



Drugs for the doctor's bag

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Summary

The doctor's bag should contain drugs for medical emergencies that may occur in the community. Most of these drugs are provided under the Pharmaceutical Benefits Scheme and can be ordered free of charge through a pharmacist. General practice accreditation now requires that clinics have appropriate emergency drugs as well as oxygen and a bag-valve-mask system. Practices should also have an up-to-date logbook detailing the emergency drug stocks and a system for checking that the drugs have not expired.

Key words: medical emergencies, Pharmaceutical Benefits Scheme.

(*Aust Prescr* 2007;30:143–6)

Introduction

Traditionally the doctor's bag contains drugs and equipment for managing medical emergencies that present in the clinic or in the community.^{1,2,3} The frequency and type of emergencies that occur depend on the location and nature of the practice. With the increasing availability of skilled Mobile Intensive Care Ambulance (MICA) paramedics as 'first responders', many general practitioners have become less involved in managing emergencies. However, in rural and remote areas the doctor will often be the 'first responder' and may be working with volunteer ambulance crews.

What to carry

Doctors should consider the medical emergencies that they may encounter in their practice and select appropriate drugs for their doctor's bag (Table 1). Many of these drugs are provided under the Pharmaceutical Benefits Scheme (PBS) as Emergency drug (Doctor's bag) supplies.⁴ Most of them are injectable. However, there are some non-injectable drugs which are useful in emergencies, such as soluble aspirin, glyceryl trinitrate (sublingual spray) and salbutamol aerosol.

Doctors can submit a monthly order form* to a pharmacist for the supply of PBS doctor's bag emergency drugs at no cost. Some PBS drugs are supplied as paired alternatives. These include hydrocortisone or dexamethasone and metoclopramide or prochlorperazine. A group practice can have all of these drugs

available if doctors agree to order one or other item in each pair. A drug can only be requested if the doctor holds less than the maximum quantity provided under the PBS, or to replace date-expired drugs.

Some drugs which are useful for emergencies are not provided under the PBS (Table 1). Doctors may obtain these as private items by submitting a written order to a pharmacist. These drugs include:

- oral drugs such as aspirin, analgesics, diazepam, antibiotics, prednisolone
- non-steroidal anti-inflammatory drugs (NSAIDs) for rectal or intramuscular use
- glucose 50%
- ceftriaxone
- midazolam
- ergometrine.

It is also useful to carry at least one 1 L bag of normal saline, and a supply of normal saline and water for injections.

Current practice guidelines

Emergency drugs available through the PBS sometimes differ from those recommended by Australian treatment guidelines. For example, the use of parenteral chlorpromazine is not recommended by the Therapeutic Guidelines because it can cause serious hypotension. Instead, oral preparations of risperidone, olanzapine or haloperidol are recommended for behavioural emergencies if oral diazepam is not effective.⁵ Only injectable forms of diazepam and haloperidol are provided as emergency drugs by the PBS.

Lignocaine is a PBS doctor's bag item. However, other treatments for sustained ventricular tachycardia may be preferred.⁵

Precautions with emergency drugs

With sedating drugs, there is a risk of death from respiratory depression, especially when given intravenously. It is therefore important to keep the patient under observation after administration of these drugs.

Pethidine is no longer supplied as a doctor's bag item.⁶ Instead, an injectable form of tramadol is now available through the PBS. Tramadol should not be used in patients taking a serotonergic antidepressant because of the risk of serotonin syndrome.

Doctors should be aware that ketorolac should not be given to patients with renal impairment.

* Order forms are obtainable from Medicare Australia, phone 13 22 90.

Table 1

Useful drugs for the doctor's bag

Drug (form)	Indications	Contraindications	Cautions
Adrenaline (1 mg in 1 mL injection)	Cardiac arrest, anaphylaxis ⁷	None in cardiac arrest or anaphylaxis	May cause arrhythmia and myocardial or cerebrovascular ischaemia
† Aspirin, soluble, 300 mg tablet	Acute coronary syndrome, migraine	Peptic ulcer, bleeding disorders	None
Atropine sulfate (600 microgram in 1 mL injection)	Bradycardia, asystole	None in cardiac arrest or hypotensive bradycardia	May cause tachycardia, confusion and nausea
Benztropine mesylate (2 mg in 2 mL injection)	Acute dystonic reactions	Children < 3 years	May cause tachycardia and confusion
Benzympenicillin (600 mg or 3 g of powder)	Severe infections (meningococcaemia, pneumonia, septicaemia)	Allergy	None
† Ceftriaxone (2 g powder)	Severe infections (meningococcaemia, pneumonia, septicaemia)	Allergy	None
Dexamethasone sodium phosphate (4 mg in 1 mL injection)	Acute allergic reactions (anaphylaxis, severe asthma), severe croup, acute Addisonian crisis. Palliative care emergencies ⁸	None in emergency	None
Diazepam (10 mg in 2 mL injection)	Acute anxiety, convulsions (can be given rectally)	Cardiorespiratory failure, CNS depression	May cause drowsiness, confusion and respiratory depression
Dihydroergotamine mesylate (1 mg in 1 mL injection)	Migraine	Hemiplegic migraine, use of sumatriptan	Vasospasm syndromes can occur but are rare
Diphtheria and tetanus vaccine (0.5 mL injection)	Tetanus and diphtheria prophylaxis following injury	Children < 8 years	May cause pain and swelling locally and fever and malaise
† Ergometrine maleate (500 microgram in 1 mL)	Postpartum haemorrhage and incomplete abortion	Threatened abortion, severe hypertension	May cause hypertension, headache and nausea
Furosemide (20 mg in 2 mL injection)	Acute pulmonary oedema	Sulfonamide allergy	None
Glucagon hydrochloride (1 mg in 1 mL injection)	Hypoglycaemia	None	None
† Glucose 50% (500 mg/mL in 50 mL)	Hypoglycaemia	Diabetic coma	May cause phlebitis
Glyceryl trinitrate (400 microgram dose per spray)	Acute coronary syndrome, angina, acute pulmonary oedema	Cardiogenic shock (SBP < 90 mmHg)	May cause headache and hypotension
Haloperidol (5 mg in 1 mL injection)	Acute psychosis, acute mania, nausea and vomiting	Cardiovascular collapse and CNS depression	May cause extrapyramidal symptoms, confusion and hypotension
Hydrocortisone sodium succinate (100 mg or 250 mg in 2 mL injection)	Anaphylaxis, severe asthma	None in emergency	None

