



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

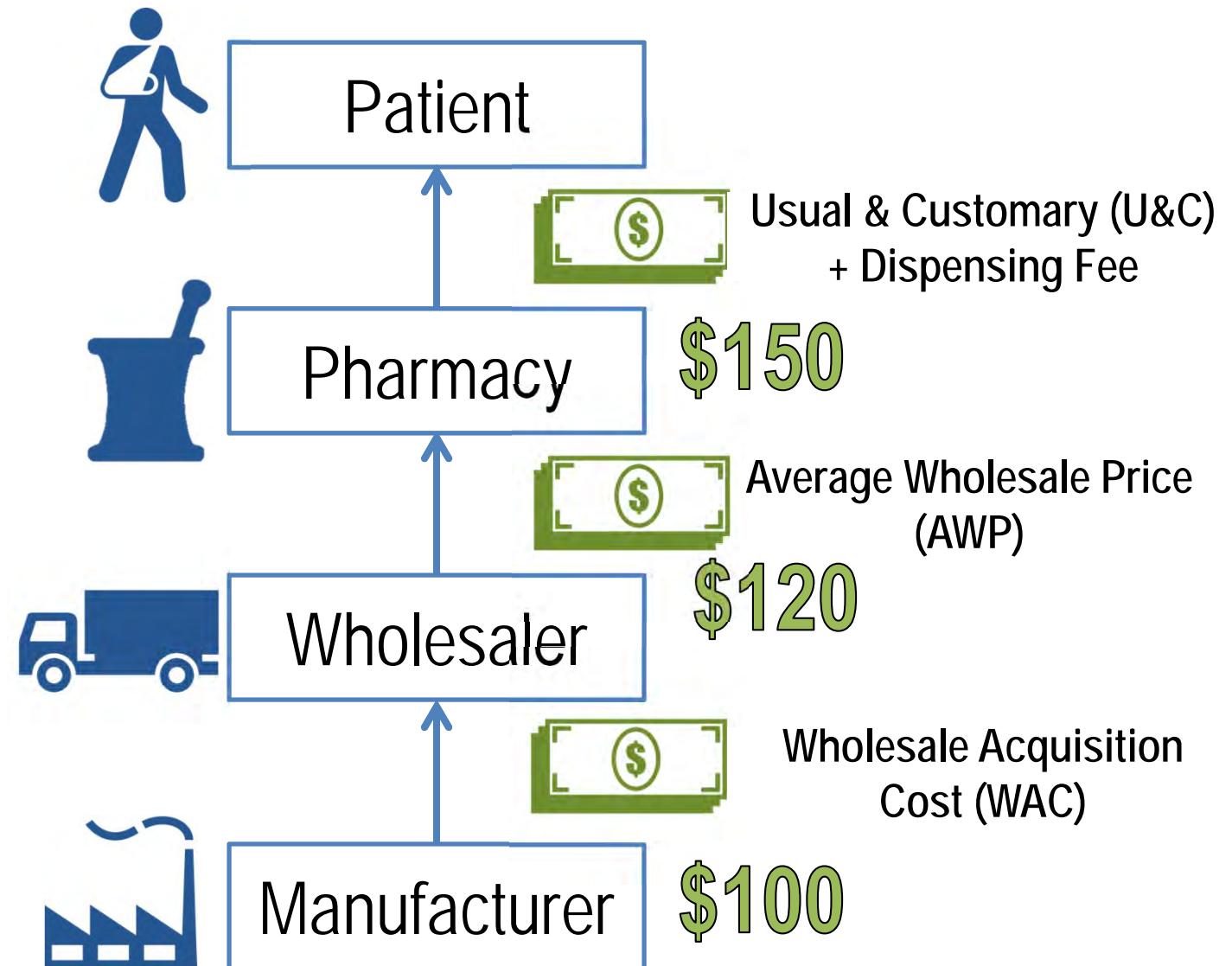
Outline

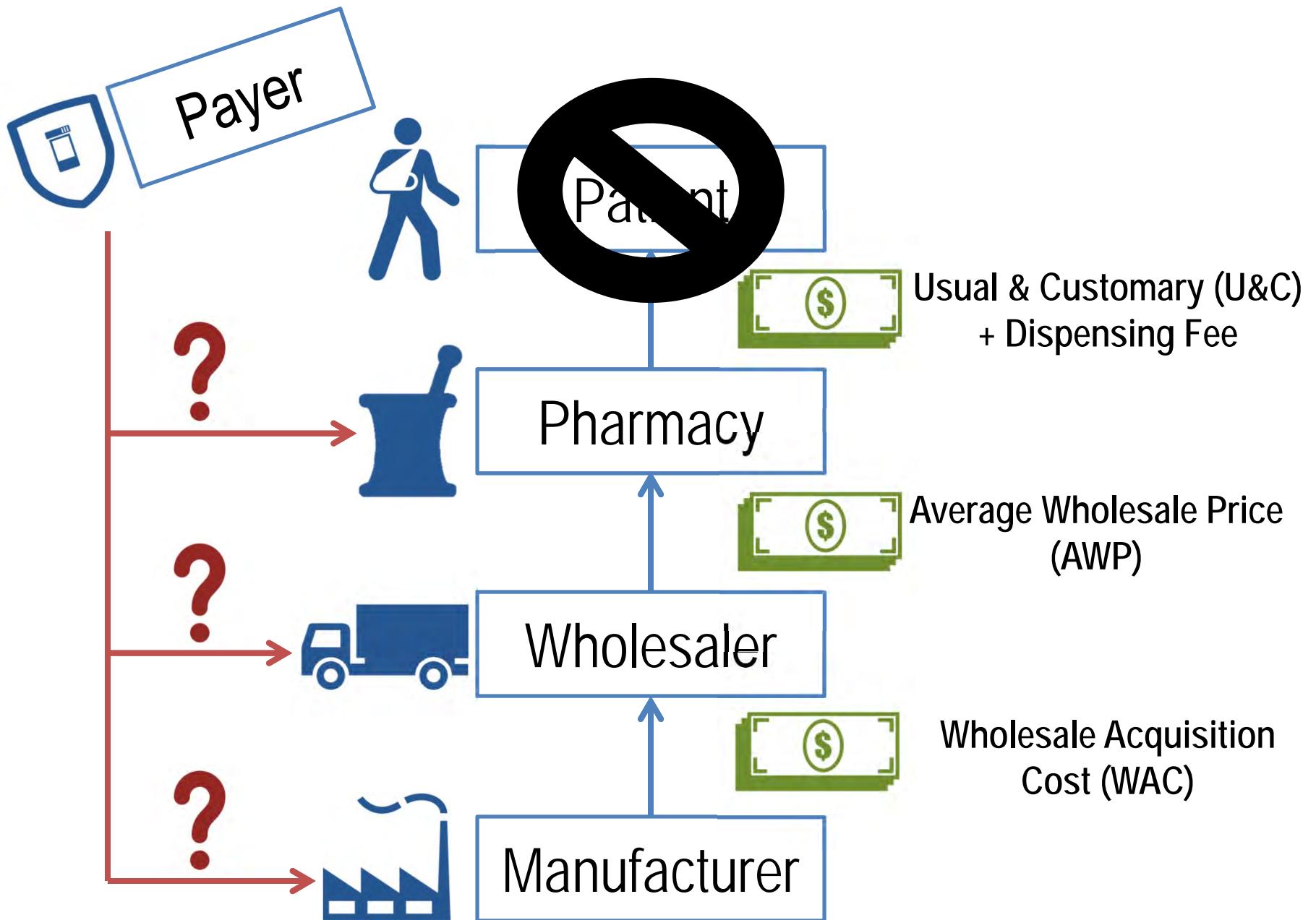
- Background (Joey Mattingly)
 - Drug Supply Chain
 - ISPOR Panel Taskforce Recommendations
- Alternatives to WAC (Joe Levy)
 - Current practice
 - Different measures
 - Way forward?
- Case-study/Model (Julia Slejko)
- Policy/Regulatory Implications (Nneka Onwudiwe)
- Moderated Discussion (Joey Mattingly)

Background

Joey Mattingly **PharmD,**
MBA

A simple model...



