ASTHMA (Reactive Airway Disease with or without wheezing)
ACUTE EXACERBATION

30 Second Review **Breathing Problem/Asthma**
RN, LPN

Subjective: Patient noticeably working to breathe

Objective: Rapid breathing, struggling to breathe, reduced airflow and air exchange.
Decreased Peak Flow.
Decreased Sa02, a late finding, increases concern for severity.

RX:
1) Bronchodilator by Nebulizer (Alupent, Proventil, Ventolin) at frequent every 15-30 minutes) intervals.
2) Re-evaluate frequently.
3) If patient not responding–Bronchodilator inhalations to continue, and add Epinephrine 0.5 cc of 1:1000 SQ. Transport to ER.

SKILL LEVEL: RN, LPN

DEFINITION: Asthma is a lung disease with characteristics of intermittent reversible airway narrowing or obstruction and airway inflammation. Sometimes patients get worse quickly in response to a variety of stimuli (often allergens).

DATA BASE:

History:

1. Symptoms

- Cough
- Dyspnea
- Wheezing (not all asthmatics wheeze, not all wheezing is asthma)

2. Ask About:

- Duration and onset of current exacerbation.
- Current medication usage and compliance, especially usage of rescue inhaler.
- Any suspected precipitating causes.
- Past history and severity of attacks (especially hospitalization and intubation).
- Other complicating medical conditions, e.g., diabetes, cardiac disease, immune compromised, chronic steroid use.

Asthma

Objective: First, evaluate the patient's initial status. Status will be Extreme, Severe, Moderate or Mild, based on the evaluation. The treatment goal is to see improvement in this patient to Mild or Moderate status with treatment. The treatment pattern is one of circular assessment, treatment, assessment, treatment, until the patient has stabilized or been transported.

Use these criteria:

1. Respiratory Rate
2. Respiratory Effort: no effort, or labored, or accessory muscle use
3. Patient ability or inability to speak because of dyspnea
4. Peak Expiratory Flow Rate (PEFR) by Peak Flow Meter (TECHNIQUE IS KEY-Do not use PEFR as your primary criteria if you suspect the patient's technique is poor). PEFR is an absolute number but take into consideration what the predicted or baseline measurement is.
5. Oximetry (sA02) if available
6. BP and Pulse
7. Wheezing or diminished breath sounds.

Note: SOME PATIENTS WITH SEVERE ASTHMA DO NOT WHEEZE

Important—Danger Signs—initiate transport immediately

1. Initial status evaluation Extreme.
2. Unstable Vital Signs, especially BP under 80 systolic or suspected Unstable Angina or Myocardial Infarction.
3. Worsened or worsening mental status.
4. Developing cyanosis or Sa02 under 85% with treatment.
5. Dyspnea prevents patient from speaking.
6. Worsening condition/level of response despite aggressive treatment.

Initial Assessment: Asthma Exacerbation (Extreme, Severe, Moderate or Mild)

STATUS:

1. **Extreme** (Impending Respiratory Failure)
   Assessment

   - PEFR $\leq$ 25% of baseline or expected
   - Resp Rate over 30
   - Pulse over 120
   - Marked dyspnea at rest
   - Severe wheezing or silent chest
   - Marked accessory respiratory muscle usage

2. **Severe**
   Assessment

   - PEFR 25%-50% of baseline or expected
   - Resp Rate over 20
   - Pulse over 100
   - Dyspnea persists
   - Marked or diffuse wheezing
   - Patient fatigue

3. **Moderate**
   Assessment

   - PEFR 50%-70% of baseline or expected
   - Resp. < 18/min
   - No dyspnea at rest
   - Minimal wheezing
   - Recurrent need in same week

4. **Mild**
   Assessment

   - PEFR ≥ 70% of baseline or expected
   - Vital signs WNL
   - No Dyspnea
   - No or minimal wheezing
   - Has not required other intervention during prior week

Plan: Start treatment, then re-evaluate patient. The overall pattern is a circular treatment/assessment/treatment/assessment pattern until the patient is improved. **The eventual goal of treatment is for patient to reach and maintain 70% of expected or baseline PEFR, and/or evaluation Status of Mild or Moderate.**

Treatment:

1. Medication as appropriate:

   Unit Dose of Inhaled Beta 2 agonist bronchodilator by Nebulizer STAT, then every 15-30 minutes as needed. (Usually Albuterol is available but, Alupent, Isoprotenerol, and others may also be used.) For Nebulizer Treatments, follow instructions for standard Unit dosing, mixing the inhalation solution in normal saline.