Drug (form)	Indications	Contraindications	Cautions
† Ketorolac (10 mg in 1 mL injection)	Pain	Renal impairment, anticoagulation, asthma, treatment with probenecid	May cause nausea
Metoclopramide hydrochloride (10 mg in 2 mL injection)	Nausea and vomiting, migraine	Acute complete bowel obstruction	Extrapyramidal symptoms with increased risk of dystonic reactions in children
† Midazolam (5 mg in 1 mL or 15 mg in 3 mL injection)	Convulsions, severe agitation	Cardiorespiratory failure and CNS depression	May cause drowsiness, confusion and respiratory depression
Morphine sulphate (15 mg or 30 mg in 1 mL injection)	Severe pain, acute coronary syndrome, acute pulmonary oedema	Respiratory or CNS depression. Avoid using in infants.	May cause sedation, nausea and vomiting
Naloxone hydrochloride (2 mg in 5 mL)	Opioid-induced respiratory depression	None	People with opioid dependence may experience acute withdrawal syndrome
Procaine penicillin (1.5 g for injection)	Severe infections (meningococcaemia, pneumonia, septicaemia)	Allergy	None
Prochlorperazine (12.5 mg in 1 mL)	Nausea and vomiting, vertigo	Circulatory collapse and CNS depression	May cause drowsiness and extrapyramidal symptoms
Promethazine hydrochloride (50 mg in 2 mL injection)	Nausea and vomiting, allergic reactions	Children < 2 years (except on advice)	May cause drowsiness
Salbutamol sulfate (inhaler 100 microgram/dose or nebuliser solution 2.5 mg or 5 mg in 2.5 mL)	Asthma, bronchospasm	None	May cause tachycardia or tremor
Tramadol hydrochloride (100 mg in 2 mL injection)	Pain	Children, treatment with serotonergic antidepressants or MAOIs, respiratory or CNS depression	May cause nausea, vomiting and dizziness
Verapamil hydrochloride (5 mg in 2 mL injection)	Supraventricular tachycardia	Cardiogenic shock, heart block, hypotension, use of beta blockers and some SSRIs	May cause nausea, heart block, bradycardia and hypotension

† Not supplied under PBS doctor's bag emergency drugs

CNS central nervous system

SBP systolic blood pressure

MAOI monoamine oxidase inhibitor

SSRI selective serotonin reuptake inhibitor

Oxygen

Oxygen cylinders can be rented and refilled from a medical gas supplier (for example BOC (British Oxygen Corporation)). A 490 L (size C) will last for 55 minutes at 8 L/min. Use high-flow oxygen with caution in patients at high risk of carbon dioxide retention.

Storage of drugs

Drugs must be stored in a locked bag or a locked cupboard at below 25° C. Doctor's bags should not be left in cars where

the temperature will easily exceed 25° C on even a mild day.

Diphtheria and tetanus vaccine is stored in a refrigerator.

A register is required to log drugs received and drugs used (including the recipient's name). Schedule 8 drugs (opioids) must be stored in a locked, fixed, steel safe, although ampoules may be put in a locked bag for use away from the clinic. A separate book (available from the Royal Australian College of General Practitioners) is required to log Schedule 8 drugs that are received and used.

General practice accreditation

To meet accreditation standards, general practices must have oxygen, a bag-valve-mask system, and appropriate emergency drugs. All general practitioners must have access to a doctor's bag (which may be shared between two or more general practitioners). There should be a system for checking emergency drug stocks and expiry dates – for example, a monthly inventory by a practice nurse. Doctor's bags should have a sharps container, disposable gloves, and dressing packs. Safety intravenous cannulas and needleless systems reduce the risk of needlestick injury.³

Conclusion

Appropriate drugs in the doctor's bag are an essential part of general practice. The contents of the bag will be tailored to suit the needs of each practice.

References

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Further reading

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Conflict of interest: none declared

Dental notes

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Drugs for the doctor's bag

Dentists do not need to stock as many emergency drugs as general practitioners, however we are required to have fully equipped and well maintained emergency equipment in our surgery.

As stated in the recently published Therapeutic Guidelines: Oral and Dental¹, the minimum requirements for emergency situations in the dental surgery are oxygen, a disposable airway, and adrenaline. For dental practices performing more extensive procedures, or with an increased proportion of medically compromised patients, then more equipment and medications are required.

Medical emergencies in dental surgeries are uncommon so there is a risk that medications will expire before they are needed. It is incumbent on dentists to ensure that the drugs in their emergency equipment are not out of date. Ideally, there should be a system for checking emergency drug stocks and expiry dates, perhaps by a monthly inventory. Many dental practices probably already have such an inventory and it can be easily foreseen that such documentation may well become part of any potential practice audit.

Emergency drugs are not available under the Pharmaceutical Benefits Scheme for dentists and must be purchased at full cost. This anomaly should be redressed.

Reference

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