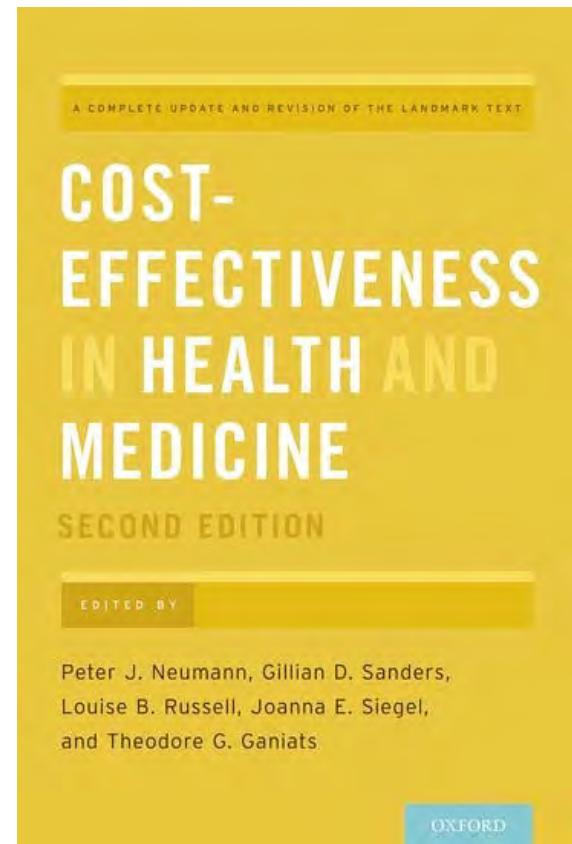


ISPOR Drug Cost Task Force

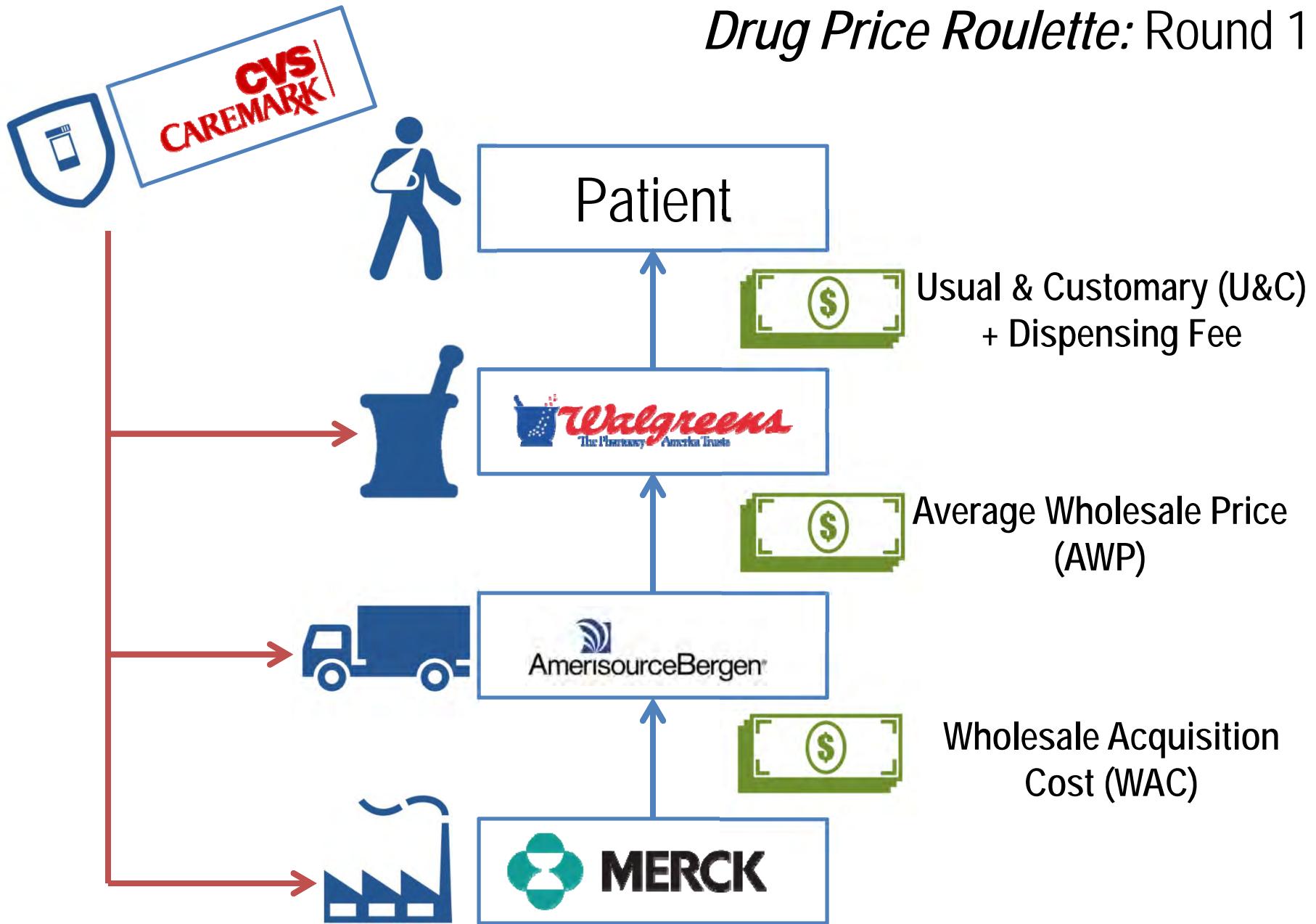
- Fully transparent
- Reflect the net payment most relevant to the CEA perspective
 - **Payer Perspective:** cost net rebates/discounts, copays
 - Noted difficulties in estimating this with existing benchmarks
 - **Third Party Payer:** Rebates ~7.5% of catalog price (WAC) for brand drugs but with wide 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

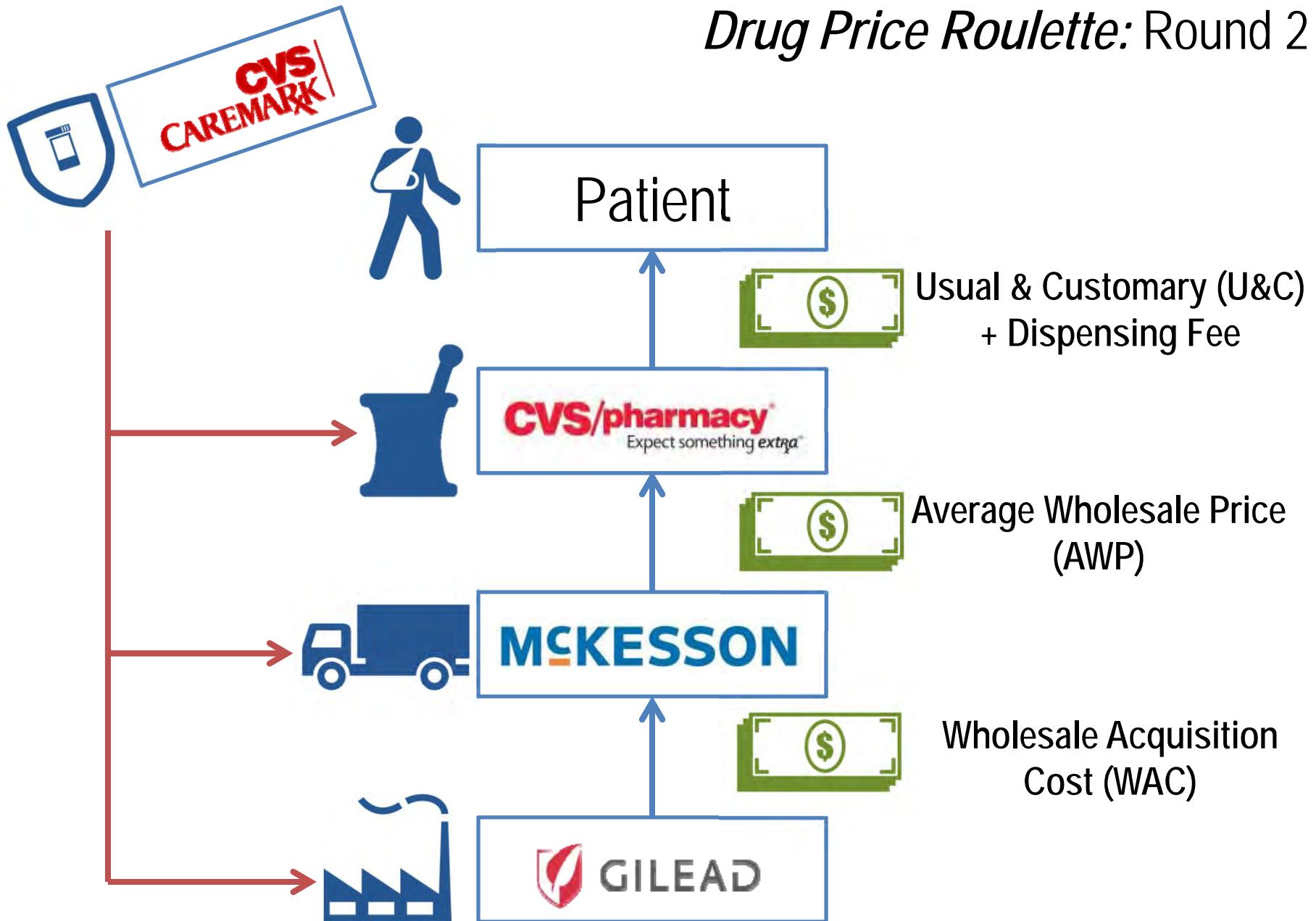
- Recommends Healthcare Sector and Societal Perspective
- Briefly discusses drug cost estimates, advocates Federal Supply Schedule
- Does not discuss uncertainty driven by payer differences



