Objective

At the completion of this session, attendees will be able to:

- Better assess and understand the complexity of management of terminal patients with Chronic Obstructive Pulmonary Disease (COPD)
  - Symptom Management
    - Dyspnea
    - Secretions
    - Anxiety
  - Medication Management
    - Identifying Unnecessary and Duplicate medications

Audience Response System

Thanks to the Tucson Osteopathic Medical Foundation for providing “The System”

- Advantages
  - Anonymous
  - Immediate electronic feedback
  - Encourages group participation
  - Enhances dilemma discussion
  - Helps to gain peer perspective
  - The Music

Years in Hospice / Palliative Medicine?

1. < 6 months
2. 6 to 12 months
3. 1 to 3 years
4. 3 to 5 years
5. 5 to 10 years
6. > 10 years

I am comfortable managing patients with end-stage pulmonary disease?

1. Yes
2. No

During IDG, I take a ______ role in attempting to eliminate patient’s non-beneficial medication.

1. Passive
2. Proactive
3. Reactive
Your first-line agent for the palliation of dyspnea in a hospice patient is:

1. Oxygen
2. Albuterol
3. Lorazepam
4. Opioids
5. Corticosteroids

Mrs. Tammy Flu is a 69 yo female with the diagnosis of Chronic Obstructive Pulmonary Disease (COPD).

Co-morbidities
1. Chronic Atrial Fibrillation
2. Congestive Heart Failure
3. Essential Hypertension
4. Cervical Traumatic Arthritis
5. Peripheral Arterial Disease
6. Osteoporosis

- Habits: + Tobacco
- Allergies: NKA

Mrs. Tammy Flu

- Function
  - PPS 50%
  - Predominately bed-to-chair existence
  - Dyspnea with minimal exertion
- Nutrition
  - Weight: 137 lbs
  - Height: 65"
  - BMI: 22.8
  - MAC: 22 cm
  - 17 lb weight loss in preceding 3 months
- Cognition
  - Alert and appropriately oriented on oxygen
- Vital Signs
  - BP 102/68
  - Pulse 102
  - Respirations 28
  - Oximetry 86% on room air at rest
  - Pain: Current 3/10
  - Best 0/10
  - Worst 6/10

Is she appropriate for hospice?

1. Yes
2. No
3. Need more information

Mrs. Tammy Flu

Psychosocial
- Lives with her daughter
- Husband died abruptly 1 year ago from MI
- Code Status: Full
- Fear of Death: Yes

Interim History
- Hospitalizations (3 within last 6 months)
  - Exacerbations of COPD
  - Antibiotics + IV Steroids
  - Chest MRI = mass ? etiology
  - Declined biopsy
- Increasing SOB
- Depressed

What is the most appropriate terminal diagnosis?

1. Cancer
2. Adult Failure to Thrive
3. Pulmonary Disease
4. Cardiac Disease
5. General Debility
### Pulmonary Guidelines (NGS)

- Disabling dyspnea at rest despite optimal treatment
- Optimally treated
- Recurrent Hospitalizations/ER/Infections
  - Oxygen saturation ≤ 88%
  - pO₂ ≤ 55
  - pCO₂ ≥ 50
- Supplemental
  - FEV1 < 30% / Cor-pulmonale
  - Resting Tachycardia

### Mrs. Tammy Flu

**Medications (20)**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theophylline 300mg bid</td>
<td>Lisinopril 10mg qd</td>
</tr>
<tr>
<td>Flovent 220mcg 2 puffs bid</td>
<td>Furosemide 40mg qd</td>
</tr>
<tr>
<td>Foradil bid</td>
<td>Prozac 20mg qd</td>
</tr>
<tr>
<td>Spiriva bid</td>
<td>Prednisone 10mg qd</td>
</tr>
<tr>
<td>ProAir HFA q 4 hrs as prn</td>
<td>Lovastatin 40mg qd</td>
</tr>
<tr>
<td>Xopenex 1.25 SVN qid prn</td>
<td>Zolpidem 10mg at hs</td>
</tr>
<tr>
<td>Singhlaire 10mg hs</td>
<td>Omeprazole 40mg qd</td>
</tr>
<tr>
<td>DuoNeb via SVN qid</td>
<td>Alendronate 10mg qd</td>
</tr>
<tr>
<td>Atenolol 50mg bid</td>
<td>Coumadin 7.5mg qd</td>
</tr>
<tr>
<td>Fentanyl 25mcg q 72 hrs</td>
<td>Vicodin 5/500 2 q4 hrs prn</td>
</tr>
</tbody>
</table>

### Who’s responsibility is it to identify duplication of medication?

1. Consulting pharmacists
2. Physicians who are board certified in palliative medicine
3. RNs who are certified in palliative care
4. Physicians, RNs and nurse practitioners who complete a specific hospice or palliative care drug management course
5. All of the above

### Whose responsibility is it to correct duplication of medications?

1. Prescribing physician
2. Attending physician, alone
3. Hospice Medical Director (MDR)
4. Hospice MDR, with interdisciplinary team
5. Hospice MDR, after consulting with attending
6. Consulting Pharmacist

### Conditions of Participation

Interpretive Guidelines S418.54 (c)(6)

- In reviewing the patient’s prescribed and over-the-counter medications and any additional substance that could affect drug therapy, the hospice must consider:
  - Drug effectiveness
  - Side effects
  - Interactions of drugs
  - Duplicate drugs
  - Drugs associated with laboratory testing which could affect the patient.

