

The Ten Commandments of emergency airway management for the rural physician

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For most of us, airway management skills are needed infrequently, but when they are needed they are needed urgently and are potentially lifesaving. Roadblocks remain: the necessary skills are highly technical and relatively rarely used. Most of us have little chance to practise between critical cases. Patients may arrive with little or no advance warning and leave us no time to mobilize staff or extra help. Much of the literature and algorithms for airway management are aimed at the urban anesthesiologist or emergency room physician and are not as applicable to rural physicians. This paper presents an overall game plan and algorithm for emergency airway management by rural physicians.

Game Plan

Always remember: for infrequently used skills, keep things simple ([Table 1](#)). Even a small partial airway may be enough to keep your patient alive and avoid hypoxic brain damage until more help can be mobilized.

1. Have an organized game plan.

Know what things to do first, what to do if your plan works and what to do if it doesn't. Fig. 1 (not available online, please refer to print copy) shows a suitable algorithm for handling patients who need emergency airway management.¹

2. Remain calm.

These patients are always stressful for a rural physician to handle. We cannot have specialist-level skills in everything. All we can do for our patients is our very best. Sometimes even that will not be good enough.

3. First use bag-mask ventilation.

The first priority is always to use bag-mask ventilation with the patient's head positioned properly. If you are the most skilled person present, consider performing this vital procedure yourself until more help can be mobilized. Bag-mask ventilation is the vital skill in emergency airway management. It is your constant back-up and "rescue strategy." If bag-mask ventilation is adequately oxygenating your patient, don't rush to intubate. Not everyone with an airway or breathing problem needs to be intubated. Get your thoughts together, prepare your equipment and get an assistant if possible.

Within our role as rural physicians, the common indications for intubation are as follows:

- The patient will require ventilatory support, with a bag mask or mechanical ventilator, for more than a very short period.
- The patient is in a coma (usually with Glasgow Coma Scale score less than 8) due to drug overdose, metabolic disorder or trauma.
- To keep the airway open, when there has been facial trauma, burn injury or bleeding into the airway.
- To allow personnel to move on to other critical tasks in a marginal or critical situation, and to guarantee airway control during a transfer.

In a large American urban study,² the most common diagnoses in patients requiring emergency room intubations were: blunt trauma 38.0%, drug overdose or "altered mental status, not specified" 16.9%, cardiac arrest 19.9%, penetrating wounds 91.7% and seizures 5.6%.

4. Call for help early.

Call for help early before the situation deteriorates. Get an assistant to help you if possible. There's a lot to do.

5. If you can't ventilate: intubate.

If you can't ventilate the patient properly with a bag mask then intubate. If, for whatever reason, you are not getting proper ventilation with the bag mask, the next step is an endotracheal intubation.

6. Keep track of time.

Have your assistant tap you on the shoulder 30 seconds after you have begun attempting intubation. That adrenalin rush distorts our sense of time and gives us tunnel vision. If you haven't been successful, go back to bag-mask ventilation (your "rescue strategy") and again, get your thoughts together on what your next step will be.

7. If at first you don't succeed: try again.

If your first intubation attempt does not work, try a second time. Think about what you can do differently. A large urban emergency room review of 610 intubations found that emergency room physicians were able to intubate 81.4% of the patients on the first attempt and 13.3% on the second attempt.²

If you decide to make a second attempt, don't use the identical technique. It won't work any better. On the second attempt change something.³

- Reassess and possibly change the position of the head.
- Get an assistant to steady the head.
- Get an assistant to apply gentle cricothyroid pressure.
- Try using a smaller endotracheal tube.
- Use an intubation aid such as a stylet or light wand ([Fig. 2](#)).

8. If you can't intubate: ventilate.

If you cannot intubate on 2 tries, further attempts are probably futile. A more experienced intubator may have better luck. Go back to the bag mask, your "rescue strategy," and try to oxygenate this way.

9. If you can't ventilate with a bag mask and can't intubate: open the neck.

If you can't get enough ventilation with a bag mask and can't get an endotracheal tube in, you are — to put it mildly — in big-league trouble. You may have to "open the patient's neck." In one large study,² cricothyrotomy was required in 1% of all patients requiring the emergency establishment of an airway, most of them trauma victims, giving an overall rate of 2% for trauma patients ([Fig. 3](#)).

Other methods for handling the "can't ventilate, then intubate" scenario include the Combitube (Kendal Sheridan Catheter Corp., Argyle, NY) ([Fig. 4](#)) or "Jet-Air" ventilation ([Fig. 5](#)).^{4,5} The Combitube is a reasonable choice, especially in the nontrauma situation, where there is no anatomic damage to the airway, for example, a drug overdose. Although not in common use in rural areas, the laryngeal mask may be acceptable ([Fig. 6](#)), although trauma with the consequent risk of aspiration is listed as a relative contraindication.³ The mask can be easily applied and is unlikely to cause further damage.

10. Practise whenever you can. These are perishable skills.

Practise on mannequins, review the books and Web sites⁶ and accompany an anesthesiologist in the operating room if you have a chance: the time to learn how your equipment works is not in the middle of an airway emergency! Also be sure that your emergency room has the proper equipment instantly available, including a "survival kit" ([Table 2](#)).

To summarize.

IF YOU CAN'T VENTILATE: INTUBATE.

IF YOU CAN'T INTUBATE: VENTILATE.

IF YOU CAN'T INTUBATE, CAN'T VENTILATE: OPEN THE NECK.

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