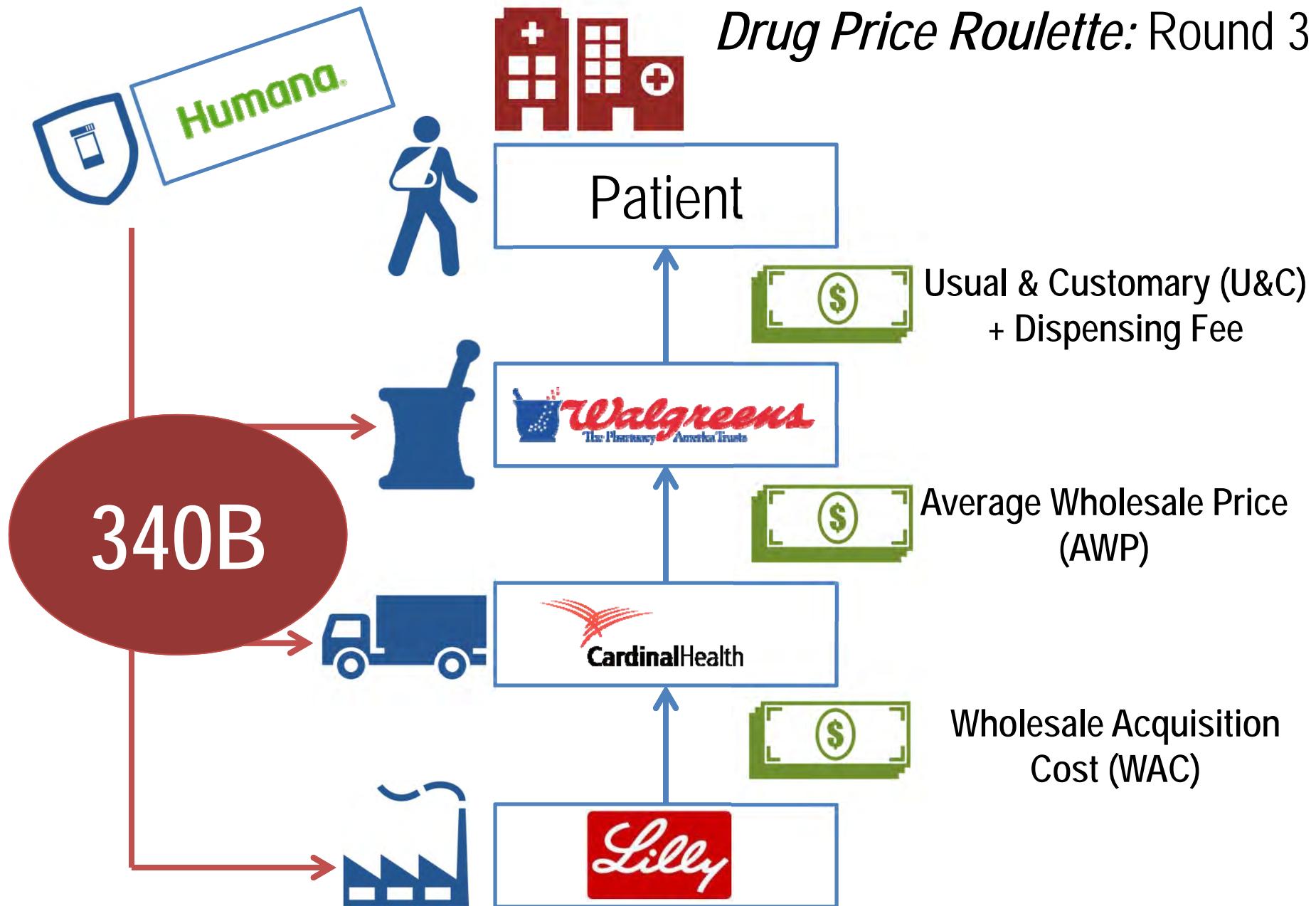
Drug Price Roulette: Round 1



Drug Price Roulette: Round 2



Drug Price Roulette: Round 3



Possible Alternatives to WAC?

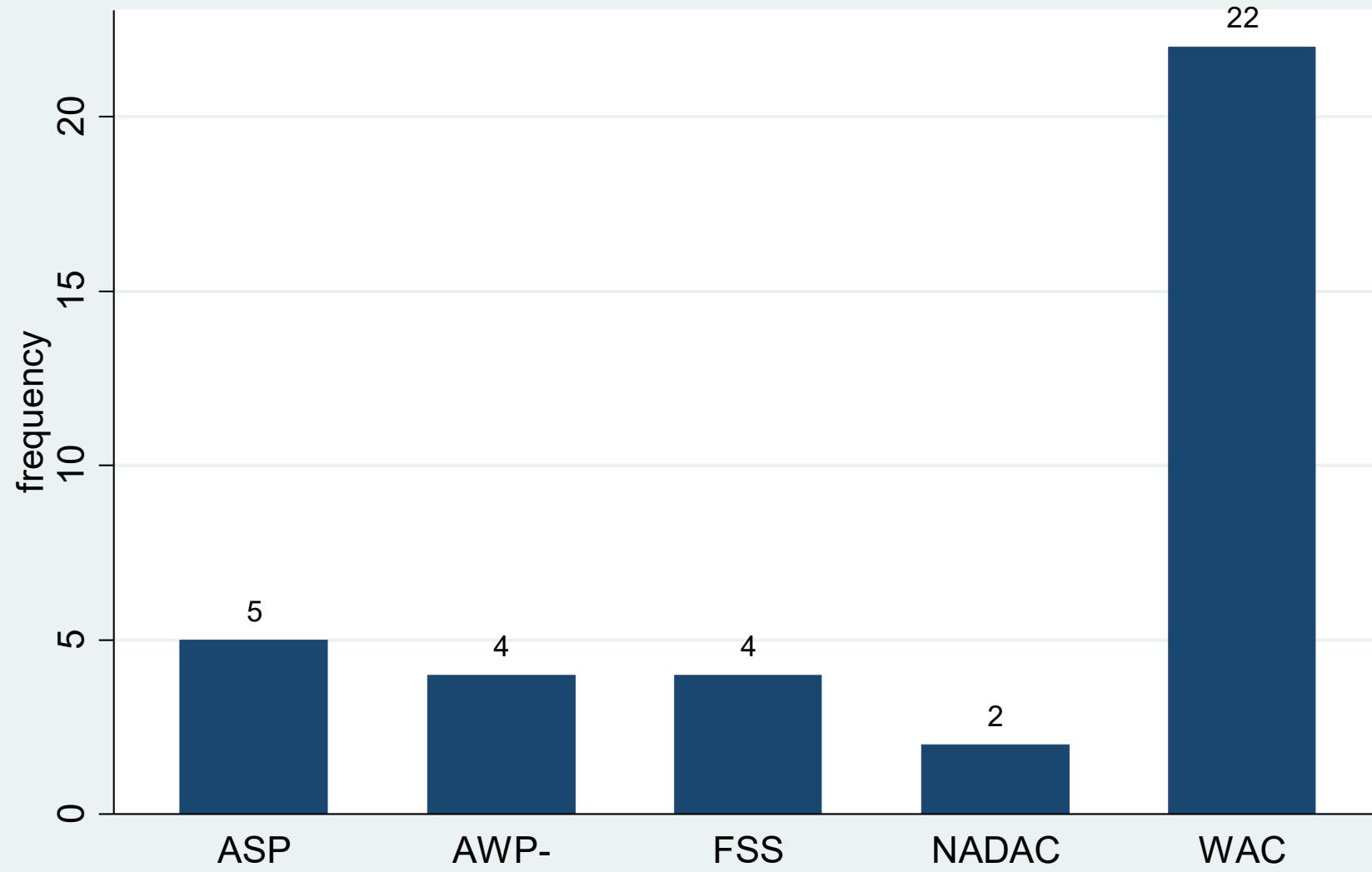
Joseph Levy

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



Wholesale Acquisition Cost (WAC)

