Asthma Related Emergency Department Visits

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Goals of Project

- To understand our current level of care for asthma patients in the ED
- Disseminate information
- Implement discharge protocol for ED to improve care
  - Possibly begin follow up after visit with pharmacy resident

About CMC

- 149 licensed bed facility
- Level III trauma center
- ER staffed 24 hours a day
- Sept – October 2009
  - 5,306 ED visits
  - Averaged 1,769 visits per month
  - Approximately 60 patients per day

Details of the Review

- Performed electronically
  - IBEX documentation system
- August – October
  - 5,306 total admits
- Patients with respiratory related indications pulled
  - 90 charts reviewed
    - 46 met criteria for data collection

Diagnosis Screened (Total patients = 90)

- Acute asthma exacerbation (3)
- Acute asthma flair (1)
- Acute Respiratory distress/ failure (2/1)
- Acute SOB/hopoxemia (1)
- Asthama (1)
- Asthma (17)
- Asthma – Exacerbation (8)
- Asthma (resolved) (1)
- Asthma with bronchitis (5)
- Asthma exacerbation (acute) (16)
- Asthmatic bronchitis (2)
- Cough (13)
- Cough with chest pain (1)
- Dyspnea (alone, resolved, or uncertain etiology) (8/1/1)
- Dyspnea, early pneumonia vs. bronchitis (1)
- Hypoxia(2)
- Wheezing (1)
- Wheezing (not asthma) (2)
- Wheezing per report (1)
- Worried Well (1)

Charts Included

- Patients ***discharged*** from ED
- Patients with previous diagnosis or confirmed ***asthma*** attack
- ***NOT*** included if ***COPD*** or related diseases as primary reason for visit

Information Gathered

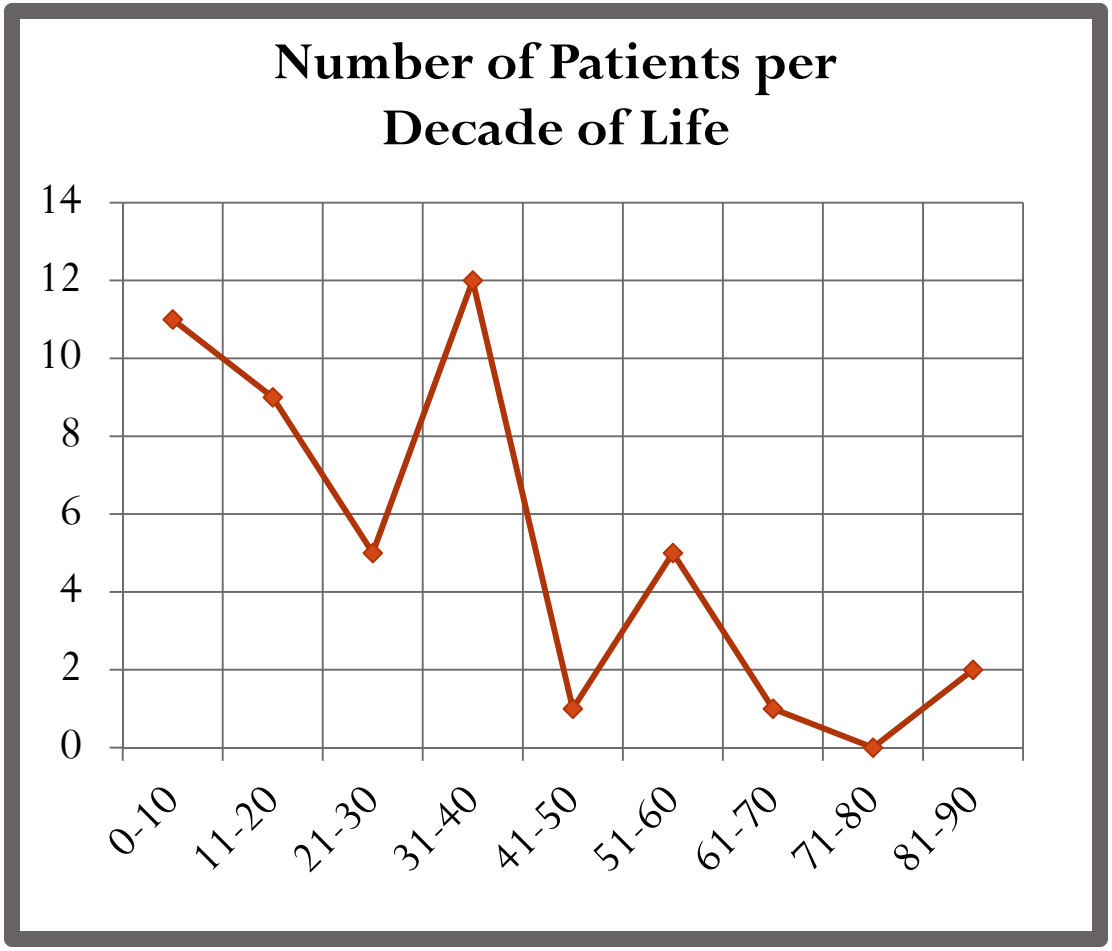
- Demographics
- Diagnosis
- Tobacco use
- Infectious process suspected
- Previous diagnosis of asthma
- Medications on admit
- Co morbidities

