

Drugs for pediatric emergencies: Report updates list, indications, dosages

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An infant presents to a rural hospital emergency department (ED) in respiratory failure. The physician must perform rapid sequence intubation but has difficulty determining which medications and doses to use.

An updated AAP clinical report aims to educate health care professionals on medications used to treat pediatric emergencies in the ED as well as in prehospital, clinic and disaster settings. The report, *Drugs Used to Treat Pediatric Emergencies*, is available at <https://doi.org/10.1542/peds.2019-3450> and will be published in the January issue of *Pediatrics*.

Changes in the scope of practice, drug dosing and indications, availability of new drugs and formulations, and discontinuation of older pharmacotherapeutic agents necessitated this revision from the Committee on Drugs and the Committee on Pediatric Emergency Medicine.

Emergencies occur in varied settings

Most children with medical emergencies are treated in the prehospital setting, physician offices or ED.

While emergency medical services provide the bulk of out-of-hospital pediatric emergency care, children with medical emergencies often go to the ED for treatment. Children constitute about a quarter of all annual ED visits in the U.S., yet only a third of these emergency pediatric visits occur in children's hospitals.

Medical emergencies also may occur as often as once or more a week in pediatricians' offices.

Given that pediatric emergencies span the prehospital, ambulatory, emergency and critical care settings, health providers across this spectrum have an important role in stabilizing and treating critically ill and injured children.

Tables list drugs by indication

Pharmacotherapy is a key component of emergency management. In a medical emergency, providers need to access clinically relevant drug information rapidly.

The report consists of 16 tables that list the drugs used to treat pediatric emergencies based on organ system or clinical context. Drugs may appear more than once if they have multiple indications. Though the list is not inclusive, it is a useful resource to treat the vast majority of pediatric emergencies.

The drug information includes its formulation(s), dosage based on mode of delivery, side effect profile and safety considerations.

The indications, dosage recommendations and supporting information are consistent with emergency references such as *The Advanced Pediatric Life Support (APLS)* and *Pediatric Advanced Life Support (PALS)* textbooks and American Heart Association resuscitation guidelines. Information also has been added from consensus guidelines, technical reports, clinical reports and standard pediatric reference textbooks.

The format for dosages is consistent with AAP recommendations for reducing medication errors. Dosing of drugs based on newer modes of drug delivery such as intranasal and intra-buccal routes (e.g., for sedation, analgesia and treatment of seizures) also has been added.

The provider is urged to base all drug dosing on the patient's weight in kilograms. The use of weight-based medication cards or length-based resuscitation tapes also is recommended.

The choice and selection of drug will depend on patient characteristics, coexisting problems, drug hypersensitivity history, concurrently administered medications and drug availability.

In the case described above, the emergency physician used a length-based resuscitation tape to calculate the metric doses of medications needed for the rapid sequence intubation using an up-to-date resource on pediatric emergencies. The tracheal intubation was successful, and the child made a rapid recovery.

Dr. Sheno is a lead author of the clinical report and a member of the AAP Committee on Drugs.