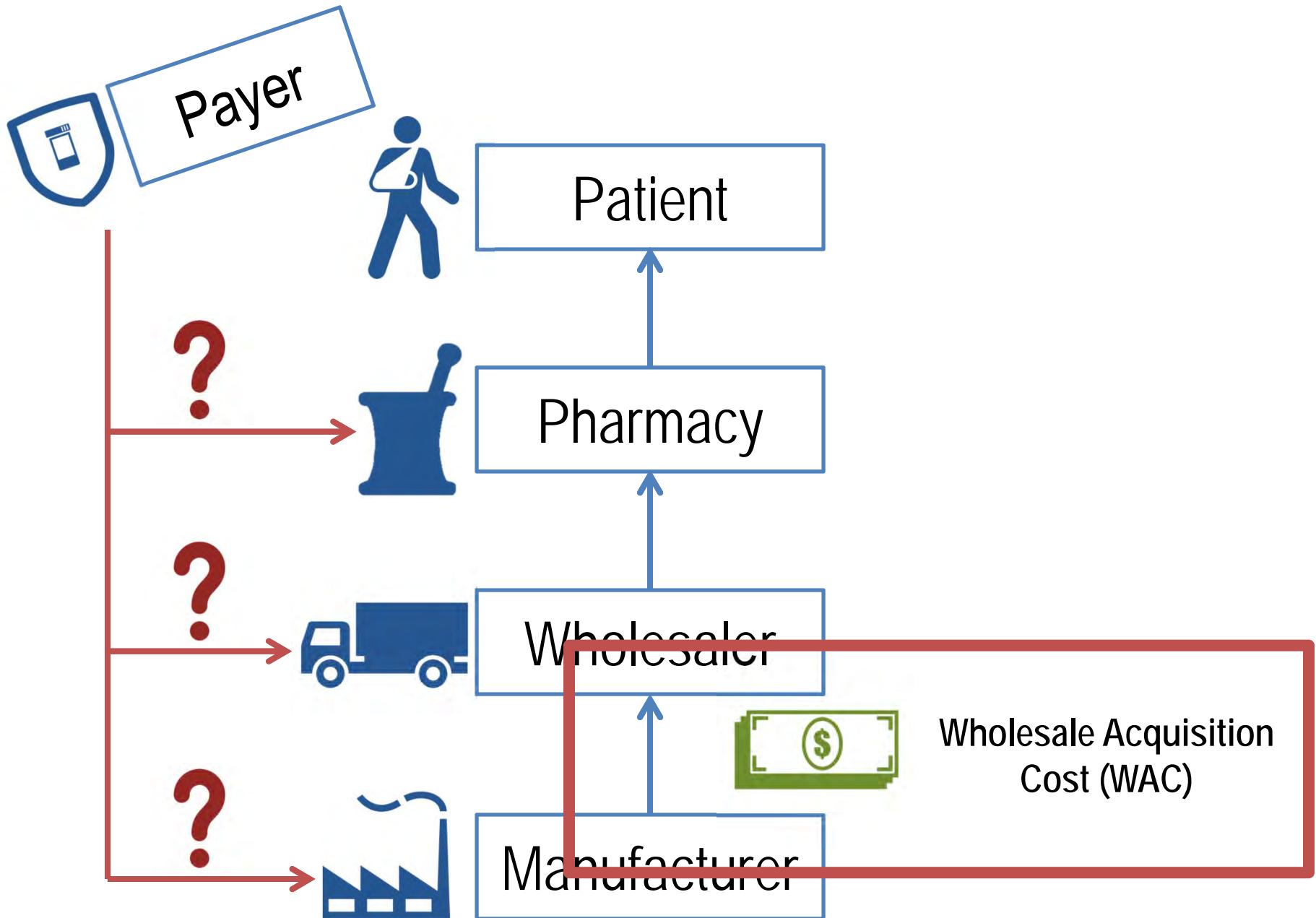
Manufacturer supplied list price of the wholesalers purchase from the manufacturer

- ...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

Advantages	Disadvantages
Is a starting point for drug cost negotiations. Some state Medicaid agencies use 100% WAC.	Is the list price of a purchase that is not of interest
Is lower than AWP?	Commercial databases
Is used frequently?	Hard to select a single, or representative NDC (especially true of generics)



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

NDC	Product Name	Observed in Survey	Unit Cost
xxxxx-xxxx-01	Drug A 360MG CAP	50	0.285
xxxxx-xxxx-02	Drug A 360MG CAP	40	0.190
yyyyy-yyyy-01	Drug A 360MG CAP	30	0.297
yyyyy-yyyy-02	Drug A 360MG CAP	20	0.250
yyyyy-yyyy-02	Drug A 360MG CAP	10	0.568

National Average Drug Acquisition Cost (NADAC)

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

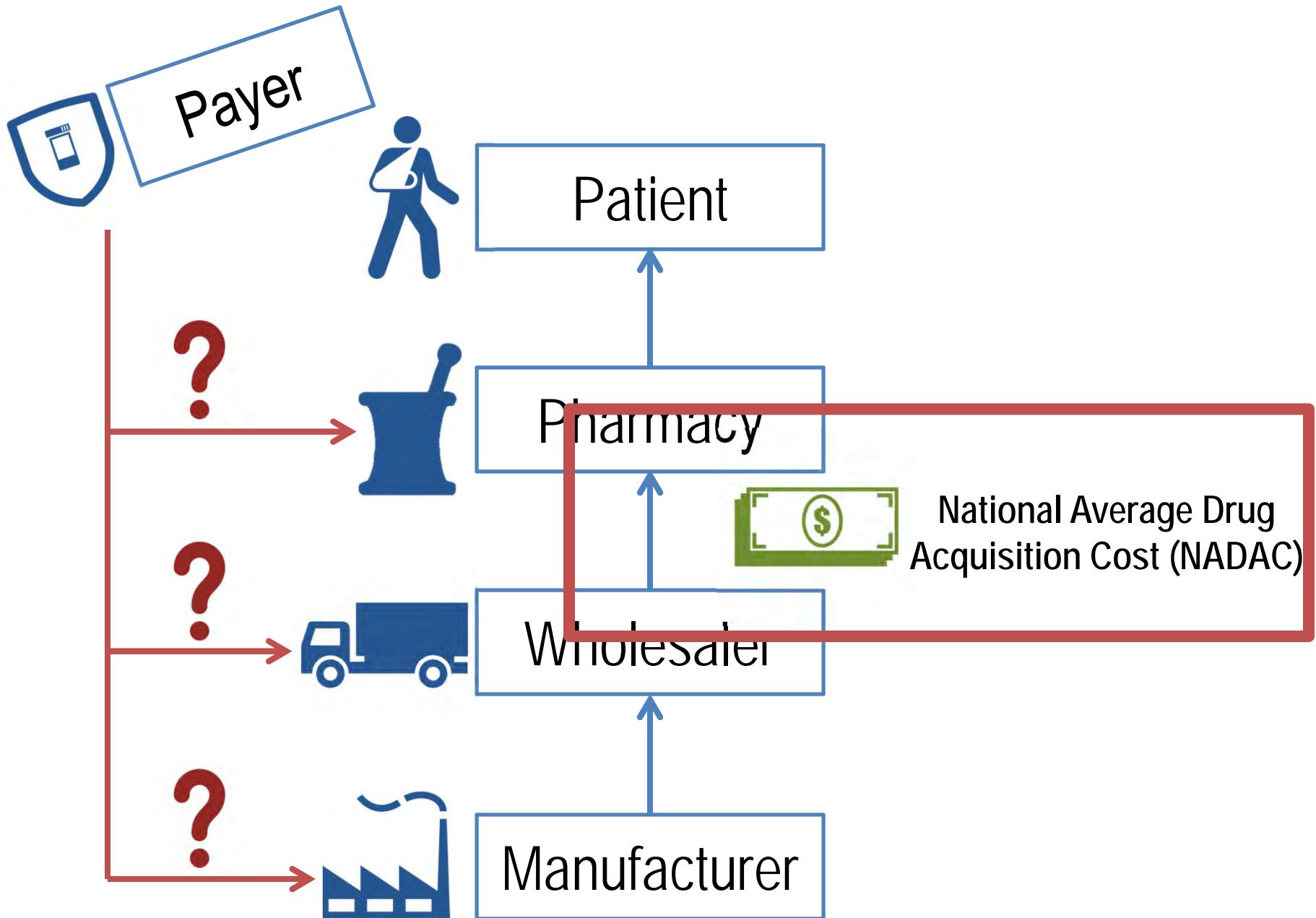
NDC	Product Name	Observed in Survey	Unit Cost	NADAC
xxxxx-xxxx-01	Drug A 360MG CAP	50	0.285	0.276
xxxxx-xxxx-02	Drug A 360MG CAP	40	0.190	0.276
yyyyy-yyyy-01	Drug A 360MG CAP	30	0.297	0.276
yyyyy-yyyy-02	Drug A 360MG CAP	20	0.250	0.276
yyyyy-yyyy-02	Drug A 360MG CAP	10	0.568	0.276

$$NADAC_G = \frac{\sum_{i=1}^5 observed_i * unitcost_i}{\sum_{i=1}^5 observed_i}$$

