2021; accessed online November 9, 2021.