Information Gathered

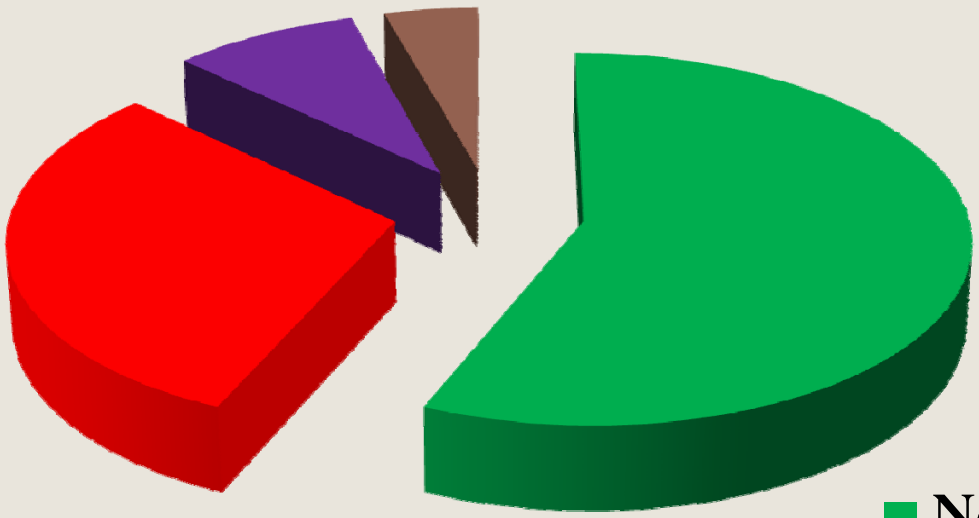
- Medications administered
- O_2 Saturation collection in ED
- Discharge prescriptions
- Education
- Follow up

Results - Demographics

- Sex
  - Male: 25/46 (54%)
- Age
  - 20 months to 83 years
  - Average: 28 years
  - Median: 22.5 years
- Previous diagnosis of asthma
  - 38/46 (83%)



Exposure to Smoke (n=46)



- None-56% (26)
- Smoke Themselves-30% (14)
- Parents Smoke-9% (4)
- Cannibus Use-4% (2)

Diagnosis (n = 46)

- Asthma: 15 (33%)
  - Acute flair: 1 (2%)
  - Exacerbation: 19 (41%)
- Bronchitis: 7 (15%)
- Cough: 3 (7%)
  - With chest pain: 1 (2%)
- Wheezing: 1 (2%)

Co-morbidities (n = 46)

- Needs albuterol inhaler: 4
- Pneumonia: 2
- Tuberculosis: 1
- COPD: 2
- Premature:2
- Nasopharyngeal mass: 1
- Psychological/Depression: 4
- A. fib: 1
- Cardiac/MI/HTN: 3
- Lipids: 5
- Thyroid: 3
- Strep: 1
- PAD/Gallstones: 1

Potential Infection (n = 46)