National Average Drug Acquisition Cost (NADAC)

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

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



VA Federal Supply Schedule

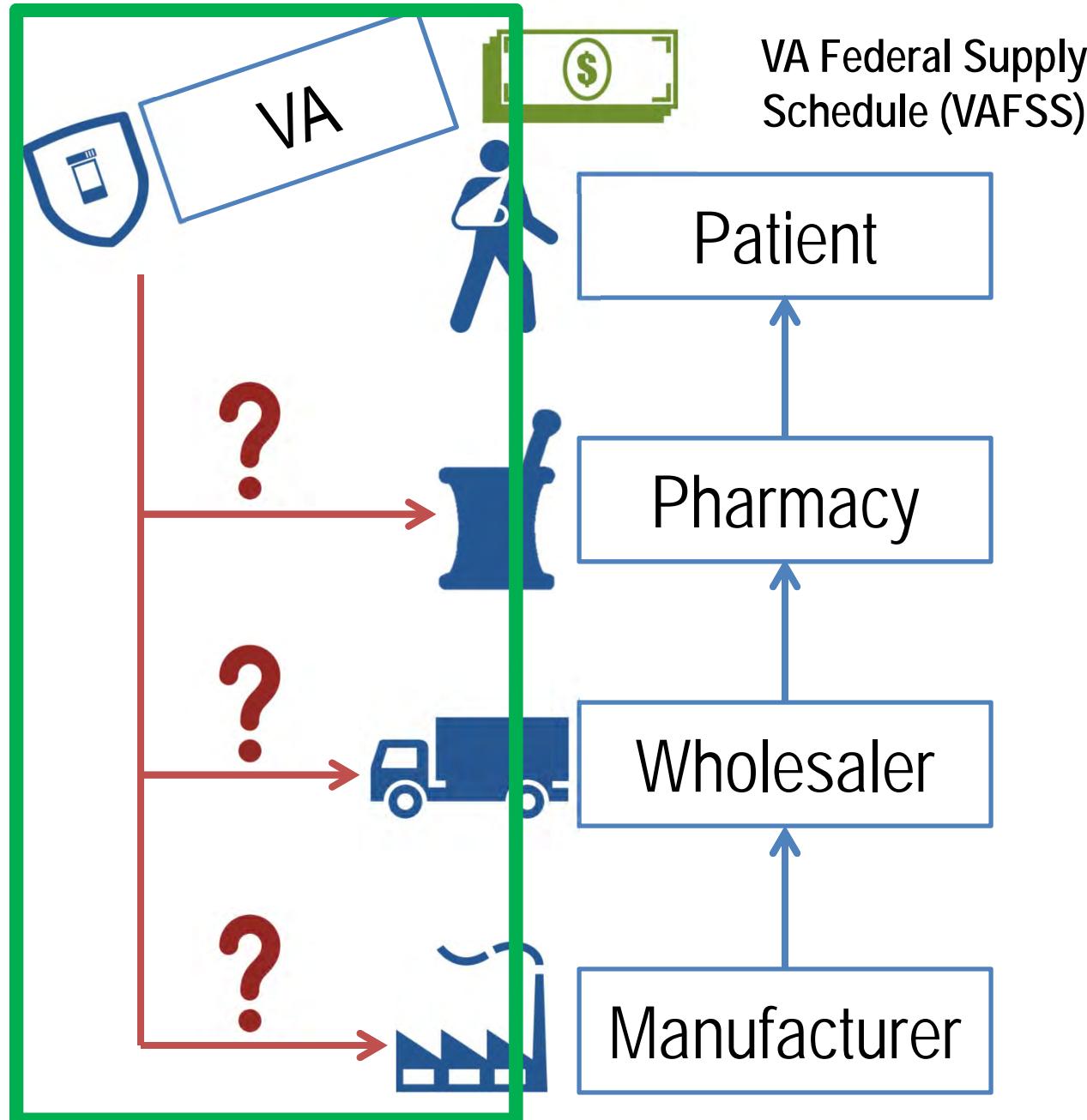
The price the VA has negotiated to acquire drugs from manufacturers

- 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”
 - $VAFSS = \text{Minimum}(\text{FSS}, \text{Big4}, \text{NCP})$
- 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

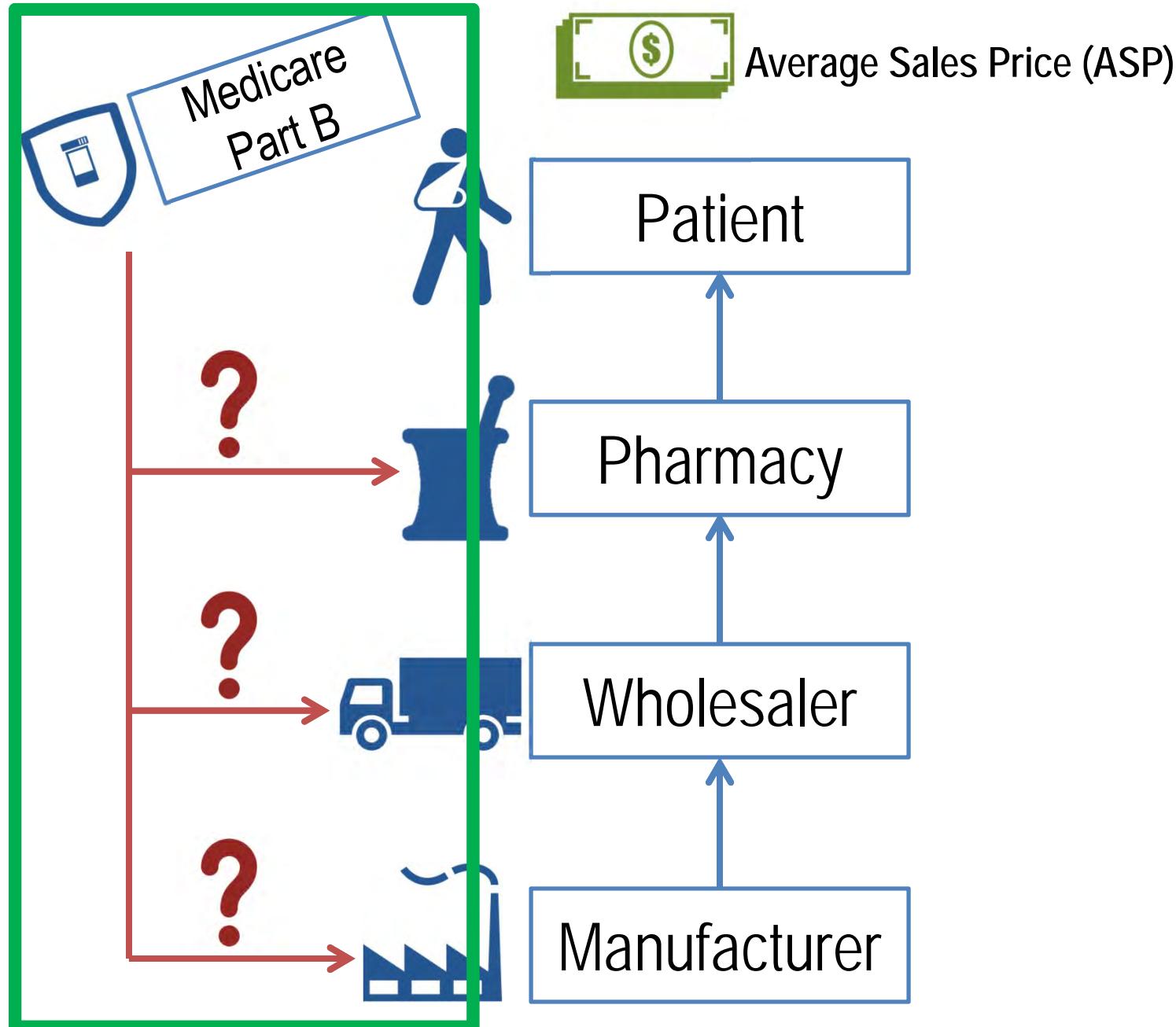
Advantages	Disadvantages
The actual cost to a real payer (i.e. the transaction we want)	By statute, and exclusion from the computation of the 'best price' is one of the lowest prices available to any payer. Possibly too low?
Freely available, online, query system	Prices can vary on package size, manufacturer
	Unclear how timely the price is



