Case Studies in Dyslipidemia: Implementing Evidence-based Strategies to Manage Patients
Program Agenda

6:15 a.m. – 6:45 a.m.  Registration and Breakfast Buffet

6:45 a.m. – 6:50 a.m.  Introductory Remarks
Joseph Saseen, Pharm.D., BCPS, FCCP, Program Moderator

6:50 a.m. – 7:00 a.m.  NCEP Goals for Managing Dyslipidemia
Joseph Saseen, Pharm.D., BCPS, FCCP
Mark J. Cziraky, Pharm.D., FAHA

7:00 a.m. – 7:40 a.m.  Case Studies in Dyslipidemia: Evidence-based Strategies
Joseph Saseen, Pharm.D., BCPS, FCCP
Mark J. Cziraky, Pharm.D., FAHA

7:40 a.m. – 7:45 a.m.  Question and Answer Discussion

Program Faculty

Joseph Saseen, Pharm.D., BCPS, FCCP, Program Moderator
Associate Professor
Departments of Clinical Pharmacy and Family Medicine
University of Colorado Health Sciences Center
Denver, Colorado

Mark J. Cziraky, Pharm.D., FAHA
Executive Vice President
HealthCore, Inc.
Wilmington, Delaware
Case Studies in Dyslipidemia: Implementing Evidence-based Strategies to Manage Patients

Program Description

Dyslipidemia is a major risk factor for coronary heart disease (CHD), and its management is important in preventing the occurrence of cardiovascular events. Because many patients are unable to achieve their target lipid goals when treated with statin monotherapy, pharmacists need to be aware of the importance of combination therapy in controlling dyslipidemia. This program will briefly review therapeutic goals based on National Cholesterol Education Panel (NCEP) guidelines. Evidence supporting the rationale, efficacy, and safety data of combination therapy in patients with dyslipidemia will also be presented. Case studies will be used to demonstrate therapeutic strategies, goals, and challenges in managing patients with dyslipidemia. Special patient populations and challenges in identifying appropriate therapeutic goals will be discussed.

Learning Objectives

At the conclusion of this presentation, participants should be able to:

- Discuss therapeutic goals for managing dyslipidemia based on current NCEP guidelines.
- Identify the role and importance of LDL cholesterol, non-LDL parameters, and other factors in assessing cardiovascular risk.
- Given a summary of three specific patients with dyslipidemia, assess cardiovascular risk and lipid values and identify appropriate goals of therapy.
- Compare and contrast appropriate patient-specific treatment plans to treat dyslipidemia based on a cardiovascular risk assessment.
- Identify evidence to support treatment plans for patients with dyslipidemia.

Continuing Education Accreditation

The American Society of Health-System Pharmacists is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education. This program provides 1 hour (0.1 CEU) of continuing education credit (program number 204-000-05-473-L01). Attendees must complete a Continuing Pharmacy Education Request online and may immediately print their official ASHP CE statements at the ASHP Advantage CE Processing Center at www.ashpadvantage.com.
Case Studies in Dyslipidemia: Implementing Evidence-based Strategies to Manage Patients

Joseph Saseen, Pharm.D., BCPS, FCCP
Associate Professor
Departments of Clinical Pharmacy and Family Medicine
University of Colorado Health Sciences Center
Denver, Colorado

Dr. Joseph Saseen received his Bachelor of Science in Pharmacy and Doctor of Pharmacy degrees from the State University of New York (SUNY) at Buffalo, and completed an ambulatory care research fellowship at the University of Illinois/University of Colorado. He is currently Associate Professor of Clinical Pharmacy and Family Medicine at the University of Colorado at Denver and Health Sciences Center. Dr. Saseen practices as a clinical pharmacy specialist in the Department of Family Medicine. He is a board-certified pharmacotherapy specialist with added qualifications in cardiology, and is a member of the board of regents and fellow of the American College of Clinical Pharmacy. Dr. Saseen has published several articles and book chapters related to cardiovascular pharmacotherapy. He has received several teaching awards at the University of Colorado, where he most recently was the recipient of the President’s Excellence in Teaching Award in May 2005.
Mark J. Cziraky, Pharm.D., FAHA  
Executive Vice President  
HealthCore, Inc.  
Wilmington, Delaware

Dr. Mark Cziraky is Executive Vice President and co-founder of HealthCore Inc., a research organization based in Wilmington, Delaware. Prior to his current position, Dr. Cziraky was Assistant Professor at the Philadelphia College of Pharmacy and Science (PCPS) until 1997. He currently holds an Adjunct Associate Professor appointment at the University of Delaware School of Nursing. He is a graduate of PCPS, receiving both his Bachelor of Science and Doctor of Pharmacy degrees and attaining Summa Cum Laude honors for each degree. After receiving his graduate degree, he completed an ambulatory care residency at Blue Cross and Blue Shield of Delaware (BCBSDE).