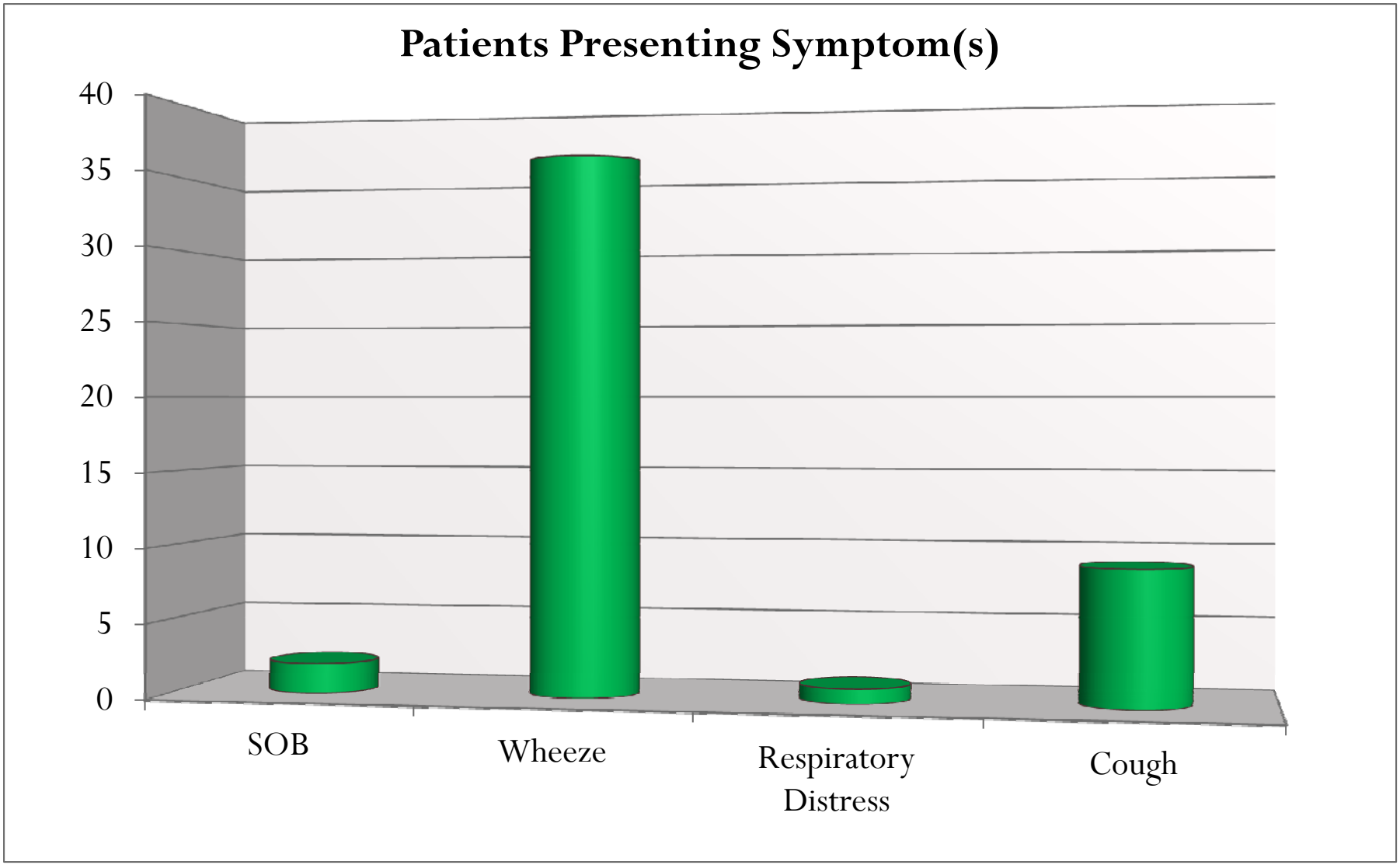
- 27 patients (59%)
- Febrile
  - 3 patients (7%)
- Antibiotics at discharge
  - 13 (28%)

Home Medications (n=46)