Average Sales Price (ASP)

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

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





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. Slezko PhD

Obtaining Drug Costs

- Example: 40mg Atorvastatin (generic)
 - WAC from Redbook
 - NADAC
 - VAFSS

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Home Drug Interactions IV Compatibility Drug ID Drug Comparison CareNotes® NeoFax® / Pediatrics Other Tools ▾

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Displaying results found for "Product Name: ATORVASTATIN CALCIUM" Applied Filters: Status - Active; Repackagers - Exclude

Results 1 - 50 of 120

Page 1 of 3 [GO](#)

Details	Price	New	Product Name ▾	Active Ingredient	Manufacturer/ Distributor	Rpkg	Generic	Orange Book Code	Code Type	Identifier	Form	Strength	Route	Pkg Size	Unit Dose	WAC Pkg Price
□			ATORVASTATIN CALCIUM	atorvastatin calcium	A.P.I. SOLUTIONS, INC.	N	Y	—	NDC	46144-0150-50	POW	—	NOT APPLICABLE	500 gm	N	—
□			ATORVASTATIN CALCIUM	atorvastatin calcium	AMERICAN HEALTH PACKAGING	N	Y	AB	NDC	68084-0590-25	TAB	80 mg	ORAL	30s ea	Y	20.28
□			ATORVASTATIN CALCIUM	atorvastatin calcium	APOTEX CORP	N	Y	AB	NDC	60505-2671-09	TAB	80 mg	ORAL	90s ea	N	27.13
□			ATORVASTATIN CALCIUM	atorvastatin calcium	APOTEX CORP	N	Y	AB	NDC	60505-2578-08	TAB	10 mg	ORAL	100s ea	N	211.78
□			ATORVASTATIN CALCIUM	atorvastatin calcium	APOTEX CORP	N	Y	AB	NDC	60505-2578-09	TAB	10 mg	ORAL	90s ea	N	19.06
□			ATORVASTATIN CALCIUM	atorvastatin calcium	APOTEX CORP	N	Y	AB	NDC	60505-2580-08	TAB	40 mg	ORAL	100s ea	N	301.44
□			ATORVASTATIN CALCIUM	atorvastatin calcium	APOTEX CORP	N	Y	AB	NDC	60505-2580-09	TAB	40 mg	ORAL	90s ea	N	27.13
□			ATORVASTATIN CALCIUM	atorvastatin calcium	APOTEX CORP	N	Y	AB	NDC	60505-2579-08	TAB	20 mg	ORAL	1000s ea	N	301.44
□			ATORVASTATIN CALCIUM	atorvastatin calcium	APOTEX CORP	N	Y	AB	NDC	60505-2579-09	TAB	20 mg	ORAL	90s ea	N	27.13
□			ATORVASTATIN CALCIUM	atorvastatin calcium	APOTEX CORP	N	Y	AB	NDC	60505-2671-08	TAB	80 mg	ORAL	100s ea	N	301.44
□			ATORVASTATIN CALCIUM	atorvastatin calcium	AVKARE, INC.	N	Y	—	NDC	42291-0146-50	TAB	80 mg	ORAL	500s ea	N	123.49
□			ATORVASTATIN CALCIUM	atorvastatin calcium	AVKARE, INC.	N	Y	—	NDC	42291-0146-90	TAB	80 mg	ORAL	90s ea	N	19.04
□			ATORVASTATIN CALCIUM	atorvastatin calcium	AVKARE, INC.	N	Y	—	NDC	42291-0144-90	TAB	20 mg	ORAL	90s ea	N	17.98
□			ATORVASTATIN CALCIUM	atorvastatin calcium	AVKARE, INC.	N	Y	—	NDC	42291-0144-10	TAB	20 mg	ORAL	1000s ea	N	186.81
□			ATORVASTATIN CALCIUM	atorvastatin calcium	AVKARE, INC.	N	Y	—	NDC	42291-0143-10	TAB	10 mg	ORAL	100s ea	N	130.45
□			ATORVASTATIN CALCIUM	atorvastatin calcium	AVKARE, INC.	N	Y	—	NDC	42291-0143-90	TAB	10 mg	ORAL	90s ea	N	12.74
□			ATORVASTATIN CALCIUM	atorvastatin calcium	AVKARE, INC.	N	Y	—	NDC	42291-0145-90	TAB	40 mg	ORAL	90s ea	N	17.35
□			ATORVASTATIN CALCIUM	atorvastatin calcium	AVKARE, INC.	N	Y	—	NDC	42291-0145-50	TAB	40 mg	ORAL	500s ea	N	97.25
□			ATORVASTATIN CALCIUM	atorvastatin calcium	AVRAK	N	Y	AB	NDC	50268-0095-15	TAB	40 mg	ORAL	50s ea	Y	18.86



Export to Excel.
Find lowest unit price.



Lowest WAC unit price: \$0.18/40mg

NADAC

<https://www.medicaid.gov/medicaid/prescription-drugs/pharmacy-pricing/index.html>

Federal Upper Limits		2016	June	2016-06-29
Previous 1 2 Next				
National Average Drug Acquisition Cost				
Below are links to the National Average Drug Acquisition Cost (NADAC) weekly and the weekly comparison data. Please note that the NADAC data is updated on a weekly basis. Each month, new data is posted to reflect findings from the previous month's survey results incorporating the weekly price changes that have occurred in the interim weeks before the next monthly NADAC file. For more information on the fields in the NADAC data, please see the NADAC Data Field Definitions [PDF] . More information on the NADAC can be found on the Survey of Retail Prices page.				
Showing 1 to 10 of 69 entries	Name	Year	Month	Date
All	All	All	All	All
NADAC	2017	April	2017-04-26	
NADAC	2017	April	2017-04-19	
NADAC	2017	April	2017-04-12	
NADAC	2017	April	2017-04-05	
NADAC	2017	March	2017-03-29	
NADAC	2017	March	2017-03-22	
NADAC	2017	March	2017-03-15	
NADAC	2017	March	2017-03-08	
NADAC	2017	March	2017-03-01	
NADAC	2017	February	2017-02-22	

[Previous](#) [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [Next](#)



Choose desired survey time period.
- Most recent is often useful.

NADAC

Medicaid.gov
Keeping America Healthy

Unsaved View Save As... Revert

Based on NADAC as of 2017-04-26
National Average Drug Acquisition Cost (NADAC) weekly reference data from November 2013 to current week.