   Metered dose inhaler may be used if Nebulizer treatment is not readily available. Dose 4 full puffs every 5-15 minutes as needed (use a spacer or be sure proper inhaler technique is used).

2. Consider supplemental O2 by nasal cannula at 4-8 L/min for: hypoxemic or cyanotic patients; patients with PEFR ≤ 40%; patients with CAD.

   Remember that rarely, over-using oxygen can be toxic, but Oxygen should not be withheld if it is needed.

   Alert: Asthma patients may rapidly worsen. Deterioration downward from one status level to a lower status level should initiate immediate Medical Provider contact and/or initiation of transport to an emergency facility.

Assessment:

1. Initial Status is **Extreme,** and patient has not dramatically responded to treatment by rapid improvement in status level, transport patient to emergency facility. May give Epinephrine 0.5cc SQ and contact provider while waiting for transport.

2. If Initial Status is **Severe**, give 1-4 Beta agonist treatments over the course of one (1) hour maximum. Keep in the health services area. If no improvement is seen, contact the medical provider STAT. Prepare patient to transport.

3. If Initial Status is **Moderate,** give 1-2 Beta agonist treatments over the course of one (1) hour. If improvement to **Mild** status is achieved, see 4 below. If no improvement, contact the medical provider STAT.

4. If Initial Status is **Mild,** give patient Albuterol Inhaler to use 2-4 puffs QID/prn if patient does not have supply. Continue/educate patients on chronic meds. Nurse to recheck in two hours and again the following morning. Patient may return to general population. Consider provider visit.

   If improvement to **Mild** or **Moderate** status is achieved, see 3 or 4 above.

   If no improvement is seen, contact the medical provider STAT. Other, more aggressive methods of treatment including IV meds, continuous Beta agonist treatment, tapered oral steroids, Ipatropium Bromide, etc. can be considered. The patient may need to be transported to an emergency facility (or may use infirmary if appropriate) if improvement is not seen.

   Consider giving Epinephrine 0.5cc SQ/prn while waiting for provider contact. If Epinephrine is given, assure availability of ongoing monitoring and emergency transport.

5. If the patient's clinical status is worsening, initiate immediate Medical Provider contact and/or initiate transport to an emergency facility.

   Alert: Asthma patients may rapidly worsen. Deterioration downward from one status level to a lower status level should initiate immediate Medical Provider contact and/or initiation of transport to an emergency facility.

Nurse Education:

Be prepared when phoning the medical provider. Have information ready at hand.

- Severity of current symptoms
- Past history of severe asthma/hospitalization or intubation
- Prolonged symptoms before this emergency visit for exacerbation.
- Multiple medications/corticosteroid use at time of exacerbation
- Social & health care access issuer
- Response so far to treatment
- Patient subjective level of anxiety or discomfort compared to any prior episodes
- Other medical problems present (e.g. Diabetes, Coronary Disease, etc.)

Two reaction phases in asthma are now recognized; Early phase and Late phase.

The Early phase occurs upon exposure to allergens or other specific stimuli and results in typical symptoms of air flow obstruction. This reaction usually occurs within 10-30 minutes of exposure and slowly resolves over 1-3 hours.

In about half of patients the initial response persists or reoccurs with symptoms beginning to worsen at 6-8 hours. This Late phase response may last for hours or days. This non-allergic response is much more resistant to bronchodilators. It is an increased bronchial constrictor response to stimuli like exercise, cold air, and methacholine.

Late Phase problems are a substantial reason to recheck the patient 6-8 hours after the initial exacerbation is treated.

The common end point in allergic and non-allergic asthma is airway inflammation. That's why the current long term medical treatment focuses on reducing the inflammation of chronic asthma. Medications such as Cromolyn Sodium and corticosteroids (inhaled and systemic) are effective.