### Medication Guidelines

**Review Patient’s Current Medications**

1. Related / Unrelated
2. Determine Appropriateness
   - Eliminate / Reduce Pill Burden
3. Polypharmacy…identify non-beneficial drugs
   - Discuss with Attending & Patient / Family
**The Dilemma**

- Formulary
- Medicare Guidelines
- Total Patient Care
- Do No Harm
- Nurturing our Patients
- Family Demands
- Inducement

...Medication Guidelines

- **Related / Unrelated**
  - Is the medication related to the Hospice diagnosis?
  - Is the medication for symptom management?
  - Does it contribute to the individual’s quality of life?
  - Does the medication have a tangible effect within the time-frame of the terminal illness?
  - Is the medication life-prolonging?

**Her Pulmonary Meds**

- **Dosing Around-the-Clock**
  - Theophylline 300mg bid
  - Flovent 220mcg 2 puffs bid
  - Foradil q 12 hr
  - Spiriva q 12 hr
  - DuoNeb SVN qid
  - Singulair 10mg qd
  - Prednisone 10mg qd

- **Dosing as needed**
  - Xopenex SVN q4 hr
  - ProAir HFA prn

**Pulmonary Medications**

- **Goal**
  - Relief of dyspnea
  - Improvement in exercise tolerance and quality of life

  - Beta adrenergic agonists
  - Anticholinergics
  - Corticosteroids
  - Opioids
  - Other

**Beta-Agonist**

- **Long-acting**
  - Serevent (Salmeterol)
  - Foradil (Formoterol)
  - Brovanc (Arformoterol)

- **Short-acting**
  - Albuterol
  - Xopenex (Levalbuterol)

  - **Combination**
    - Advair (Fluticasone/Salmeterol)
    - Symbicort (Budesonide/Formoterol)

  - **Combination**
    - Combivent (Albuterol/Ipratropium)
    - DuoNeb (Albuterol/Ipratropium)

**Tammy is on several B-Agonists. Which one would you discontinue?**

1. Foradil
2. DuoNeb
3. Xopenex
4. ProAir
5. Discontinue (1) & (3)
6. Discontinue (2) & (3)
Would you discontinue one of these medications?

1. DuoNeb
2. Spiriva
3. Uncertain

Anticholinergic

- Long-acting
  - Spiriva (Tiotropium)
- Short-acting
  - Atrovent (Ipratropium)
- Combination
  - Combinent (Albuterol/Ipratropium)
  - DuoNeb (Albuterol/Ipratropium)

Would you discontinue one of these medications?

1. Flovent
2. Prednisone
3. Neither
4. Both
5. Uncertain

Corticosteroids

- Inhaled Agent
  - Asmanex (Mometasone)
  - Flovent (Fluticasone)
  - Pulmicort (Budesonide)
- Oral Agent
  - Prednisone
  - Dexamethasone
- Combination
  - Advair (Fluticasone/Salmeterol)
  - Symbicort (Budesonide/Formoterol)

Would you discontinue one of these medications?

1. Theophylline
2. Singulair
3. Neither
4. Both
5. Uncertain

$ Medication Cost $

<table>
<thead>
<tr>
<th>Medication</th>
<th>Monthly Cost</th>
<th>Daily Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flovent 220mcg 2 puffs bid</td>
<td>$214</td>
<td>$7.10</td>
</tr>
<tr>
<td>Spiriva 1 qd</td>
<td>$197</td>
<td>$6.60</td>
</tr>
<tr>
<td>Foradil q12h</td>
<td>$161</td>
<td>$5.40</td>
</tr>
<tr>
<td>Singular 10mg hs</td>
<td>$120</td>
<td>$4.00</td>
</tr>
<tr>
<td>Xopenex 1.25mg Neb qd</td>
<td>$102</td>
<td>$3.90</td>
</tr>
<tr>
<td>DuoNeb 1 neb qid</td>
<td>$80</td>
<td>$2.70</td>
</tr>
<tr>
<td>ProAir 2 puffs qdh pm</td>
<td>$42</td>
<td>$1.40</td>
</tr>
<tr>
<td>Theophylline 300mg bid</td>
<td>$21</td>
<td>$0.70</td>
</tr>
<tr>
<td>Prednisone 10mg qd</td>
<td>$12</td>
<td>$0.40</td>
</tr>
<tr>
<td>Symbicort 160mcg/4.5 2 puffs bid</td>
<td>$202</td>
<td>$6.70</td>
</tr>
</tbody>
</table>
You now recommend one of the following combinations:

