Southeast Arizona EMS Region

Standing Order Training Module

Hypoglycemia

January 2005

PURPOSE

This SAEMS Standing Order Training Module has been developed to serve as a template for EMS provider training. The intent is to provide consistent and concise information to all providers practicing within the SAEMS Region. The content of the Training Module has been developed by the Protocol Development and Review Committee, and includes the specific Standing Order, resource and reference material, and instructions for completing the Training Module to obtain continuing education credit. One hour of SAEMS continuing education credit may be issued following successful completion of the module.

OBJECTIVES: Upon completion of this learning module the participant will be able to:

1. Discuss the role of medical direction related to the use of Standing Orders.
2. List three benefits of Standing Orders.
3. Outline inclusion and exclusion criteria for this Standing Order.
4. Describe the communication process between the field and the receiving facility when a Standing Order is implemented.
5. List the elements of the dispatch radio relay.
6. List two reasons for direct facility (on-line) contact following implementation of a Standing Order.

INSTRUCTIONS:

1. Read the accompanying information, Standing Order, and any additional reference material as necessary.
2. Complete the attached Posttest by _____, and return with self addressed envelope to:

   _____

   _____

   _____

3. A SAEMS CE Form will be issued to providers scoring greater than ____% on the Posttest.
4. Please contact _____ for questions, suggestions, concerns.

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Resource Material

OVERVIEW

The EMS system in Tucson has traditionally operated under direct medical control, requiring early radio contact with a base hospital physician on all prehospital encounters. The concept of Standing Orders developed as a natural evolution of a busy EMS system. SAEMS implemented Standing Orders in 1998, with the intent of reducing the amount of time required for radio contact while maintaining or improving the level of patient care provided in the community. The regional Base Hospital Medical Directors approved each Standing Order and granted authority for providers to assess and treat select patients *without* on-line medical direction. The potential benefits of a Standing Order (off-line) system include a shorter on-scene time, more appropriate treatment decisions, more time to interact with the patient, and broader consistency in care.

Providers practicing in the SAEMS region are governed not only by their Scope of Practice, but also by Protocols, Minimum Treatment Standards, and Standing Orders. There are a number of SAEMS *Administrative* Protocols outlining responsibilities for such things as approved documentation abbreviations, infectious disease exposure notification, and select patient triage parameters. The *Advanced Training* Protocols list those skills requiring additional training and medical director approval; for example, automatic transport ventilators and central line insertion.

Minimum Treatment Standards are an algorithmic flow of basic standards of care for various patient care situations. They outline, at a minimum, the assessment and treatment considerations for BLS and ALS providers, and are available should communication attempts for on-line medical direction fail.

Standing Orders differ from Protocols and Minimum Treatment Standards in that there is no required contact with a medical direction authority for orders. The physician orders are outlined on each Standing Order document. They are the legal equivalent of a radio transmitted, on-line order from a medical direction authority. For this reason, they do not allow for any deviation: orders must be followed sequentially and precisely. They are not guidelines or suggested interventions.

DEFINITIONS

- **Protocols** - Guidelines for prehospital care ranging from administrative to procedural.
- **Minimum Treatment Standards –** Algorithm for minimum standard of care guidelines for patient care situations.
- **Standing Orders** – Specific interventions which may be undertaken in lieu of contacting on-line medical direction.
- **On-Line Medical Direction** - Medical direction of prehospital activities by direct radio or telephonic communications with a medical direction authority.
- **Medical Direction Authority** – An administrative medical director or an on-line medical direction physician.
- **MEDS (dispatch) Communication Relay** – Essential information relayed from the field to the receiving facility via dispatch regarding a Standing Order patient.

DOCUMENTATION

Quality prehospital care can be achieved following adequate education and training, accurate patient assessment, skilled procedure intervention, use of good judgment, and continuous quality improvement. Documentation is essential to validate quality care. Reports should allow others to understand and follow the providers' decision-making process, particularly when Standing Orders are implemented, as the prehospital care report will often be the sole document describing the call.

There are key components to the written report when Standing Orders are utilized. Thorough documentation of an adequate assessment is essential. Reference to inclusion and exclusion criteria is recommended, with attention also paid to pertinent negatives. It should be clear why the particular Standing Order was chosen. Implementation and response to interventions is also a critical part of the prehospital report. Independent, off-line practice often requires additional responsibility on the part of the provider when it comes to judgment and documentation.

COMMUNICATION

All standing orders require the following information be provided to dispatch and relayed to the receiving facility: specific standing order used, age, sex, and ETA. Additional information may be required as follows:

1. Acute Anaphylaxis/Stable Allergic Reaction	Stable/Unstable
2. Acute Pulmonary Edema	
3. Asthma/COPD	
4. Cardiac Arrest	
5. Chest Pain	12-Lead sent?
6. Dead on Scene	**No hospital relay**
7. Hypoglycemia	
8. Minor Medical	Chief complaint ("Sick Person" not acceptable)
9. Motor Vehicle Crash	**No hospital relay**
10. Pain Management	Chief complaint (mechanism of injury)
11. Seizures	BLS or ALS
12. Stroke/TIA	Symptom onset, patient weight
13. Unconscious/Unresponsive	

There is no need for a dual patch on standing order patients going to a non-medical direction authority facility (VA, HCH, or UPH), as the physician orders are already provided. Receiving facilities must be familiar with each standing order to best anticipate and prepare for the patient's arrival. Standing Orders are not intended for use during interfacility transfers, nor are they appropriate for use on pregnant patients. Check with your medical direction authority for recommendations regarding the use of Standing Orders during scene transfers greater than 30 minutes. Also check with your medical direction authority for a list of those Standing Orders approved for *your* use.