- SABA: 39 (85%)
  - Albuterol: 37
    - Nebulizer: 7
  - Levalbuterol: 2
- Duoneb: 1 (2%)
- Singulair: 4 (9%)
- Spiriva: 2 (4%)
- ICS: 10 (22%)
  - Flovent: 1
  - Pulmicort: 1
  - Symbicort: 2
  - Advair: 6
    - 1 as PRN
- Primatene: 1 (2%)
- Steroid: 7 (15%)

Other: Benadryl (5), APAP (3), Motrin (3), Tamiflu (2), Abx (2)

Physical Assessment

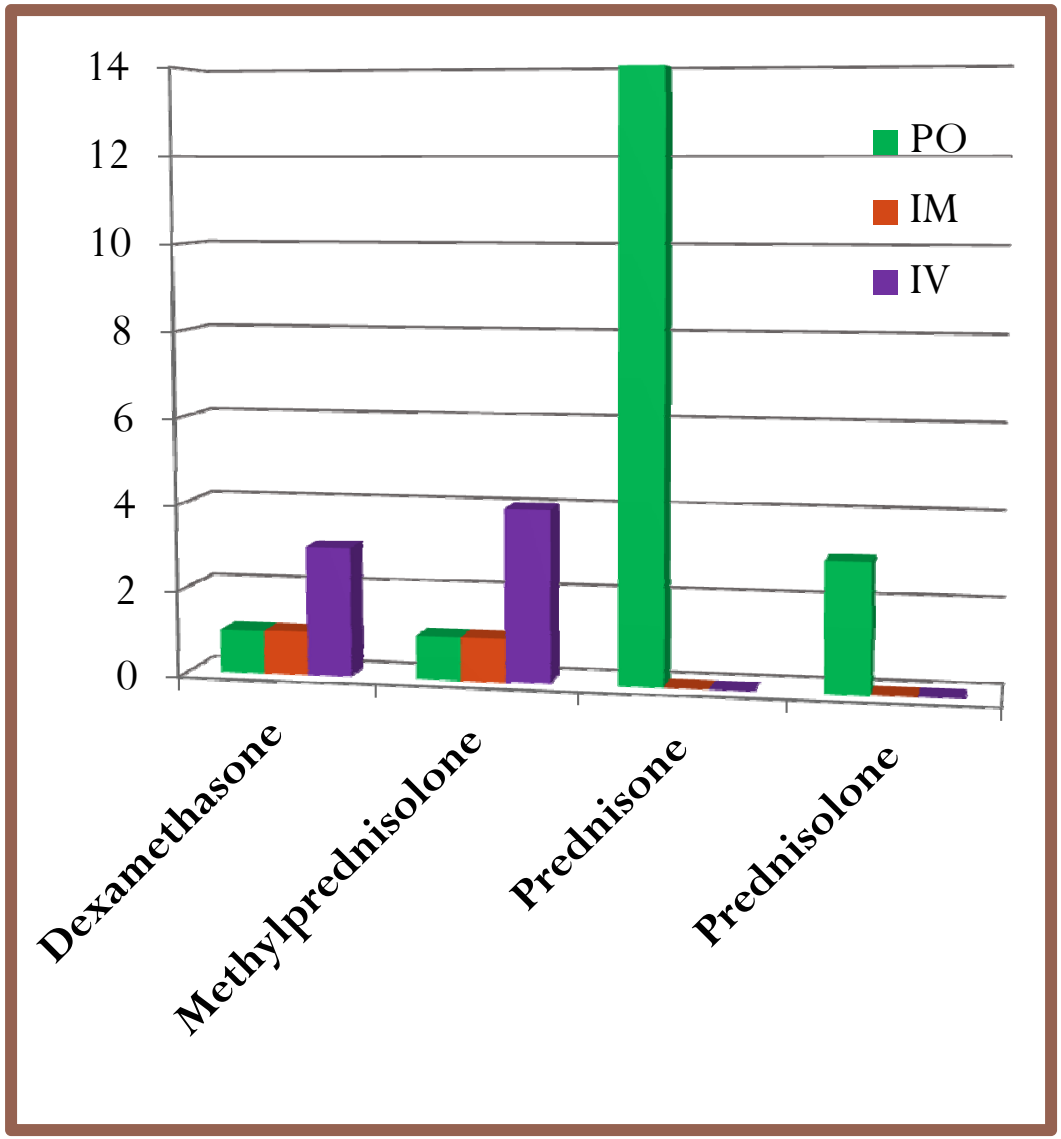


Medications Administered in ED (n=46)

