Pharmacy 483

- MUE
- Cost Effective Medication Utilization
- Quality Improvement
- Cost Management

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- Outcomes & Cost Management UWMC
- Provide pharmacy leadership for medication related outcomes
  - Pharmacy & Therapeutics
  - Treatment guidelines/criteria for use

Steve Riddle

- Quality Improvement and Medication Utilization Lead
  - “Right drug for the right patient every time”
- Work with administration and clinical staff (physicians, pharmacists) to develop care processes for specific conditions and/or medications.
- Examples: ACE inhibitors in myocardial infarction and heart failure; use of most cost-effective agents in depression; treatment of chronic pain
Goals of the Presentation

• Understand the basics of continuous quality improvement (CQI) and how it is used to achieve optimal patient outcomes.

• Understand the role of Medication Utilization Evaluation (MUE) in the CQI process.

• Understand the basics of cost effectiveness evaluations.

Continuous Quality Improvement

- Assess/Reassess
- Plan and Design
- Evaluate
- Implement

Key Terms

Medication Utilization Evaluation

• Retrospective/Prospective
• Is utilization of the drug appropriate?
  • compared to goals (criteria for use and/or treatment guidelines)
• Provides necessary data for CQI process
Key Terms

Formulary

• List of Drugs Which May Be Prescribed
• Developed by the P&T Committee based on:
  ✓ Safety
  ✓ Efficacy
  ✓ Cost Effectiveness

Key Terms

Cost Effective Therapy

-chevron Least expensive therapy which provides the desired outcome
  ✓ Medication Cost
  ✓ Monitoring Costs (labs/office visits/etc)
  ✓ Adverse Effect Costs
-chevron Very slippery concept – difficult to quantify
  ✓ Convenience
  ✓ Individual Patient Preference

Cost Effective Calculation

Lexus ES 330
Initial Cost $35,000
26 mpg

Hyundai Sonata V6
Initial Cost $21,000
24 mpg

Cost effectiveness evaluation must also include:
  Maintenance Cost
  Life Span of the Car
**Cost Effective Calculation (Cont)**

Lexus ES 330

- Life span = 150,000 miles
- Maintenance cost = $0.3 per mile
- Total Cost = $91,538
- Cost per mile = $0.61

Hyundai Sonata V6

- Life span = 96,000 miles
- Maintenance cost = $0.26 per mile
- Total Cost = $53,960
- Cost per mile = $0.56

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**Antidepressant Cost Effectiveness Comparison**

ZOLOFT

- Acquisition Cost
- Monitoring Cost
- Cost of Adverse Effects
- True Cost of Zoloft

VS.

AMITRIPTYLINE

- Acquisition Cost
- Monitoring Cost
- Cost of Adverse Effects
- True Cost of Amitriptyline

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**Evaluation of IVIG Utilization**

- **What is IVIG?**
  - Intravenous preparation of immune globulins (antibodies) derived from pool plasma
- **What is it used to treat?**
  - Only 5 FDA indications
  - Dozens of off-label indications (many with little or no data to support use)
- **Why evaluate?**
  - Limited resource
  - Safety Issues
  - Cost (2 million per year)
IVIG MUE Criteria

Reviewed charts for all patients that received IVIG at UWMC/HMC for a 2 month period
➢ Indication for IVIG
➢ Dose of IVIG given
➢ Duration of IVIG therapy
➢ Prescribing Service
➢ Adverse Effects Attributed to IVIG

Results

Indications for IVIG

Dosing Regimen of IVIG
Results

IVIG Prescribing Service

Results

Adverse Effects

* % of all patients treated with IVIG during the study period (n=70)

Assess the Results

We have a problem!
Plan & Design
Multidisciplinary Task Force

Goals

• Need to know what IVIG is being prescribed for
  • in 43 % of patients it was unclear
  • Who are the primary prescribers?

• Provide education for prescribers regarding:
  • Appropriate indications
  • Appropriate dosing
  • Product selection

Plan for Accomplishing Goals

• Addition of a sucrose free IVIG product to formulary
  • Sucrose is associated with nephropathy
  • Guidelines for who should receive

• Development of an IVIG order form
  • Check boxes for indications
  • Dosing recommendations
  • Product selection
  • Administration/Monitoring
  • Premedications
**IVIG Order Form**

I. Select Diagnosis/Indication for IVIG
   - FDA Indications (with dosing recommendations)
   - Off Label Indications (with dosing recommendations)

II. Select IVIG Product
   - Standard Product
   - Sucrose Free Product

III. Indicate Dose & Frequency
    Give __________ grams of IVIG (Select Product Above)
    every __________ (specify frequency) for a total of
    doses __________ (specify # of doses to be given).

**Implementation of IVIG Order Form**

- Approval of P&T Committee
- Forms Committee Approval
- Printing & Distributing
- Education
  - Pharmacist Education
  - Physician Education
  - Nursing Education

**Re-evaluate**

Prospective MUE using order forms
- Tabulate results in 3-6 months
  - Did the form improve utilization of IVIG?

- Look at incidence of ADR
  - Did adding sucrose free product decrease incidence of nephropathy?
  - Was it cost effective?
Repeat the Cycle

Formulary and Financial Impact Evaluation

Weighted Evaluation of:
- Safety
- Efficacy
- Financial Impact

Add to formulary

Do NOT Add to formulary

Pregabalin (Lyrica®)

- Structural analog of GABA
  - GABA is an inhibitory neurotransmitter
  - Similar to Gabapentin (Neurontin®)
- Indications
  - Partial Seizures
  - Neuropathic Pain
- Therapeutic Advantage?
  - Safety
  - Efficacy
Steps in a Financial Impact Evaluation

1. Determination of Total Cost
2. Determination of Reimbursement
3. Calculation of Potential Revenue

Financial Impact Evaluation
Pregabalin vs. Gabapentin

**Determination of Costs:**
- Drug Acquisition
- Monitoring, ADRS, & Convenience
- Drug Administration Cost
  - Clinic vs. Self Administered

**Determination of Reimbursement:**

<table>
<thead>
<tr>
<th>HOSPITAL</th>
<th>AMBULATORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>• DRG or Capped Reimbursement</td>
<td>• Insurance Mix (DSHS/Medicaid, Medicare, Private, Indigent)</td>
</tr>
<tr>
<td></td>
<td>• Insurer Formularies</td>
</tr>
<tr>
<td></td>
<td>• Patient Responsibility (co-pays)</td>
</tr>
</tbody>
</table>
Financial Impact Evaluation
Pregabalin vs. Gabapentin

Calculation of Profit Margin:

\[
\text{Reimbursement} - \text{Total Cost} = \text{Profit Margin}
\]

Appropriate Utilization

- Clinical Criteria for Use
- Minimizing Economic Impact
  - Anticipated Usage

1. Clinical Evaluation
2. Anticipated Usage/Economic Impact
3. P&T Evaluation – add or not add to formulary
4. Education Guidelines vs. Restriction
5. MUE Economic Impact

Education

Treatment Guidelines

VS.

Use Restrictions
Questions?