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
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
Formulary

• List of Drugs Which May Be Prescribed
• Developed by the P&T Committee based on:

  ✓ Safety
  ✓ Efficacy
  ✓ Cost Effectiveness
Cost Effective Therapy

- Least expensive therapy which provides the desired outcome
  - Medication Cost
  - Monitoring Costs (labs/ office visits/etc)
  - Adverse Effect Costs

- 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
Antidepressant Cost Effectiveness Comparison

### Comparative Info
- Acquisition Cost
- Monitoring Cost
- Cost of Adverse Effects

### Analysis Model
- ZOLOFT

### True Cost of Zoloft

### Cost Effectiveness Ratio
- VS.
- True Cost of Amitriptyline
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

- FDA labeled: 43%
- Off label with support: 27%
- Off label without support: 21%
- Unable to Determine: 9%
Results

Dosing Regimen of IVIG

- Appropriate: 70%
- Inappropriate: 8%
- Unclear: 22%
IVIG Prescribing Service

% of Total IVIG Cost

25%

32%

13%

18%

12%

HemOnc Transp Medicine Neuro Burns
Adverse Effects

Results

# of Patients having an ADR

- Infusion Reaction: 2.9%*
- Nephropathy: 4.2%*
- Other: 1.4%*

* % of all patients treated with IVIG during the study period (n=70)
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 if there is an advantage.
Do NOT Add to formulary if there is no advantage.
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 an 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
### Financial Impact Evaluation
Pregabalin vs. Gabapentin

**Determination of Reimbursement:**

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

Calculation of Profit Margin:

Reimbursement - Total Cost = Profit Margin
Appropriate Utilization

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

Education

Treatment Guidelines vs. Use Restrictions
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
Questions?