- Duoneb 37 (80%)
  - 2 doses: 8 pts
  - 1 dose: 29 pts
- SABA: 14 (30%)
  - All albuterol except1
  - Mean number of doses: 1.6 (n = 11)
- Ipratrobrium 3 (7%)
  - 2 doses: 2 pts
  - 1 dose: 1 pt

Medications Administered in ED

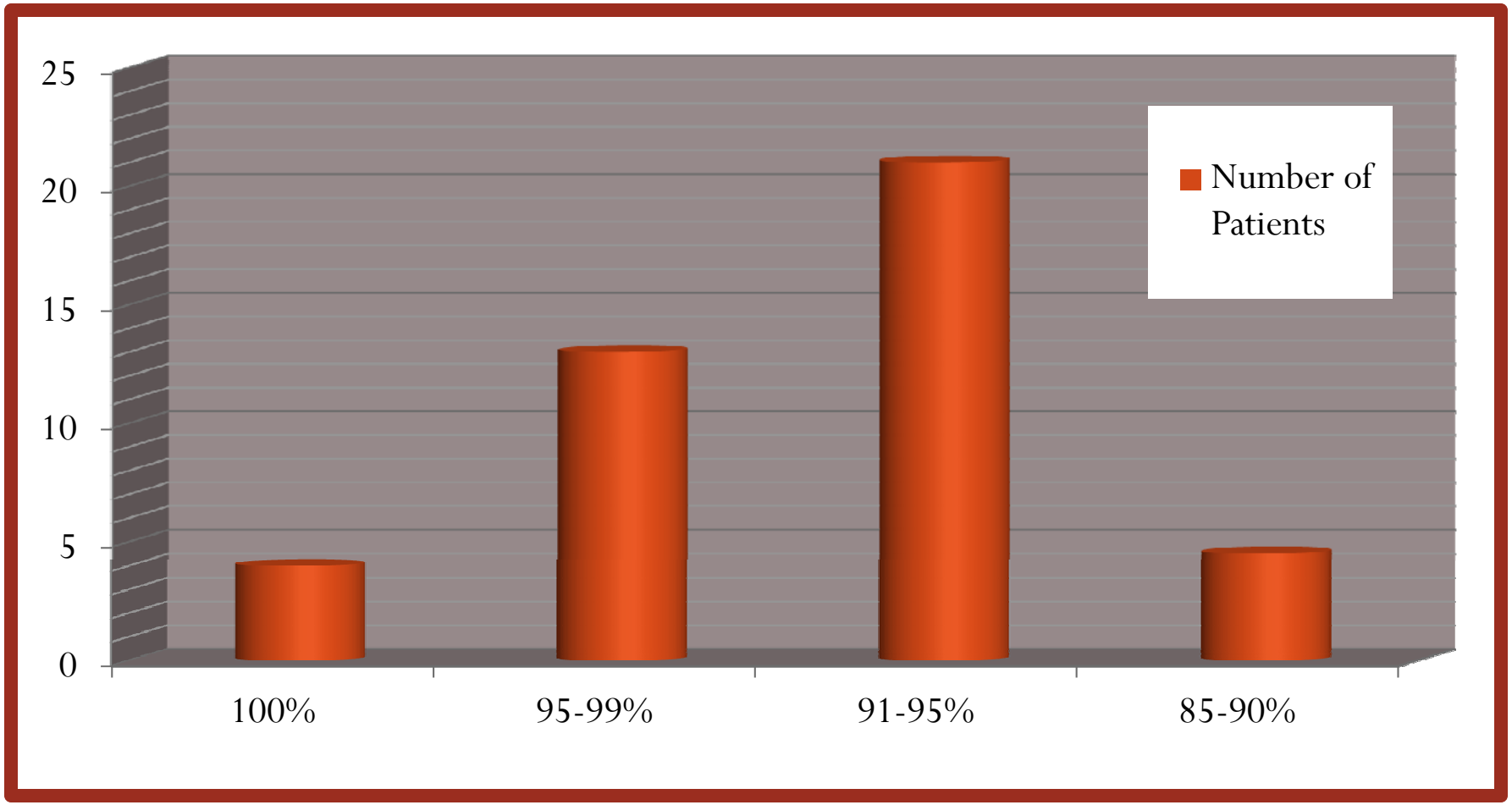
- **Steroids 28/46 (61%)**
  - Dexamethasone
    - 10 mg
  - Methylprednisolone
    - 10–125 mg
  - Prednisone
    - 30mg, 1 patient
    - 40mg, 1 patient
    - 50 mg, 5 patients
    - 60mg, 7 patients
  - Prednisolone
    - 11-20 mg dose



