TRANSFERABILITY OF ECONOMIC EVALUATION STUDIES:
IS THERE A GENERALLY ACCEPTED ALTERNATIVE PRICE BENCHMARK TO THE WAC PRICE?
Outline

• Background (Joey Mattingly)
  – Drug Supply Chain
  – ISPOR Panel Taskforce Recommendations
• Alternatives to WAC (Joe Levy)
  – Current practice
  – Different measures
  – Way forward?
• Case-study/Model (Julia Slejko)
• Policy/Regulatory Implications (Nneka Onwudiwe)
• Moderated Discussion (Joey Mattingly)
Background

Joey Mattingly  PharmD,
MBA
A simple model…
ISPOR Drug Cost Task Force

- Fully transparent
- Reflect the net payment most relevant to the CEA perspective
  - **Payer Perspective**: cost net rebates/discounts, copays
    - Noted difficulties in estimating this with existing benchmarks
  - **Third Party Payer**: Rebates ~7.5% of catalog price (WAC) for brand drugs but with wide variation. (FTC 2003)
    - Suggest 15% Base-case rebates with uncertainty 5-25% depending on tier and in class competition, greater for generics.
  - **Societal Perspective**: a fraction of average sales price as a proxy for opportunity costs?

2nd Panel

- Recommends Healthcare Sector and Societal Perspective
- Briefly discusses drug cost estimates, advocates Federal Supply Schedule
- Does not discuss uncertainty driven by payer differences
Drug Price Roulette: Round 1

Patient

Usual & Customary (U&C) + Dispensing Fee

Average Wholesale Price (AWP)

Wholesale Acquisition Cost (WAC)

CVS/Caremark

Walgreens

AmerisourceBergen

MERCK
Drug Price Roulette: Round 2

- Patient
  - Usual & Customary (U&C) + Dispensing Fee
- CVS/Pharmacy
  - Average Wholesale Price (AWP)
- McKesson
  - Wholesale Acquisition Cost (WAC)
- Gilead
Drug Price Roulette: Round 3

340B

Patient

Usual & Customary (U&C) + Dispensing Fee

Walgreens

Average Wholesale Price (AWP)

Cardinal Health

Wholesale Acquisition Cost (WAC)

Lilly
Possible Alternatives to WAC?

Joseph Levy
Outline

• See what practitioners are doing
• What is WAC?
• What are alternatives?
  – NADAC: National Average Drug Acquisition Cost
  – FSS: Federal Supply Schedule
  – ASP: Average Sales Price
• New approach?
Published CEA Basecase Drug Cost (N=37)

2016-Present

- ASP: 5
- AWP-: 4
- FSS: 4
- NADAC: 2
- WAC: 22
Wholesale Acquisition Cost (WAC)

Manufacturer supplied list price of the wholesalers purchase from the manufacturer

- ...as published by First Databank (FDB), WAC represents the manufacturer's published catalog or list price for a drug product to wholesalers as reported by the manufacturer.
- **WAC does not represent actual transaction prices and does not include prompt pay or other discounts, rebates or reductions in price.**
- FDB does not perform [...] analysis of actual transaction prices for purposes of reporting WAC.
- FDB relies on manufacturers report for the WAC data field.

# Wholesale Acquisition Cost (WAC)

Manufacturer supplied list price of the wholesalers purchase from the manufacturer.

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is a starting point for drug cost negotiations. Some state Medicaid agencies use 100% WAC.</td>
<td>Is the list price of a purchase that is not of interest</td>
</tr>
<tr>
<td>Is lower than AWP?</td>
<td>Commercial databases</td>
</tr>
<tr>
<td>Is used frequently?</td>
<td>Hard to select a single, or representative NDC (especially true of generics)</td>
</tr>
</tbody>
</table>
National Average Drug Acquisition Cost (NADAC)

The surveyed price pharmacies pay to acquire a given drug ‘weighted’ by utilization

• Meant to inform state Medicaid agencies what to reimburse pharmacies
• Weighted average pharmacies pay to acquire a unit of a given drug group (i.e. different NDCs that contain the same things)
• Based on monthly national survey, collects pharmacy invoices
• The NADAC does not reflect the payers dispensing fee or rebates provided by drug manufacturers
National Average Drug Acquisition Cost (NADAC)

The surveyed price pharmacies pay to acquire a given drug ‘weighted’ by utilization

<table>
<thead>
<tr>
<th>NDC</th>
<th>Product Name</th>
<th>Observed in Survey</th>
<th>Unit Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>xxxxxx-xxxx-01</td>
<td>Drug A 360MG CAP</td>
<td>50</td>
<td>0.285</td>
</tr>
<tr>
<td>xxxxxx-xxxx-02</td>
<td>Drug A 360MG CAP</td>
<td>40</td>
<td>0.190</td>
</tr>
<tr>
<td>yyyy-yyyy-01</td>
<td>Drug A 360MG CAP</td>
<td>30</td>
<td>0.297</td>
</tr>
<tr>
<td>yyyy-yyyy-02</td>
<td>Drug A 360MG CAP</td>
<td>20</td>
<td>0.250</td>
</tr>
<tr>
<td>yyyy-yyyy-yyyy-02</td>
<td>Drug A 360MG CAP</td>
<td>10</td>
<td>0.568</td>
</tr>
</tbody>
</table>
# National Average Drug Acquisition Cost (NADAC)