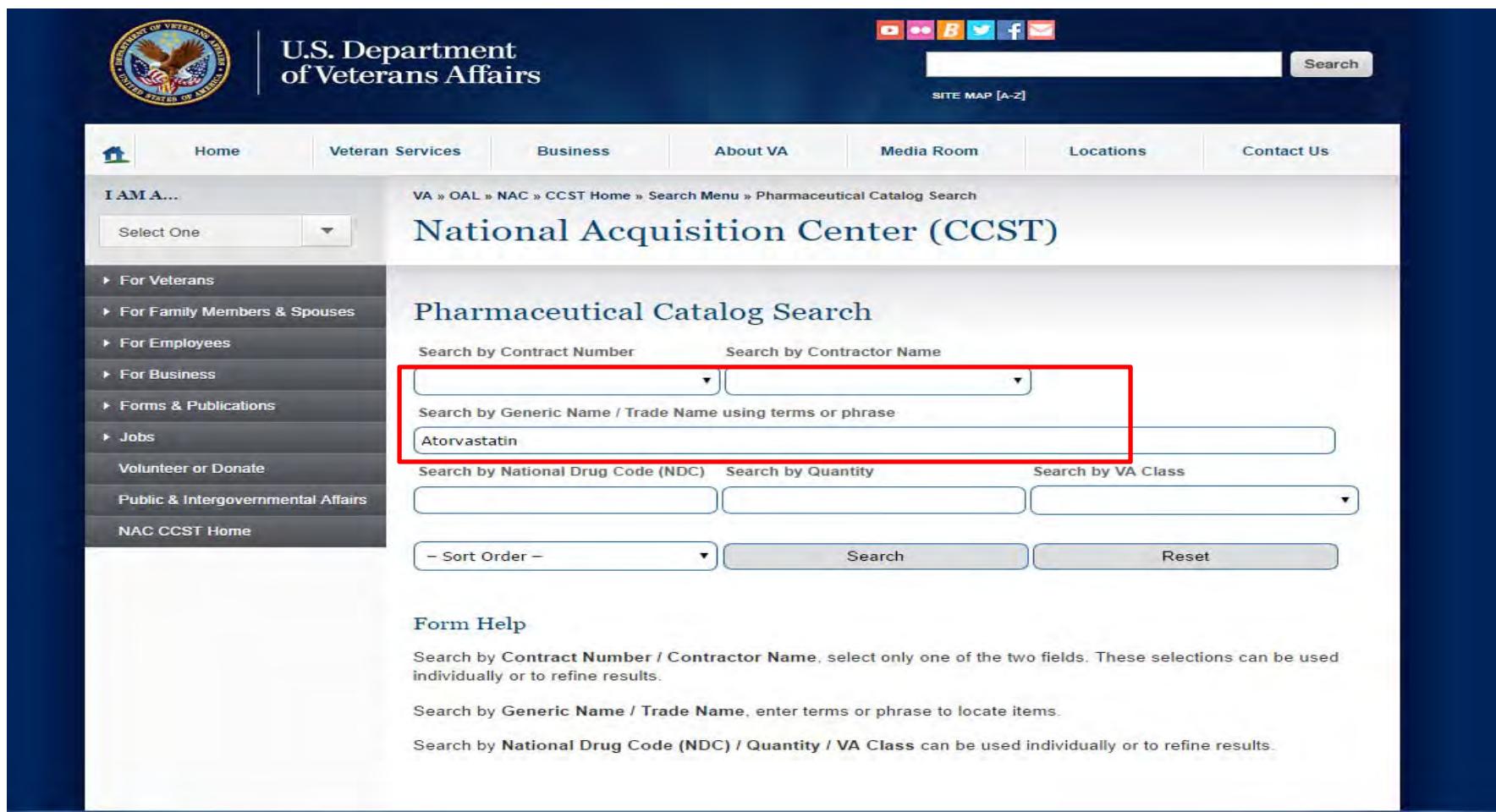
NDC Description	NDC	NADAC_Per_Unit	Effective_Date	Pricing_Unit	Pharmacy_Type_Indicator	OTC	Explanation_Code	Classification_for_Rate_Setting	Corresponding_G
53 ATORVASTATIN 20 MG TABLET	70882010230	0.10670	04/19/2017	EA	C/I	N	1	G	
54 ATORVASTATIN 40 MG TABLET	00378395205	0.11932	04/19/2017	EA	C/I	N	1	G	
55 ATORVASTATIN 40 MG TABLET	00378395207	0.11932	04/19/2017	EA	C/I	N	1	G	
56 ATORVASTATIN 40 MG TABLET	00378395209	0.11932	04/19/2017	EA	C/I	N	1	G	
57 ATORVASTATIN 40 MG TABLET	00378395277	0.11932	04/19/2017	EA	C/I	N	1	G	
58 ATORVASTATIN 40 MG TABLET	00781538492	0.11932	04/19/2017	EA	C/I	N	1	G	
59 ATORVASTATIN 40 MG TABLET	00904629261	0.11932	04/19/2017	EA	C/I	N	1	G	
60 ATORVASTATIN 40 MG TABLET	51079021001	0.11932	04/19/2017	EA	C/I	N	1	G	
61 ATORVASTATIN 40 MG TABLET	51079021020	0.11932	04/19/2017	EA	C/I	N	1	G	
62 ATORVASTATIN 40 MG TABLET	54458088110	0.11932	04/19/2017	EA	C/I	N	1	G	
63 ATORVASTATIN 40 MG TABLET	5511102305	0.11932	04/19/2017	EA	C/I	N	1	G	
64 ATORVASTATIN 40 MG TABLET	5511102300	0.11932	04/19/2017	EA	C/I	N	1	G	
65 ATORVASTATIN 40 MG TABLET	5976201570	0.11932	04/19/2017	EA	C/I	N	1,6	G	
66 ATORVASTATIN 40 MG TABLET	5072004703	0.11932	04/19/2017	EA	C/I	N	1,6	G	

List of NDCs for product/strength

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

VAFSS

<https://www.va.gov/nac/pharma/list>



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National Acquisition Center (CCST)

Pharmaceutical Catalog Search

Search by Contract Number Search by Contractor Name

Search by Generic Name / Trade Name using terms or phrase

Atorvastatin

Search by National Drug Code (NDC) Search by Quantity Search by VA Class

– Sort Order – Search Reset

Form Help

Search by Contract Number / Contractor Name, select only one of the two fields. These selections can be used individually or to refine results.

Search by Generic Name / Trade Name, enter terms or phrase to locate items.

Search by National Drug Code (NDC) / Quantity / VA Class can be used individually or to refine results.

VAFSS

Use the NDC hyperlinks below for contract details and ordering information

1 - 81 of 81 records

NDC	PKG	CONTRACT NUMBER	PV	VENDOR	GENERIC NAME	TRADE NAME	FSS PRICE	NC PRICE	BIG 4 PRICE
00378-3953-09	90	VA797P-16-C-0039	X	Mylan Phar	ATORVASTATIN CA 80MG TAB	ATORVASTATIN CA 80MG TAB	\$0.00	\$6.26	\$0.00
00378-3953-07	500	VA797P-16-C-0039	X	Mylan Phar	ATORVASTATIN CA 80MG TAB	ATORVASTATIN CA 80MG TAB	\$0.00	\$35.24	\$0.00
00378-3952-09	90	VA797P-16-C-0039	X	Mylan Phar	ATORVASTATIN CA 40MG TAB	ATORVASTATIN CA 40MG TAB	\$0.00	\$4.22	\$0.00
00378-3952-07	500	VA797P-16-C-0039	X	Mylan Phar	ATORVASTATIN CA 40MG TAB	ATORVASTATIN CA 40MG TAB	\$0.00	\$24.61	\$0.00
00378-3951-09	90	VA797P-16-C-0039	X	Mylan Phar	ATORVASTATIN CA 20MG TAB	ATORVASTATIN CA 20MG TAB	\$0.00	\$5.27	\$0.00
00378-3951-07	500	VA797P-16-C-0039	X	Mylan Phar	ATORVASTATIN CA 20MG TAB	ATORVASTATIN CA 20MG TAB	\$0.00	\$17.00	\$0.00
00378-3950-09	90	VA797P-16-C-0039	X	Mylan Phar	ATORVASTATIN CA 10MG TAB	ATORVASTATIN CA 10MG TAB	\$0.00	\$2.94	\$0.00
00378-3950-07	500	VA797P-16-C-0039	X	Mylan Phar	ATORVASTATIN CA 10MG TAB	ATORVASTATIN CA 10MG TAB	\$0.00	\$10.76	\$0.00
00781-5384-92	90	V797D-30226	X	Sandoz, In	ATORVASTATIN CA 40MG TAB	ATORVASTATIN CA 40MG TAB	\$3.59	\$0.00	\$0.00
00781-5381-92	90	V797D-30226	X	Sandoz, In	ATORVASTATIN CA 10MG TAB	ATORVASTATIN CA 10MG TAB	\$4.05	\$0.00	\$0.00
60429-0323-90	90	V797P-5156B	X	Golden Sta	ATORVASTATIN CA 10MG TAB	ATORVASTATIN CA 10MG TAB	\$4.15	\$0.00	\$0.00
60429-0325-90	90	V797P-5156B	X	Golden Sta	ATORVASTATIN CA 40MG TAB	ATORVASTATIN CA 40MG TAB	\$4.69	\$0.00	\$0.00
00781-5388-92	90	V797D-30226	X	Sandoz, In	ATORVASTATIN CA 20MG TAB	ATORVASTATIN CA 20MG TAB	\$6.19	\$0.00	\$0.00
60429-0324-90	90	V797P-5156B	X	Golden Sta	ATORVASTATIN CA 20MG TAB	ATORVASTATIN CA 20MG TAB	\$6.39	\$0.00	\$0.00
60429-0326-90	90	V797P-5156B	X	Golden Sta	ATORVASTATIN CA 80MG TAB	ATORVASTATIN CA 80MG TAB	\$6.66	\$0.00	\$0.00
00781-5388-92	90	V797D-30226	X	Sandoz, In	ATORVASTATIN CA 80MG TAB	ATORVASTATIN CA 80MG TAB	\$0.00	\$0.00	\$0.00
42291-0146-90	90	V797P-5153B	X	AvKare, In	ATORVASTATIN CA 80MG TAB	ATORVASTATIN CA 80MG TAB	\$0.00	\$0.00	\$0.00
42291-0143-90	90	V797P-5153B	X	AvKare, In	ATORVASTATIN CA 10MG TAB	ATORVASTATIN CA 10MG TAB	\$0.00	\$0.00	\$0.00
60429-0326-33	300UD	V797P-5156B	X	Golden Sta	ATORVASTATIN CA 80MG TAB,UD	ATORVASTATIN CA 80MG TAB,UD	\$0.00	\$0.00	\$0.00
59762-0155-01	90	V797D-50559	X	Greenstone	ATORVASTATIN CA 10MG TAB	ATORVASTATIN CA 10MG TAB	\$0.00	\$1.70	\$0.00
42291-0145-90	90	V797P-5153B	X	AvKare, In	ATORVASTATIN CA 40MG TAB	ATORVASTATIN CA 40MG TAB	\$0.00	\$0.00	\$0.00
42291-0144-90	90	V797P-5153B	X	AvKare, In	ATORVASTATIN CA 20MG TAB	ATORVASTATIN CA 20MG TAB	\$0.00	\$0.00	\$0.00
59762-0158-01	90	V797D-	X	Greenstone	ATORVASTATIN CA 80MG TAB	ATORVASTATIN CA 80MG TAB	\$15.91	\$0.00	\$4.15