Other Medications Administered in ER

- Ativan 2
- Norco 2
- Motrin 5
- Zofran 2
- Pseudoephedrine 1

O2 Saturation Readings (n=45)



- All patients at least 96% on RA before discharge
- Oxygen administration: 4/46 (9%)

Education

- Written with discharge instructions/pamphlet
  - 33/46 (72%)
- None
  - 12/46 (26%)
- Documented "education given" other than printed handout
  - 1/46 (2%)

Written Education

ASTHMA, ACUTE (CHILD)

ASTHMA [Child]

Asthma is a disease where the small air passages within the lung go into spasm and restrict the flow of air. This causes a wheezing sound with each out–breath. An asthma attack can be triggered by many things. Common triggers include the common cold, bronchitis, pneumonia, emotional upset, heavy exercise, pollutants in the air, dust, mold and pollen. These triggers are called "allergens". Skipping doses of daily asthma medicine can also bring on an asthma attack.

Written Education

HOME CARE:

1) Encourage your child to drink lots of fluids to loosen lung secretions and make it easier to breathe.

2) Take prescribed medicine exactly at the times advised. If your child requires more frequent dosing (especially of a hand–held inhaler or aerosol breathing medicine), this is a sign that the asthma is getting worse. If this occurs, contact your doctor or return to this facility promptly.

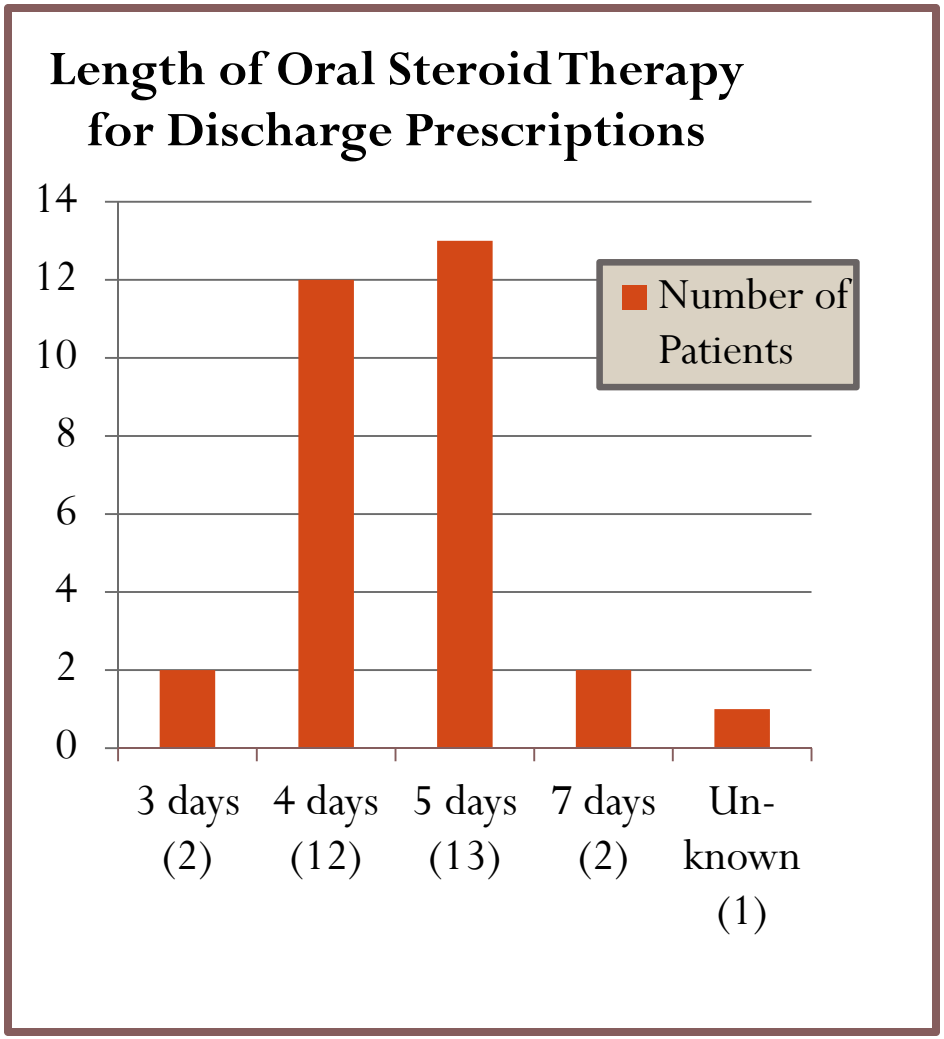
3) Dont expose the child to cigarette smoke. If you or any adult in the household smoke, only do so outside the home. Smoke in the childs home can make asthma harder to control.