1. Flovent, Foradil, Spiriva and Albuterol (current regimen)
2. Symbicort, Spiriva and Albuterol
3. Flovent, DuoNeb and Albuterol
4. Prednisone, DuoNeb and Albuterol

You now recommend:

1. Maintain current regiment
2. D/C MDI's and change to nebulized meds.
3. Other
4. Uncertain

You now recommend:

The RN case manager calls to report a change in Tammy's condition: she has increasing shortness-of-breath, a productive cough with grey sputum and a low grade temperature. You recommend:

1. Rx Cough Medicine
2. A Chest X-ray
3. An Antibiotic
4. Increase her Prednisone
5. Send her to Emergency Dept for evaluation
6. No intervention, RN to reassess in ≈ 24 hours

Which Antibiotic would you recommend?

1. Trimethoprim / Sulfamethoxazole (Bactrim DS®) twice daily
2. Levofloxacin (Levaquin®) 500mg daily
3. Azithromycin (Zithromax®) dose pack
4. Doxycycline 100mg twice daily
5. Amoxicillin 500mg three times daily
6. I would not recommend an antibiotic

Tammy is afebrile following a course of antibiotics. Her cough has improved. Her sputum is now clear and despite an increase in her oral prednisone her dyspnea persists and she is quite anxious. She refuses the recommendation for a chest x-ray...does not want to go back to the hospital. AND she just does not want to take any additional medication.
### Measurement of Dyspnea

- **Verbal Scoring**
  - None – Mild – Moderate – Severe
    - (0) (1-3) (4-7) (8-10)
  - “Best” - “Worst” - “Average”
  - Tolerable………Intolerable
  - Impact on Function & Quality of Life

### Consequences

- Will treatment relieve the dyspnea without creating new problems?  
  - Side Effects / Interactions / Social-Financial Burden

- Considering the Patient’s Prognosis and Quality of Life (ADL’s / PPS) is the treatment worthwhile to patient and family?  
  - Adverse Effects / Travel / Cost

- “No Intervention” is always a reasonable option.

### Nonpharmacologic Interventions

- Reassure… manage anxiety
- Behavioral Approaches
  - relaxation, distraction, hypnosis
- Eliminate Environmental Irritants
  - Avoid strong odors, fumes and smoke
  - Limit the number of people in the room
  - Utilize a Fan / Open a Window
  - Suction Secretions

### Case continues
You recommend?

1. Utilizing a fan
2. Opening the window
3. Limiting the number of people in room
4. Cooling the room
5. All of the above

### Nonpharmacologic Interventions

- Reduce the need for exertion
- Keep line of sight clear to the outside
- Reduce the room temperature
- Introduce Humidity
- Reposition
  - elevate the head of the bed
  - move patient to one side or other
- Educate and Support the family

### There is no improvement with the nonpharmacological interventions, you now recommend?

1. Increase her oxygen
2. Another trial of Albuterol
3. Rx Morphine IR 10mg po/sl q1 hrs as needed
4. Rx Lorazepam 0.5mg every 4 hours as needed
5. Nebulized Morphine 10mg in 2.5ml of NS q4h prn
6. Nebulized Fentanyl 2.5 mcg in 2.5ml of NS q2h prn
Prevalence of Dyspnea

- 21 - 78% of Patients with Cancer
- 37 - 70% in Non-cancer Disease
  - COPD / CHF / AIDS / ALS / Dementia
- 70% in Final 6 Weeks of Life

---

...Case continues

Tammy’s condition has only slightly improved. Would you now recommend continuous care?

1. Yes
2. No – it is not indicated
3. No – we lack staff to do continuous care

---

You recommend...?

1. Reassure family and non-pharmacologic interventions
2. Guaifenesin
3. Nebulized Saline
4. Atropine drops 1-2 gtt SL q3h
5. Hyoscyamine sl tabs 0.125mg sl q4h prn
6. Scopolamine Patch (1-3) q72h
7. Glycopyrrolate 0.2mg q4h SQ bolus
8. Scopolamine gel 0.25mg q4h topically

---

...Case continues

Continuous care is started to monitor the effectiveness and safety of the morphine

- SW visits and pt and family agrees to allow natural death and completes a Do-not-resuscitate form
- Over the next day, the patient becomes less responsive, she appears comfortable but develops a rattling sound with her breathing and the family believes she drowning in her own secretions.

---

Questions ?

...Case continues

Atropine drops are initiated. She become a little restless but responds to an increase of lorazepam and along with the morphine, calms down.

She dies peacefully the next day