



Miracle Medications: Can we afford the cure?

Steve Miller, MD
Chief Medical Officer

May 5, 2016



Disclosures: Steven Miller, MD

- Express Scripts Inc.; Full time employee and shareholder
- MediBeacon; Board of Directors
- SureScripts; Board of Directors
- RxOutreach; Board of Directors
- St. Louis Children's Hospital; Board of Trustees
- OASIS; Board of Directors
- Midwest Health Initiative; Board of Directors

Healthcare bucket



\$3.0 Trillion



Source: National Health Expenditure Accounts, Centers for Medicare & Medicaid Services

How much is a trillion?

**April 23,
2016**

1 million seconds

- 12 days ago



1 billion seconds

- Reagan begins second term

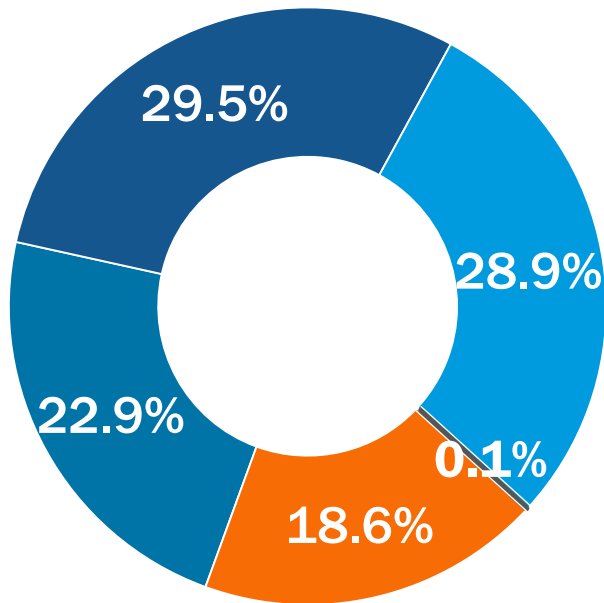


1 trillion seconds

- 30,000 BC

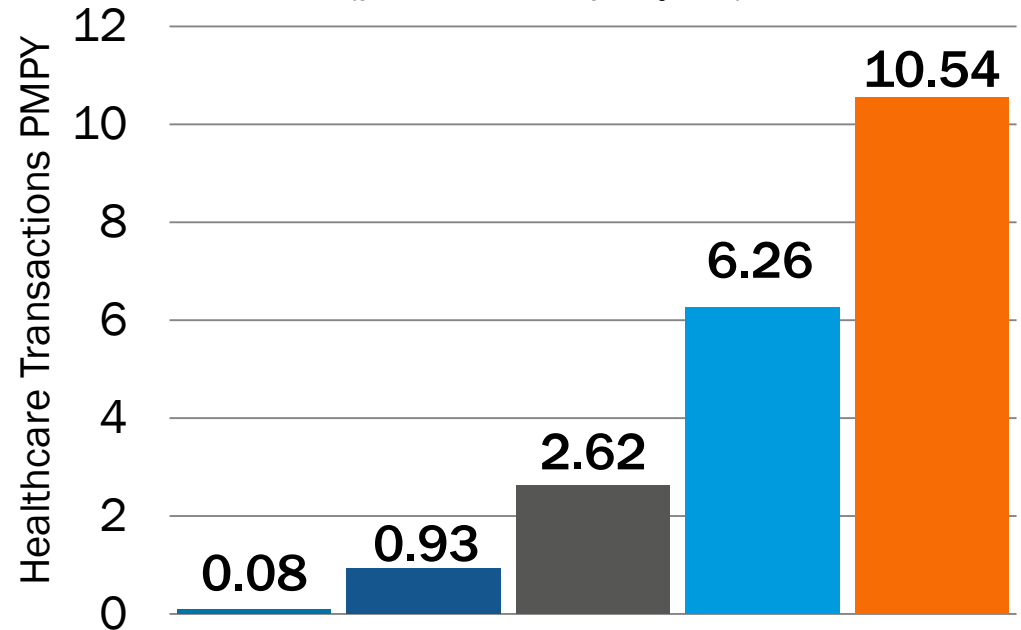
Pharmacy is the most widely used benefit