Written Education

FOLLOW UP with your doctor or as recommended by our staff. Ask your doctor how to eliminate allergens from the home environment.
[NOTE: If you had an X–ray it will be reviewed by a specialist. You will be notified of any new findings that may affect your care.]

RETURN PROMPTLY or contact your doctor if any of the following occur:
-- Wheezing becomes worse
-- Fast breathing (birth to 6 wks: over 60 breaths/min; 6 wk – 2 yr: over 45 breaths/min, 3–6 yr: over 35 breaths/min, 7–10 yrs: over 30 breaths/min, more than 10 yrs old: over 25 breaths/min)
-- Fever over 99.5º F (37.5º C) oral, or over 100.4º F (38.0º C) rectal
-- Cough with lots of thick colored sputum (mucus)
-- Need to use inhaler medicine more than prescribed
-- No improvement within 24 hours

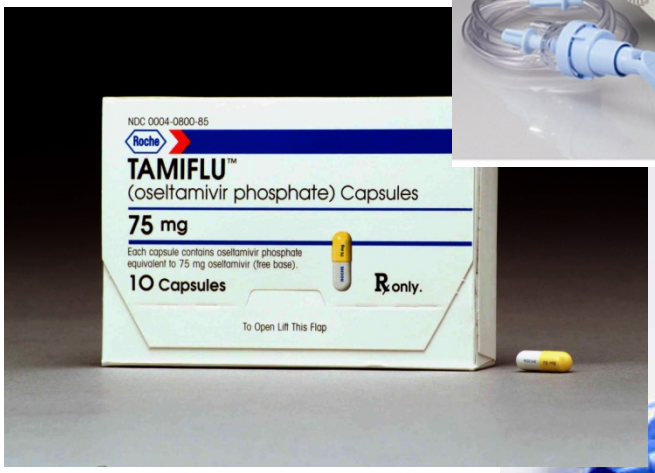
Discharge Prescriptions (n = 46)



- Any prescription: 43 (93%)
- SABA: 29 (63%)
  - Albuterol: 23
  - Levalbuterol: 2
  - Duoneb: 4
- ICS: 3 (7%)
  - Qvar, flunisolide, Advair
- Antibiotics: 13 (28%)
  - Z-pack: 10
  - Doxycycline: 1
  - Amox/amp: 2