NEVER HESITATE TO CONTACT MEDICAL DIRECTION FOR ANY PROBLEM, QUESTION, OR CHANGE IN STATUS!

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Hypoglycemia

Post Test

Name: _____ Date: _____

Scenario: You respond to a 17 year old male who is at a party at a friend's home. He is awake, slurring his speech, and acting confused. He is pale, cool, and diaphoretic. Pt's friend states pt. had a beer or two, and had 1-2 emesis before EMS arrival.

1. Immediate **supportive** care includes the following:
   a. History, assessment, mechanism of injury
   b. Take vital signs, apply oxygen
   c. Neuro exam, check with friends if he has been drinking ETOH
   d. Cardiac monitor, FSBS, Oxygen to keep O2 Sat. more than 90%

2. Friends of the patient state "he takes some kind of shot", but they don't know what it's for. You have determined that the FSBS is 52. Does this patient meet Hypoglycemia Standing Orders?

   a. True
   b. False

3. Oral glucose gel may be administered to a patient if the following conditions are met:

   a. Pt. is awake, combative, talking incoherently
   b. Pt. is hypotensive, drooling, and has a decreased LOC
   c. Pt. is alert, has a gag reflex, and is able to swallow
   d. Pt. is conscious, not able to swallow, drowsy

4. After administering 1 amp of D50 IVP, the patient (as mentioned in scenario above) responds to questions appropriately. This patient now wants to refuse transport. The blood glucose is 110. This patient should be permitted to refuse.

   a. True
   b. False

5 What is the time interval for the onset of oral glucose:

   a. 10 to 20 minutes
   b. Rapid
   c. 20 to 30 minutes
   d. Onset is more rapid when given rectally

6. You respond to a 44 year old female with a decreased LOC and a FSBS of 47. You initiated an IV of NS and gave 1 amp of D50. Cardiac monitor reveals ST at a rate of 114. Pt becomes unresponsive. Pox: 97% room air, BP 152/90. What action/s will you now take:

    a. Initiate Unconscious/Unresponsive Standing Order
    b. Call for medical direction, repeat FSBS, obtain more pt. history
    c. Wait until you arrive at hospital to convey unresponsiveness, because you have a short ETA
    d. Give 0.5-2.0 mg. Narcan IVP, titrate to effect

7. You are unable to start an IV on an unresponsive patient in order to give D50 under the Hypoglycemic Standing Order. What action will you now consider:

    a. Wait until you get to the hospital to get IV initiated
    b. Consider thiamine IVP if the patient is unconscious
    c. Consider glucagon 1 mg. IM
    d. Consider D25 IM

8. Glucagon is usually ineffective in a patient with the following conditions:

    a. Chronic alcoholism, liver disease
    b. Pancreatitis, anemia
    c. Chronic renal disease, low potassium
    d. Ulcerative colitis, diverticulitis

9. Components of the patient history most important in care of the diabetic patient include:

    a. All medications, last visit to physician, date of last "flu" shot
    b. Onset of symptoms, type of insulin or hypoglycemic agent, food intake, predisposing factors
    c. Last use of insulin or hypoglycemic agent, if patient is thinking of refusing transport to hospital
    d. Allergy to medications, last FSBS, change in medication

10. Age limit for the use of Hypoglycemia Standing Orders

    a. 18-70
    b. Greater than 16 years of age
    c. No age limit
    d. None of the above

Hypoglycemia FAQS

25% of diabetics have at least one episode of disabling hypoglycemia per year (coma, seizure, confusion). Most often due to long-acting insulin or oral agents. Due to the meds, not the disease.

Two types of symptoms:

Adrenergic-blood sugar less than 60, weakness, tremor, sweating, nausea, hunger, irritability, tachycardia, tingling

Neurologic- blood sugar less than 50, confusion, amnesia, coma, seizure, focal neurological symptoms, visual symptoms.

Some diabetics (especially Type1) lose their ability to mount an epinephrine and glucagons response. People on Beta Blockers (eg. metoprolol, atenolol) also have a relative reduction in this response.

What are the long-term complications of diabetes mellitus?

Blindness, renal failure, peripheral vascular disease, heart disease, strokes. Tight control of blood glucose is the only prevention. Blood glucose levels over 160 are toxic to tissue.

Medications

Oral hypoglycemics: work by increasing insulin secretion, decreasing hepatic glucose production, or decreasing insulin resistance.
-glyburide, glipzide (glucotrol), chloropamide, Amaryl, tolbutamide are all sulfonylureas- long acting (24-36 hours of hypoglycemia)
-Metformin is Glucophage, and is short-acting

Insulin:

short-acting: regular or Humalog or Novalog	duration: 3-6 hours
intermediate: Lente, NPH	duration: 12-16 hours
long-acting: Ultralente, Lantus	duration: 20-24 hours

Oral glucose, IV glucose, Glucagon

Oral glucose gel provides 15 grams glucose
Orange juice (8 oz) is equivalent to 1 amp D50 (150 mg/dL)
For peds, give D25 2-4 cc/kg IV, or .5 mg glucagon IM
For adults in whom IV access is unavailable, give glucagon 1.0 mg IM

Reassessment of hypoglycemic patient post treatment

Questions to ask:

Have you been eating?
Did you change your routine (food, exercise, medications)?
When was the last time you had an episode of hypoglycemia?
What medications are you on for your diabetes?
Do you have liver or kidney disease?
Can you eat now?

Bibliography

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