Dr. Cziraky has been extensively involved in clinical, health economic, and outcomes research for more than a decade with a clinical focus on cardiovascular diseases. While a faculty member at PCPS, Dr. Cziraky initiated a dyslipidemia management program at a large group practice within BCBSDE and eventually transformed it into a multidisciplinary cardiovascular risk-management program. This initiative was recognized by the Delaware Pharmacy Society and earned Dr. Cziraky the Delaware Innovative Pharmacy Practice Award in 1997. Additionally, he was recognized by his peers and American Druggist as one of the 50 Most Influential Pharmacists in 1998.

In 1998, the American Heart Association awarded Dr. Cziraky with fellowship on the Council of Arteriosclerosis, Thrombosis and Vascular Biology. Dr. Cziraky was elected a member of the National Heart, Lung and Blood Institute’s (NHLBI) National High Blood Pressure Education Program Coordinating Committee in 2000 representing the American Pharmacists Association and was part of the writing committee for the Joint National Committee (JNC-7) Hypertension Management Guidelines.

Additionally, he is currently the chairman of the National Committee on Quality Assurance’s (NCQA) Health Care Practitioner Advisory Committee and a member of the Board of Trustees of both the Institute of Safe Medication Practice and the Wellness Community of Delaware. He was elected to the board of directors of the Northeast Lipid Association, part of the National Lipid Association.

Dr. Cziraky is currently a reviewer for numerous medical and pharmacy journals. He is a nationally recognized presenter on both cardiovascular and health economic-related topics and has published original research and book chapters in these same areas.
Case Studies in Dyslipidemia: Implementing Evidence-based Strategies to Manage Patients

40th ASHP Midyear Clinical Meeting
Las Vegas, Nevada

NCEP Goals for Managing Dyslipidemia

Joseph Saseen, Pharm.D., FCCP, BCPS
Associate Professor
Clinical Pharmacy and Family Medicine
University of Colorado Health Sciences Center

Mark Cziraky, Pharm.D., FAHA
Executive Vice President
HealthCore, Inc.

Facts, Cardiovascular Disease in the U.S.

• In 2002, accounted for 38.0% of all deaths or 1 of every 2.6 deaths
• CVD mortality was nearly 60% of “total mortality”
• Since 1900 CVD has been the No. 1 killer in every year but 1918 (influenza pandemic)
• Claims as many lives each year as the next 5 leading causes of death combined, including cancer

NHANES:
Serum Lipids and Lipoproteins in Adults

![NHANES Chart]


LDL-C and CV risk

![LDL-C and CV risk Chart]


ATP III: 2004 Update

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>LDL-C Goal (mg/dL)</th>
<th>Initiate TLC (mg/dL)</th>
<th>Consider Drug Rx (mg/dL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Risk CHD or equivalents (10 yr risk &gt; 20%)</td>
<td>&lt; 100 (Optional &lt;70)*</td>
<td>≥100*</td>
<td>≥100 (100-129: consider drug options)**</td>
</tr>
<tr>
<td>Moderately High Risk 2+ risk factors (10 yr risk 10 to 20%)</td>
<td>&lt; 130 (Optional &lt; 100)</td>
<td>≥130*</td>
<td>(100-129: consider drug options)**</td>
</tr>
<tr>
<td>Moderate Risk 2+ risk factors (10 yr risk &lt; 10%)</td>
<td>&lt; 130</td>
<td>2 130</td>
<td>2 160</td>
</tr>
<tr>
<td>Lower Risk 0 to 1 risk factors</td>
<td>&lt; 160</td>
<td>2 160</td>
<td>2 190 (160-189: drug optional)</td>
</tr>
</tbody>
</table>