Discharge Prescriptions

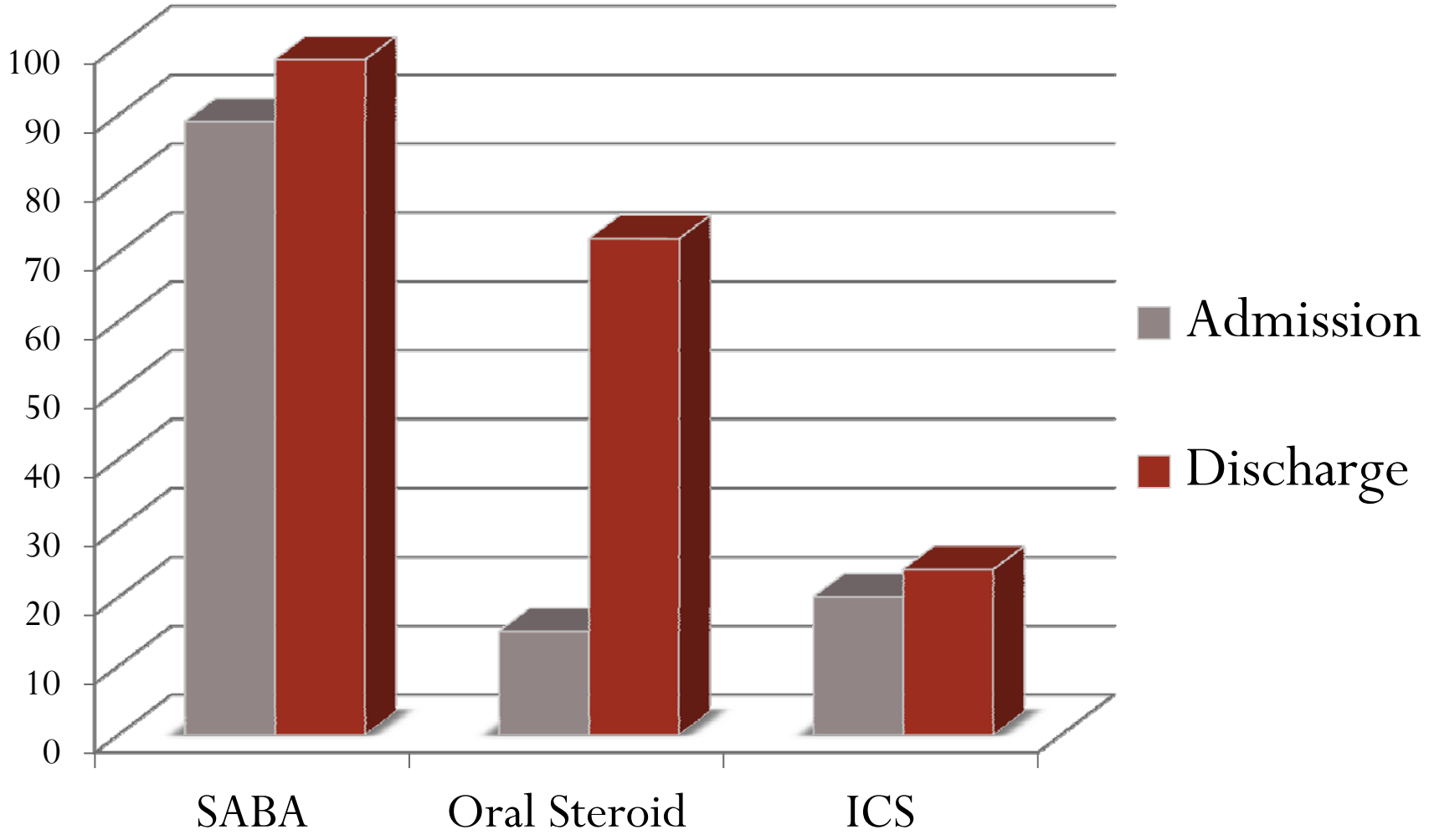
- Nebulizer: 3
- Spacer: 2
- Oxygen: 1
- Cough syrup: 5
- Tamiflu: 3
- Ultram: 1
- Zyrtec: 1



Follow Up

- Discussed PCP: 39 patients (85%)
- Already had future appointment with PCP: 2 patients (4%)
- Action plan: 1 patient
- Peak flow meter: 1 patient

Percent of Patients (n=46) with Asthma Medication Prescriptions



Questions & Discussion