Health Spending Distribution



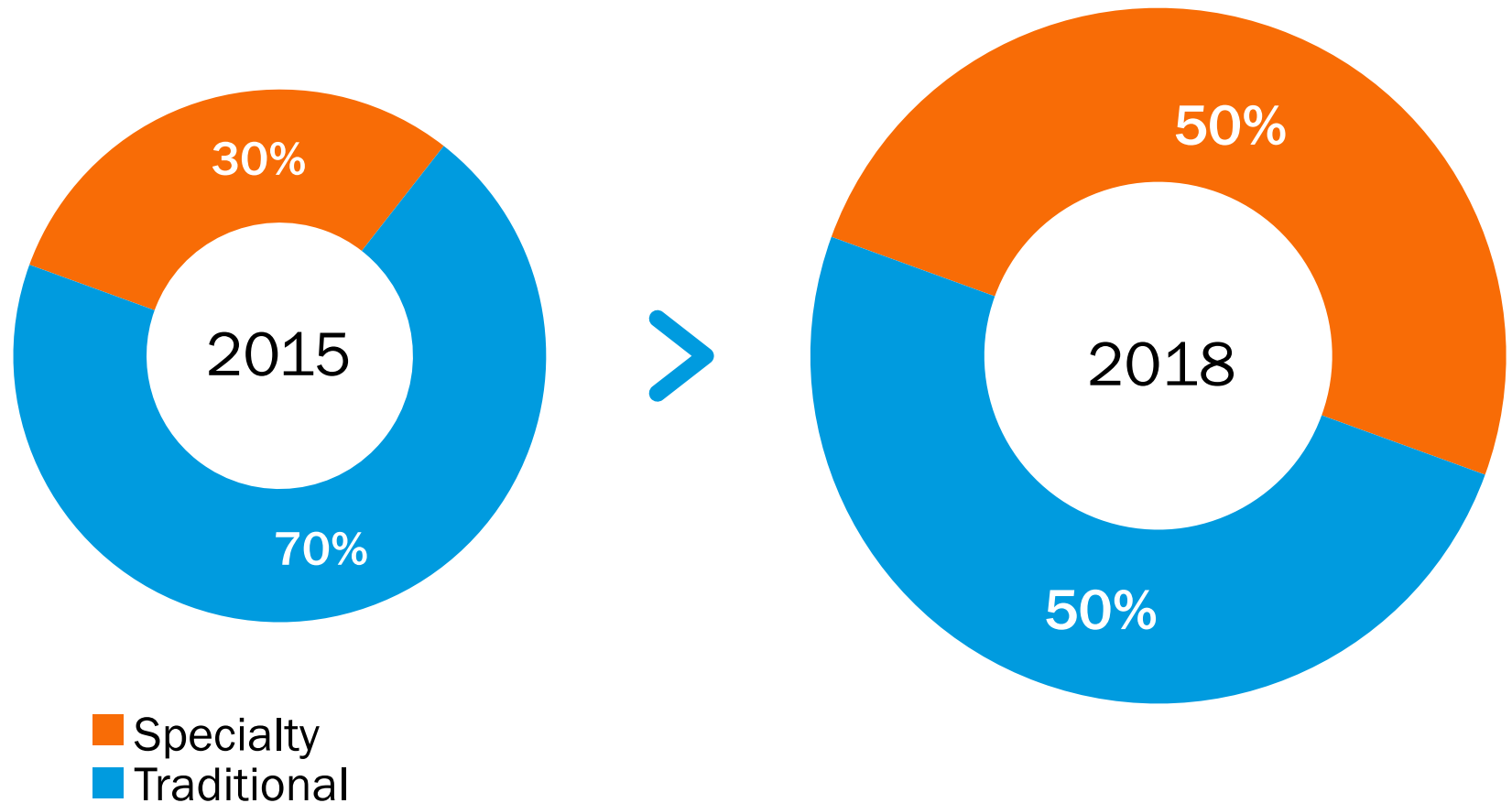
■ Inpatient ■ Outpatient ■ Ancillary ■ Physician ■ Pharmacy

Healthcare Transactions
(per member per year)