* Very high risk factors = 10 mg/dL, and patients with high TGs or use of LDL ≥ 190 mg/dL
* High risk or moderately high with lifestyle-related risk should be on TLC regardless of LDL
* LDL Tx based on clinical evidence, ↑ Tgs or ↓ HDL consider combining with niacin or fibrate
** Achieve at least a 30 to 40% LDL reduction
*** LDL Tx to achieve LDL ≤ 100 mg/dL is an option based on clinical trials

ATP III: 2004 Update
Standard Statin Doses to Attain 30 - 40% LDL-C Reductions

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dose (mg/d)</th>
<th>LDL-C reduction (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atorvastatin</td>
<td>10</td>
<td>39</td>
</tr>
<tr>
<td>Lovastatin</td>
<td>40</td>
<td>31</td>
</tr>
<tr>
<td>Pravastatin</td>
<td>40</td>
<td>34</td>
</tr>
<tr>
<td>Simvastatin</td>
<td>20-40</td>
<td>35-41</td>
</tr>
<tr>
<td>Fluvastatin</td>
<td>40-80</td>
<td>25-35</td>
</tr>
<tr>
<td>Rosuvastatin</td>
<td>5-10</td>
<td>39-45</td>
</tr>
</tbody>
</table>

Circulation 2004; 110:227-239

AHA/NHLBI Scientific Statement:
Metabolic Syndrome Diagnostic Criteria

<table>
<thead>
<tr>
<th>Measure (3 of 5 constitutes diagnosis)</th>
<th>Categorical Cut Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevated waist circumference (in)</td>
<td>≥ 40 (men), ≥ 35 (women)</td>
</tr>
<tr>
<td>Elevated TGs (mg/dL)</td>
<td>≥ 150 or drug therapy</td>
</tr>
<tr>
<td>Reduced HDL - C (mg/dL)</td>
<td>&lt; 40 (men), &lt; 50 (women) or drug therapy</td>
</tr>
<tr>
<td>Elevated BP (mm Hg)</td>
<td>≥ 130/85 or drug therapy</td>
</tr>
<tr>
<td>Elevated fasting glucose (mg/dL)</td>
<td>≥ 100 or drug therapy</td>
</tr>
</tbody>
</table>

Circulation. 2005;112:e285-e290

AHA/NHLBI Scientific Statement:
Metabolic Syndrome Goal Values

• **Primary target:** LDL-C goal

• **Secondary target:** Non-HDL-C goal
  • Only if LDL-C goal met and if TG ≥ 200 mg/dL
  • Always 30 mg/dL higher than LDL-C goal

• **Tertiary target:** HDL-C
  • Only after LDL-C and non-HDL-C goals are met
  • Raise HDL-C to extent possible with standard therapies to ≥ 40 mg/dL (men), ≥ 50 mg/dL (women)

Circulation. 2005;112:e285-e290
Lipid-Lowering Therapies

<table>
<thead>
<tr>
<th></th>
<th>LDL - C</th>
<th>HDL - C</th>
<th>TG</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Statins</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(atorvastatin, fluvastatin, lovastatin, pravastatin, rosuvastatin, simvastatin)</td>
<td>↓18-63%</td>
<td>↑5-15%</td>
<td>↓7-30%</td>
</tr>
<tr>
<td><strong>Bile Acid Sequestrants</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(colesevelam, cholestyramine, colestipol)</td>
<td>↓15-30%</td>
<td>↑3-5%</td>
<td>0 or ↑</td>
</tr>
<tr>
<td><strong>Nicotinic Acid</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ER or IR niasin)</td>
<td>↓5-25%</td>
<td>↑15-35%</td>
<td>↓20-50%</td>
</tr>
<tr>
<td><strong>Fibric Acid Derivatives</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(bezafibrate, gemfibrozil, fenofibrate)</td>
<td>↓5-20 or ↑</td>
<td>↑10-20%</td>
<td>↓20-50%</td>
</tr>
<tr>
<td><strong>Cholesterol Absorption Inhibitor</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ezetimibe)</td>
<td>↓18%</td>
<td>↑1%</td>
<td>↓7%</td>
</tr>
</tbody>
</table>

Case Studies in Dyslipidemia: Evidence-Based Strategies

Evidence-Based Medicine is...