APPROVED:

Medical Services Manager	Date
Chief Medical Officer	Date
Medical Director	5/28/09 Date

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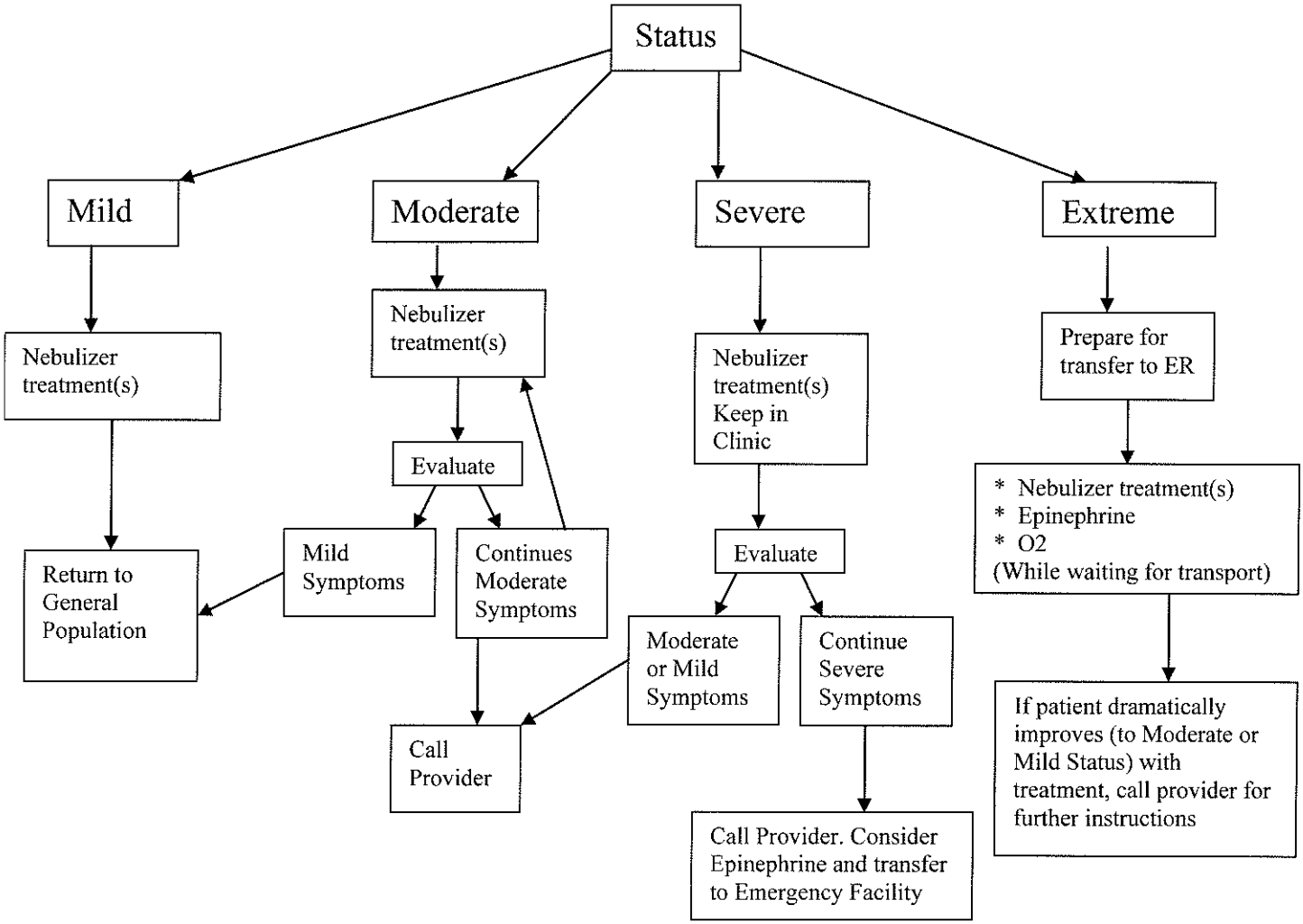
Evaluate/Assess/Evaluate/Assess



If patient's condition is worsening to a more serious status level while undergoing treatment, contact provider STAT. Prepare for transport to Emergency facility if status is Severe or Extreme.