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<th>NDC</th>
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<th>Unit Cost</th>
<th>NADAC ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>xxxxxx-xxxx-01</td>
<td>Drug A 360MG CAP</td>
<td>50</td>
<td>0.285</td>
<td>0.276</td>
</tr>
<tr>
<td>xxxxxx-xxxx-02</td>
<td>Drug A 360MG CAP</td>
<td>40</td>
<td>0.190</td>
<td>0.276</td>
</tr>
<tr>
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<td>10</td>
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<td>0.276</td>
</tr>
</tbody>
</table>

\[
NADAC_G = \frac{\sum_{i=1}^{5} observed_i \ast unitcost_i}{\sum_{i=1}^{5} observed_i}
\]
# National Average Drug Acquisition Cost (NADAC)

The surveyed price pharmacies pay to acquire a given drug ‘weighted’ by utilization.

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>NADAC is a weighted estimate of what pharmacies are actually paying to acquire drugs (after discounts)</td>
<td>An estimate of a transaction not necessarily of interest</td>
</tr>
<tr>
<td>Payers will pay at least this much to the pharmacy to acquire the drug</td>
<td>Does not at all account for rebates payers will likely get from manufacturers</td>
</tr>
<tr>
<td></td>
<td>Sampling strategy, response rate and raw data not reported. Non-response could lead to bias (low)</td>
</tr>
<tr>
<td></td>
<td>Not all discounts captured (high)</td>
</tr>
</tbody>
</table>
Diagram showing the supply chain from Payer to Patient:

1. Payer
2. Wholesaler
3. Manufacturer
4. Pharmacy
5. National Average Drug Acquisition Cost (NADAC)
VA Federal Supply Schedule

The price the VA has negotiated to acquire drugs from manufacturers

- The Federal Supply Schedule (FSS) is negotiated by the Dept. of Veterans Affairs on behalf of all federal direct payers
- For certain drugs the VA receives even lower prices for the big 4 public payers: “Big 4 Price”
- Through preferred formulary placement, can achieve even lower cost in some drugs “National Contract Price”
  - VAFSS=Minimum(FSS, Big4, NCP)
- Excluded from the “Best Price”; a metric that is the basis of manufacturer rebates paid to Medicaid (CBO 2005)
## VA Federal Supply Schedule

The price the VA has negotiated to acquire drugs from manufacturers

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>The actual cost to a real payer (i.e. the transaction we want)</td>
<td>By statute, and exclusion from the computation of the ‘best price’ is one of the lowest prices available to any payer. Possibly too low?</td>
</tr>
<tr>
<td>Freely available, online, query system</td>
<td>Prices can vary on package size, manufacturer</td>
</tr>
<tr>
<td></td>
<td>Unclear how timely the price is</td>
</tr>
</tbody>
</table>
VA Federal Supply Schedule (VAFSS)

- Patient
- Pharmacy
- Wholesaler
- Manufacturer

VA
## Average Sales Price (ASP)

The price paid by Medicare for Part B (physician administered) drugs

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>The actual price Medicare Part B pays to acquire certain drugs</td>
<td>Only for Medicare Part B drugs</td>
</tr>
<tr>
<td>Based on quarterly sales data provided by manufacturers:</td>
<td>Cost to Medicare only, different payers will be higher and lower</td>
</tr>
<tr>
<td>( \text{Gross Sales} - (\text{Discounts} + \text{Chargebacks} + \text{Rebates}) )</td>
<td></td>
</tr>
<tr>
<td>( \text{Total Units Sold} \times \text{Medicare Reimburses} = 106% \text{ of ASP} )</td>
<td></td>
</tr>
<tr>
<td>Freely available quarterly</td>
<td>Unclear if it is fair to compare Part B drugs with non-part B drugs in CEA.</td>
</tr>
<tr>
<td></td>
<td>(WAC vs ASP?)</td>
</tr>
</tbody>
</table>
Medicare Part B

Average Sales Price (ASP)

Patient

Pharmacy

Wholesaler

Manufacturer
A solution?
Levy et al. 2017 Working Paper

A Transparent and Consistent Approach to Assess US Outpatient Drug Costs for Use in Cost-Effectiveness Analyses

• Use the spread between NADAC and VAFSS
  – Upper Bound=NADAC
  – Lower Bound=VAFSS

• Use Midpoint between NADAC and VAFSS as Base-Case

• Base-Case is approximately 26% less than WAC for brands
  – But with substantial variation between products

• Base-Case is approximately 32% less than WAC for generics
  – With even more variation between products
Case Study

Julia F. Slejko PhD
Obtaining Drug Costs

• Example: 40mg Atorvastatin (generic)
  – WAC from Redbook
  – NADAC
  – VAFSS
Export to Excel.
Find lowest unit price.