Source: <http://www.cms.hhs.gov/NationalHealthExpendData>

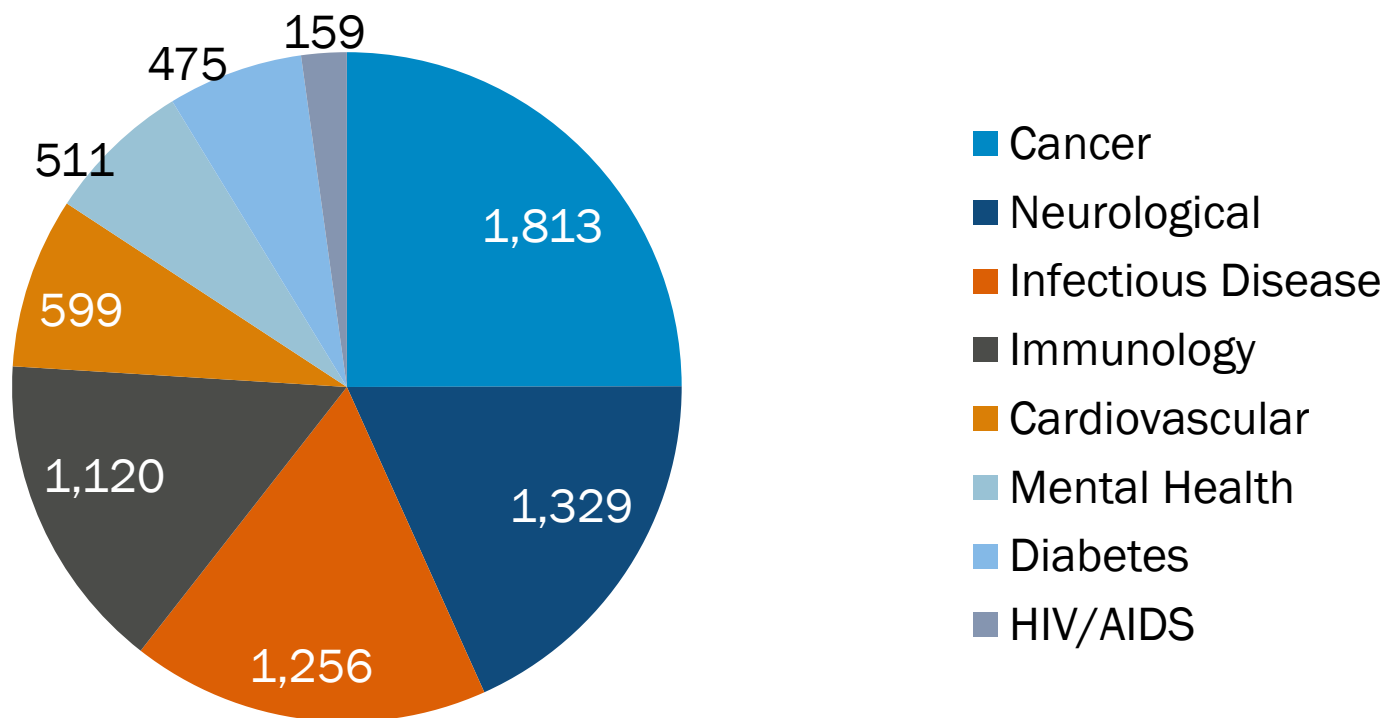
Pharmacy spend growth continues: It's all about specialty