“A conscientious, explicit, and judicious use of current best evidence to make decisions about the care of individual patients.”

CASE #1
DA is a 69-year-old man who is recovering from an MI that occurred 6 months ago.

PMH: Hypertension
SH: does not smoke, exercises 3 times/week, follows a DASH eating plan
Meds: Lisinopril 10 mg daily, atenolol 50 mg daily, aspirin 81 mg daily
Vitals: BP: 126/78 mm Hg
wt = 182#, ht = 72", waist circ: 36"
Labs: Fasting Labs:
TC = 150 mg/dL, HDL-C = 35 mg/dL
LDL-C = 95 mg/dL, TGs = 100 mg/dL
all other labs, within normal limits

CASE #1: Clinical Considerations

• High risk – has known CHD
• LDL-C goal of < 100 mg/dL is attained while on no lipid-lowering therapy
• Further risk reduction is needed with statin therapy

Statin-Based Outcomes Trials

Am J Cardiol. 1998;82:53Q-12Q.
Cholesterol Treatment Trialists' Collaborators

- Meta-analysis, 14 randomized controlled trials (n=90,056)

**Major Vascular Events (per 1 mmol/L LDL-C reduction)**

- Cancer incidence
  - RR 1.00 (0.95-1.06)
- Rhabdomyolysis
  - Statin: 9 of 39,884 (0.023%)
  - Control: 6 of 39,817 (0.015%)

**VASCULAR EVENTS**

- Double-blind trial in 20,536 patients at high risk for vascular events (CHD, stroke, diabetes)
- Randomized to placebo or simvastatin 40 mg daily for 5 years

**CASE #1:**

**Pharmacotherapy Options**

- Statin therapy needed to reduce CV risk
- Dose sufficient to lower LDL-C 30-40%

- Potential additions:
  - Statin monotherapy (e.g., atorvastatin 10 mg daily, lovastatin 40 mg daily, rosuvastatin 10 mg daily, simvastatin 20 mg daily)
  - Ezetimibe/simvastatin 10/10 mg daily
  - Extended-release niacin with statin
CASE #2

DT is a 49-year-old man who started statin therapy last year.

PMH: Hypertension, dyslipidemia

SH: 1-2 beers/daily, smokes, no exercise, 2400 KCal diet (low fat and cholesterol)

Meds: HCTZ 25 mg daily, simvastatin 20 mg daily

Vitals: BP: 136/84 mm Hg

wt = 190#, ht = 70", waist circ: 30"

Labs: Fasting Labs:

TC = 187 mg/dL, HDL-C = 40 mg/dL

LDL-C = 120 mg/dL, TGs = 125 mg/dL

glucose 105 mg/dL

hs-CRP = 4.1 mg/L

tall other labs, within normal limits

Risk Assessment Tool for Estimating Your 10-year Risk of Having a Heart Attack

The risk assessment tool below uses information from the Framingham Heart Study to predict a person's chance of having a heart attack in the next 10 years. This tool is designed for adults aged 20 and older who do not have heart disease or diabetes. To find your risk score, enter your information in the calculator below.

Age:

Gender:

Total Cholesterol:

HDL Cholesterol:

Smoker:

Systolic Blood Pressure:

Are you currently on any medication to treat high blood pressure:

Calculate Year 10 Year Risk


Information about your risk score:

Age: 49

Gender: male

Total Cholesterol: 187 mg/dL

HDL Cholesterol: 40 mg/dL

Smoker: yes

Systolic Blood Pressure: 136 mmHg

On medication to treat high blood pressure: yes

Risk Score: 15%

Means 15 of 100 people with this level of risk will have a heart attack in the next 10 years.

* Year risk score was calculated using an equation. Other MBD products, such as print or other media, are not a complete guide to risk score. To learn more, go to "Living Better, Living Longer" guidelines.