Export to Excel to calculate unit price and minimums.

Four Prices:
-FSS
-NC
-Big 4

VAFSS: \$0.04/40mg

Comparison of Three Sources

	Cost per Dose		
	WAC	NADAC	VAFSS
Atorvastatin 40mg	\$0.30	\$0.12	\$0.05

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

	Cost per Dose		
	WAC	NADAC	VAFSS
Drug A	\$12.27	\$11.80	\$5.68

Model Inputs

Drug A Cost Source	Base Case	S.A. Range +/- 10%	Uncertainty Range VAFSS- NADAC
WAC	\$12.27	\$11.04- \$13.50	
NADAC	\$11.80	\$10.62- \$12.98	
VAFSS	\$5.68	\$5.11-\$6.25	\$5.68-\$11.80
Midpoint of VAFSS- NADAC	\$8.74	\$7.87-\$9.61	

Example Model Results

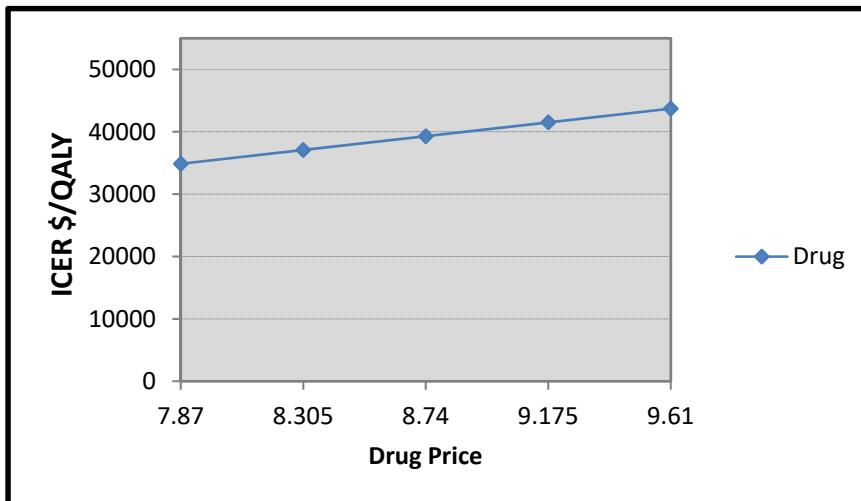
Base Case Results

Strategy	Cost	Incr. Cost	Eff. (QALYs)	Incr. Eff.	ICER
Usual Care	\$23,880		7.149		
Drug A	\$36,146	\$12,265	7.463	0.314	\$39,089/QALY

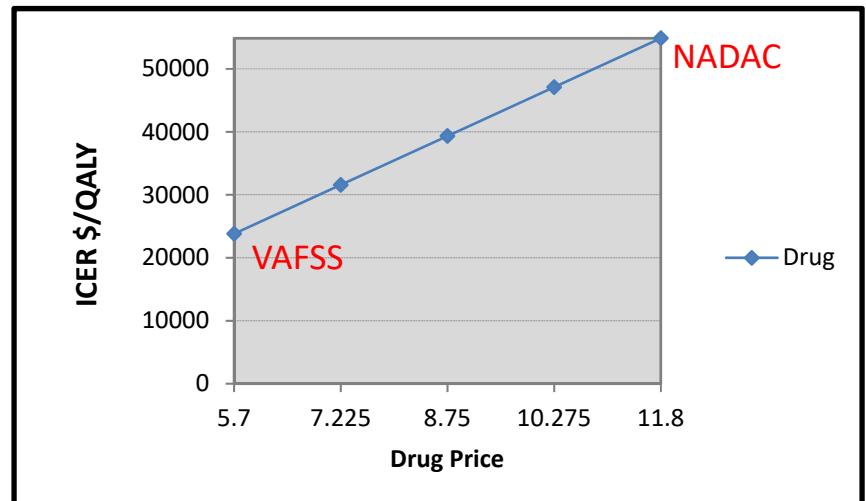
Use midpoint of
VAFSS/NADAC for base case:
\$8.74

One-Way Sensitivity Analysis & Uncertainty Analysis

\$8.74 +/- 10% for Sensitivity Analysis



VAFSS-NADAC Range for Uncertainty Analysis



Base Case Results

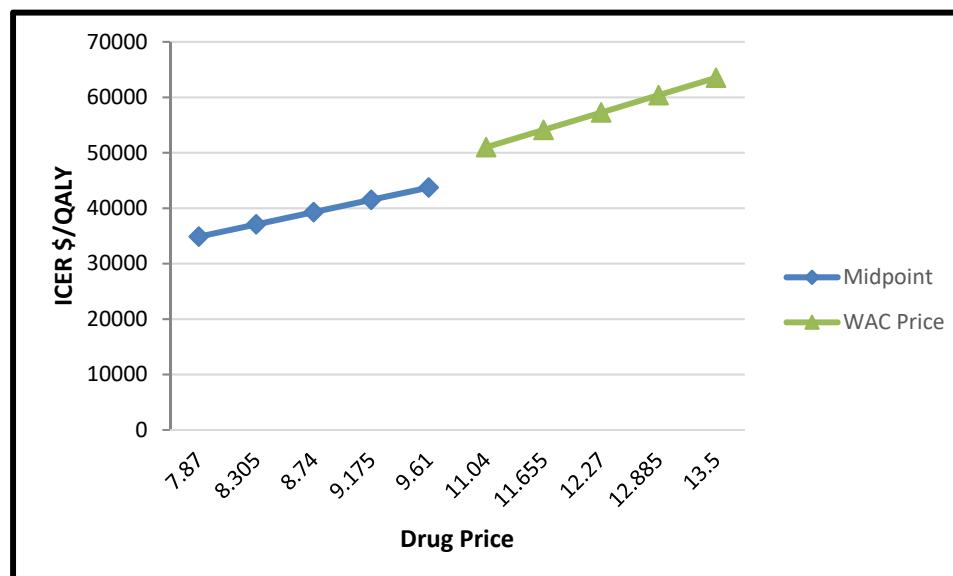
Strategy	Cost	Incr. Cost	Eff. (QALYs)	Incr. Eff.	ICER
Usual Care	\$23,880		7.149		
Drug A	\$36,146	\$12,265	7.463	0.314	\$39,089/QALY
Strategy	Cost	Incr. Cost	Eff. (QALYs)	Incr. Eff.	ICER
Usual Care	\$23,880		7.149		
Drug A	\$41,847	\$17,967	7.463	0.314	\$57,261/QALY

Use midpoint of
VAFSS/NADAC : \$8.74

WAC: \$12.27

One-Way Sensitivity Analysis & Uncertainty Analysis

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



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