Source: Express Scripts research

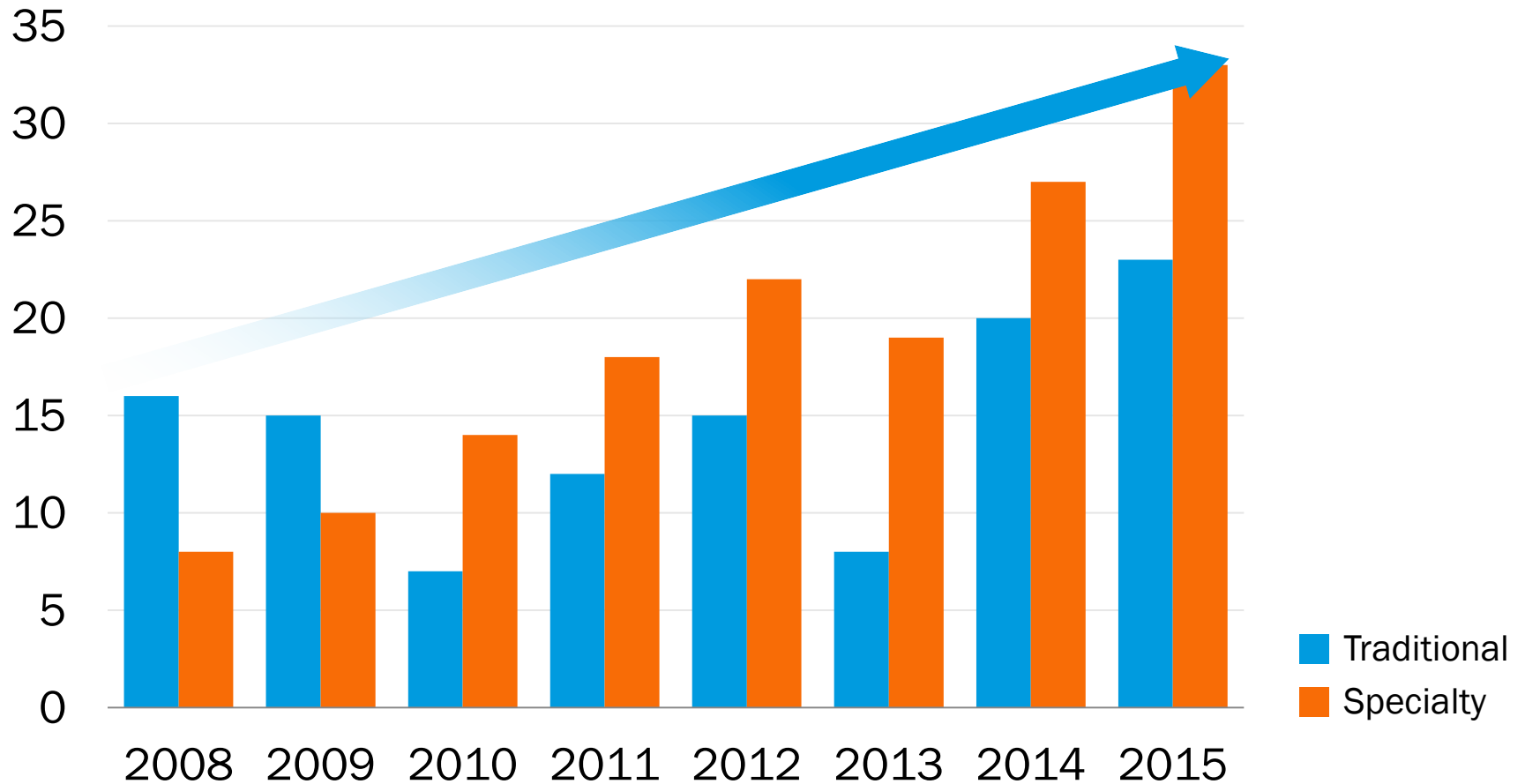
>7,000 potential drugs in development

Pipeline Products by Therapeutic Area



Source: 2015 Profile Biopharmaceutical Research Industry, PhRMA

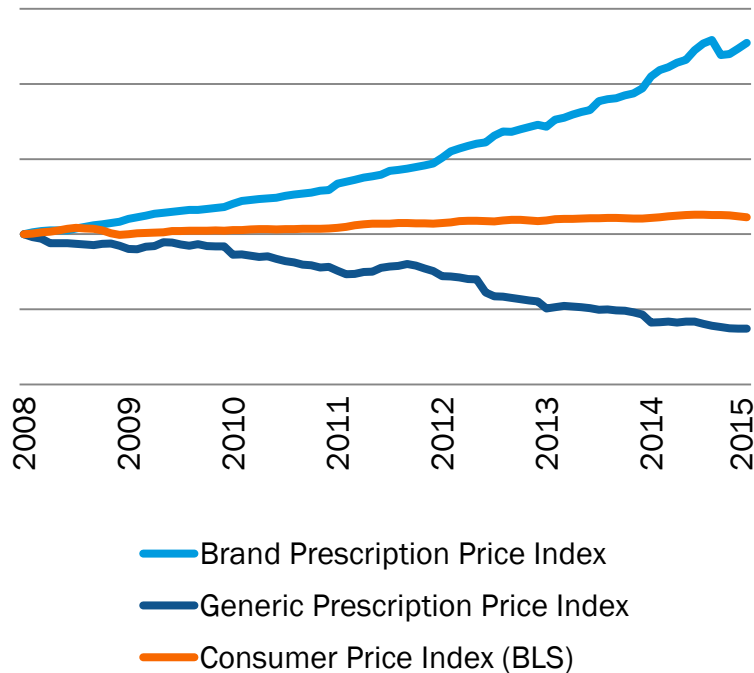
FDA new drug approvals keep climbing



Source: U.S. Food & Drug Administration

Why is trend increasing?

Price Inflation



Source: Express Scripts research

Higher Utilization



Never before have we seen such high prices on medications that are used by so many