CASE #2: Clinical Considerations

- Moderately high risk - Multiple CV risk factors with a Framingham Risk Score of 15%
- Metabolic syndrome, elevated hs-CRP
- LDL-C goal should be which of the following:
  - < 130 mg/dL
  - or
  - < 100 mg/dL (therapeutic option)

Moderately High-risk

- Therapeutic option: LDL-C goal <100 mg/dL
- Utilize drug therapy that lowers LDL-C by 30-40%
- Factors that influence using an LDL lowering drug when LDL-C is <130 mg/dL
  - Advancing age
  - More than 2 risk factors or severe risk factors
  - High TG with elevated non-HDL-C
  - Low HDL-C
  - Metabolic syndrome
  - Presence of “emerging risk factors” (hs-CRP >3 mg/L)

ASCOT-Lipid Lowering Arm

- 10,305 primary prevention patients, multiple CV risk factors randomized to placebo or atorvastatin 10 mg daily for 3.3 yrs
- Mean baseline LDL 133 mg/dL decreased to 90 mg/dL
- 36% reduction
- p=0.0005
- ARR = 1.1%
- NNT = 91


CASE #2: Pharmacotherapy Options

- Will require 20% additional LDL-C reduction to attain goal of < 100 mg/dL
- Potential regimen modifications:
  - Change to a higher potency statin regimen
  - Add ezetimibe
  - Add a bile acid sequestrant
  - Add nicotinic acid

STELLAR Trial

- 6-week, parallel groups, open-label study (n=2431)
- Ezetimibe added to a Statin
- Double-blind controlled trial
- 769 patients not at LDL goal while on statin monotherapy
- Randomized to placebo or ezetimibe 10 mg daily

Ezetimibe added to a Statin

- "P < 0.001 for differences"
Ezetimibe/Simvastatin vs Atorvastatin

![Graph showing LDL-C reduction (%)](image)

- EZ/Simv 10/20mg
- EZ/Simv 10/40mg
- Atorva 40mg
- EZ/Simv 10/40mg
- Atrova 80mg
- Atorva 10mg
- EZ/Simv 10/10mg
- Atorva 20mg
- EZ/Simv 10/80

**LDL-C Reduction (%)**

- 49.1
- 52.5
- 37.2
- 46.1
- 44.3
- 59.4
- 50.3
- 55.6
- 50.2
- 54.3

-40
-30
-20
-10
0
10
20
30
40
50
60

*B p< 0.05 vs placebo
# p< 0.05 vs individual agents alone

**Bile Acid Sequestrant added to Statin**

![Graph showing Mean LDL-C change (%)](image)

- Placebo (n=33)
- Simvastatin 10 mg/d (n=37)
- Simvastatin 20 mg/d (n=35)
- Colesevelam 2.3 g/d + Simvastatin 20 mg/d (n=37)
- Colesevelam 3.8 g/d + Simvastatin 10 mg/d (n=34)

Mean LDL-C Change (%)

-40
-35
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
35
40

* p< 0.05 vs placebo
# p< 0.05 vs individual agents alone

**Bile Acid Sequestrant Outcomes Data**

- **LRC - Primary Prevention Trial (n=3086):**
  - Cholestyramine reduced fatal CHD + nonfatal MI 19% versus placebo over 7.4 yrs (7.0 vs. 8.6%, p<0.05)

- **FATS Trial (n=146):**
  - Intensive LDL-C lowering in CHD patients using colestipol with lovastatin or niacin lowered CV event risk versus conventional therapy (HR= 0.27, 0.10 to 0.77)
**Adding ER Niacin to a Statin**

![Bar Chart](image)

**HATS Trial**
- Randomized, double-blind, trial in 160 patients with CHD for 3 years
- Primary end point:
  - First CV event (CV death, nonfatal MI, stroke, or revascularization)

![Bar Chart](image)

**CASE #2: Pharmacotherapy Options**
- Potential regimen modifications:
  - Higher potency statin regimen
  - Add ezetimibe
  - Add a bile acid sequestrant
  - Add nicotinic acid
CASE #3
OB is a 62-year-old woman on statin therapy for 2 years.