Lowest WAC unit price: $0.18/40mg
Choose desired survey time period.
- Most recent is often useful.
NADAC

List of NDCs for product/strength

Average unit price across all NDCs: $0.12/40mg
VAFSS

https://www.va.gov/nac/pharma/list
VAFSS: $0.04/40mg

Export to Excel to calculate unit price and minimums.

Four Prices:
- FSS
- NC
- Big 4

<table>
<thead>
<tr>
<th>NDC</th>
<th>PKS</th>
<th>CONTRACT NUMBER</th>
<th>PV VENDOR</th>
<th>GENERIC NAME</th>
<th>TRADE NAME</th>
<th>FSS PRICE</th>
<th>REC PRICE</th>
<th>HSC PRICE</th>
<th>REG PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0479-0953-09</td>
<td>99</td>
<td>04797-16-C3929</td>
<td>Mylan Phr</td>
<td>ATORVASTATIN CA 80MG TAB</td>
<td>ATORVASTATIN CA 80MG TAB</td>
<td>10.00</td>
<td>9.28</td>
<td>10.00</td>
<td>10.00</td>
</tr>
<tr>
<td>0479-0953-07</td>
<td>500</td>
<td>04797-16-C2029</td>
<td>Mylan Phr</td>
<td>ATORVASTATIN CA 80MG TAB</td>
<td>ATORVASTATIN CA 80MG TAB</td>
<td>10.00</td>
<td>7.00</td>
<td>10.00</td>
<td>10.00</td>
</tr>
<tr>
<td>0479-0953-05</td>
<td>500</td>
<td>04797-16-C2029</td>
<td>Mylan Phr</td>
<td>ATORVASTATIN CA 80MG TAB</td>
<td>ATORVASTATIN CA 80MG TAB</td>
<td>10.00</td>
<td>6.75</td>
<td>10.00</td>
<td>10.00</td>
</tr>
<tr>
<td>0479-0953-59</td>
<td>99</td>
<td>04797-16-C2029</td>
<td>Mylan Phr</td>
<td>ATORVASTATIN CA 80MG TAB</td>
<td>ATORVASTATIN CA 80MG TAB</td>
<td>10.00</td>
<td>6.42</td>
<td>10.00</td>
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<td>10.00</td>
<td>10.00</td>
</tr>
</tbody>
</table>
# Comparison of Three Sources

<table>
<thead>
<tr>
<th></th>
<th>Cost per Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WAC</td>
</tr>
<tr>
<td>Atorvastatin 40mg</td>
<td>$0.30</td>
</tr>
</tbody>
</table>
Modeling Example

• Simple model for illustrative purposes:
  – Branded “Drug A” for chronic condition, vs. usual care
  – Reduces acute events, which cost $10,000/ea
  – Initial age 55 years, lifetime horizon
## Drug Price Inputs

<table>
<thead>
<tr>
<th></th>
<th>WAC</th>
<th>NADAC</th>
<th>VAFSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drug A</td>
<td>$12.27</td>
<td>$11.80</td>
<td>$5.68</td>
</tr>
</tbody>
</table>
## Model Inputs

<table>
<thead>
<tr>
<th>Drug A Cost Source</th>
<th>Base Case</th>
<th>S.A. Range +/- 10%</th>
<th>Uncertainty Range VAFSS-NADAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>WAC</td>
<td>$12.27</td>
<td>$11.04-$13.50</td>
<td></td>
</tr>
<tr>
<td>NADAC</td>
<td>$11.80</td>
<td>$10.62-$12.98</td>
<td></td>
</tr>
<tr>
<td>VAFSS</td>
<td>$5.68</td>
<td>$5.11-$6.25</td>
<td>$5.68-$11.80</td>
</tr>
<tr>
<td>Midpoint of VAFSS-NADAC</td>
<td>$8.74</td>
<td>$7.87-$9.61</td>
<td></td>
</tr>
</tbody>
</table>
Example Model Results

Base Case Results

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Usual Care</td>
<td>$23,880</td>
<td></td>
<td>7.149</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drug A</td>
<td>$36,146</td>
<td>$12,265</td>
<td>7.463</td>
<td>0.314</td>
<td>$39,089/QALY</td>
</tr>
</tbody>
</table>

Use midpoint of VAFSS/NADAC for base case: $8.74

One-Way Sensitivity Analysis & Uncertainty Analysis

$8.74 +/- 10% for Sensitivity Analysis

VAFSS-NADAC Range for Uncertainty Analysis
### Base Case Results

<table>
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<tr>
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### One-Way Sensitivity Analysis & Uncertainty Analysis

Use midpoint of VAFSS/NADAC : $8.74

WAC: $12.27

Midpoint vs. WAC +/- 10% for Sensitivity Analysis
Download Handout

https://goo.gl/lMKsbT