Costly, high-use drugs drive up spend



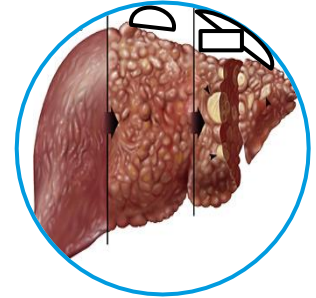
Alzheimer's



Cancer



**High
Cholesterol**



Hepatitis C

PREVALENCE 5.4 million

14 million

71 million

3.2 million

ANNUAL COST \$35,000

>\$100,000

>\$14,000

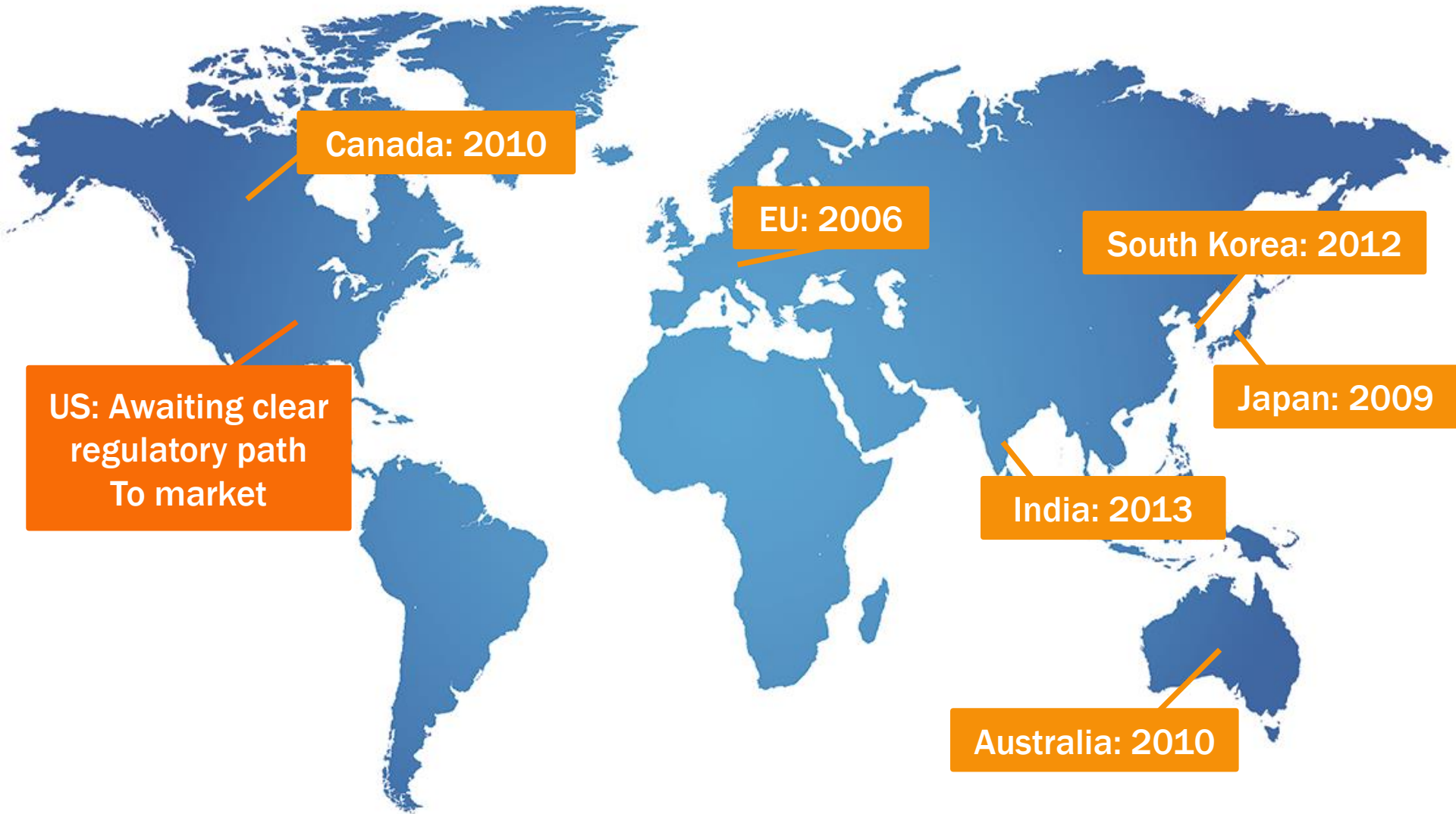
~\$100,000

Source: Express Scripts research

Biogenerics: The law of the land



Biosimilars approved around the world



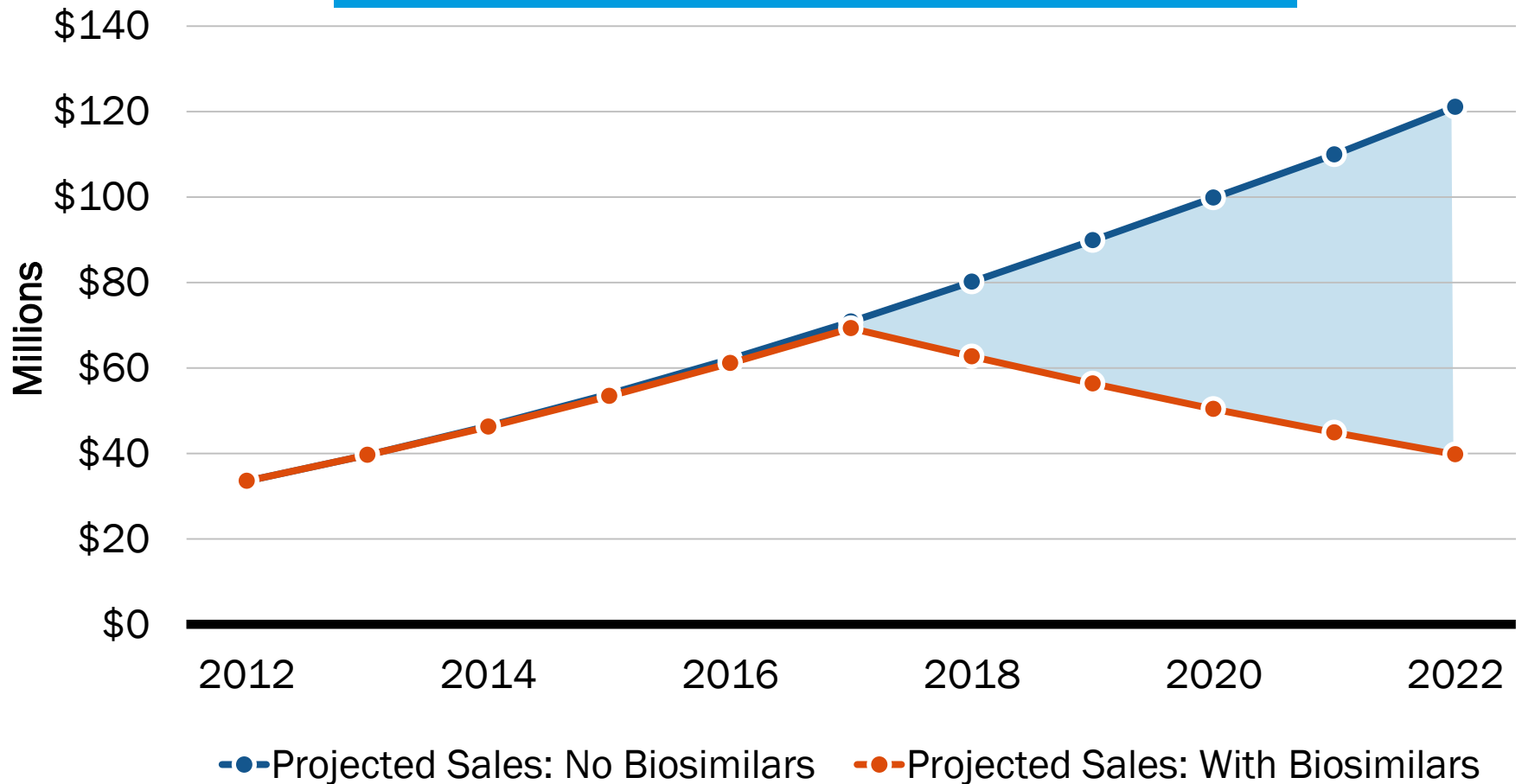
Falling barriers, rising profits draw competition