PMH: Hypertension, dyslipidemia, type 2 DM, chronic stable angina
SH: no ethanol or smoking, 2000 Kcal ADA diet
Meds: HCTZ/irbesartan 300/25 mg daily, aspirin 81 mg daily, metoprolol 100 mg BID, atorvastatin 10 mg daily, metformin 1000 mg BID
Vitals: BP: 120/74 mm Hg, HR 60 beats/min
wt = 165#, ht = 64”, waist circ: 40”
Labs: TC = 175 mg/dL, HDL-C = 35 mg/dL
LDL-C = 94 mg/dL, TGs = 230 mg/dL
S.creat = 1.0 mg/dL, A1C = 6.5 mg/dL
all other labs, within normal limits

CASE #3: Clinical Considerations

- Very high risk – CHD, type 2 diabetes, and metabolic syndrome
- Receiving “standard dose” statin therapy
- LDL-C goal should be which of the following:
  < 100 mg/dL and now target
  Non-HDL <130 mg/dL
  or
  < 70 mg/dL (therapeutic option)

Very High Risk
- Factors that favor the therapeutic option
  LDL-C goal < 70 mg/dL:
  - Established atherosclerotic vascular disease
    plus one of the following:
    1. Multiple major risk factors (esp. diabetes)
    2. Severe and poorly controlled risk factors (esp. cigarette smoking)
    3. Multiple risk factors of the metabolic syndrome
    4. Acute coronary syndrome

**Treat to New Targets (TNT) Trial**

- 10,001 patients with CHD and LDL-C <130mg/dL randomized to atorvastatin 10 mg or 80 mg daily for 5 yrs

![Graph showing comparison of 10 mg and 80 mg atorvastatin on major CV event (%).](image)

- HR = 0.78 (0.69–0.89), p<0.001

**CASE #3: Pharmacotherapy Options**

- Potential regimen modifications:
  - **LDL-C reduction**:
    - Higher potency statin regimen
    - Add ezetimibe
    - Add a bile acid sequestrant
    - Add nicotinic acid
  - **non-HDL reduction**:
    - Higher potency statin regimen
    - Add ezetimibe
    - Add a nicotinic acid
    - Add a fibrate

**Veterans Affairs HDL Intervention Trial (VA-HIT)**

- 2531 men with CHD randomized to placebo or gemfibrozil 1200 mg/day x 5.1 yrs
- Lipid differences placebo vs. gemfibrozil:
  - HDL: 32 vs. 34
  - LDL: 113 vs. 113
  - TG: 168 vs. 115

![Graph showing comparison of placebo and gemfibrozil on CV death and nonfatal MI (%).](image)

- ARR = 4.4%
- NNT = 23
Risks of Statin Combination Therapy

- 3,339 case reports of rhabdomyolysis with statins from 1990-2002; 38% were associated with concurrent fibrate therapy
- Statin/Fibrate:
  - Controlled clinical trials (n=600): 1% incidence of CK > 3 x ULN, with no cases of rhabdomyolysis
  - Low to moderate dose statin with fibrate has a low risk of myopathy
  - Interaction most problematic with gemfibrozil
- Statin/Niacin:
  - Lower risk for myopathy than statin/fibrate

Statin/Fibrate Interaction

- Facts about gemfibrozil:
  - Known to ↑ risk of rhabdomyolysis with statins
  - Inhibits hepatic glucuronidation of certain statins
  - Reduced maximum statin dose in combination:
    - Lovastatin 20 mg daily
    - Rosuvastatin 10 mg daily
    - Simvastatin 10 mg daily
  - Fenofibrate does not inhibit glucuronidation

CASE #3: Pharmacotherapy Options

- Potential regimen modifications:
  - LDL-C reduction
    - Higher potency statin regimen
    - Add ezetimibe
    - Add a bile acid sequestrant
    - Add nicotinic acid
  - non-HDL reduction
    - Higher potency statin regimen
    - Add a nicotinic acid
    - Add a fibrate
Questions and Discussion

- We welcome your questions.
- Staff will collect all written question cards.
- Please approach the standing microphones in the aisle.
- Please complete the program evaluation and hand to staff as you exit.
- Thank you for your attention.
- Join us again for CE in the Mornings.
REFERENCES


Faculty Disclosure Statements
ASHP Advantage requires that faculty members disclose any relationships (e.g., shareholder, recipient of research grant, consultant or member of an advisory committee) that the faculty may have with commercial companies whose products or services may be mentioned in their presentations. The existence of these relationships is provided for the information of attendees and should not be assumed to have an adverse impact on faculty presentations. The faculty reports the following relationships:

Joseph Saseen, Pharm.D., BCPS, FCCP
Dr. Saseen reports that he serves on the speakers’ bureau for Sankyo Pharma and AstraZeneca.

Mark J. Cziraky, Pharm.D., FAHA
Dr. Cziraky reports that he does not have any relationships to disclose.