PRODUCT	PRICE	MANUFACTURING COST ASSUMING 2 G/L YIELD (\$/GR)*	COST/PRICE*
Avastin	\$687.5/100mg	\$188	2.7%
Enbrel	\$243/25mg	\$428	4.4%
Remicade	\$784/100mg	\$188	2.4%
Humira	\$1,816/40mg	\$308	0.7%
Rituxan	\$675/100mg	\$188	2.8%
Herceptin	\$3,331/440mg	\$126	1.7%
Erbitux	\$600/100mg	\$188	3.1%
Soliris	\$5,122/300mg	\$135	0.8%
AVERAGE		\$231	2.3%

*Bernstein Research analysis, market data as of 4Q2008
 Note: IP licensing is excluded from cost calculation. Calculation intends to show direct gross margin of innovators. Cost of sales and marketing and discount given by biosimilars not included.

Projected biosimilar savings

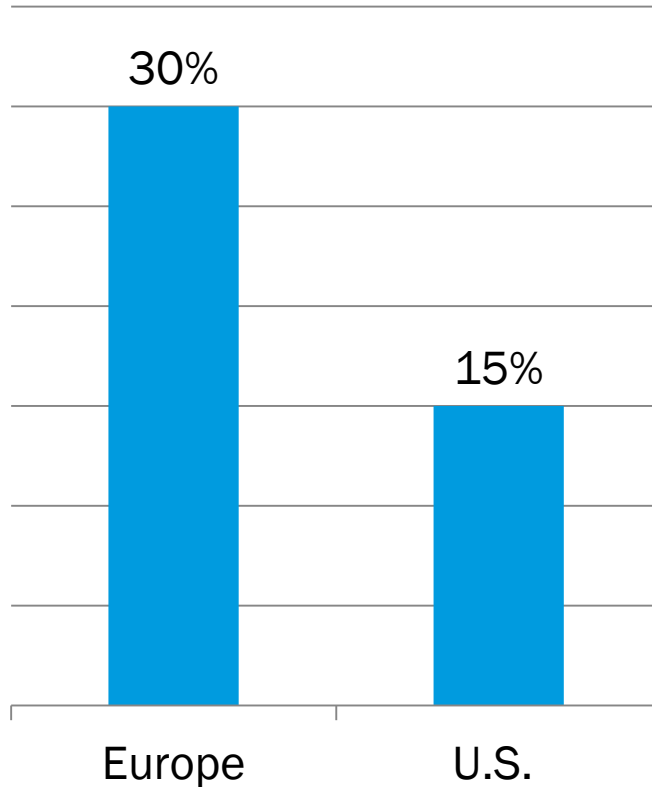
\$250 BILLION through 2024



Source: Potential Savings of Biogenerics in the United States, S Miller, J Houts - Express Scripts, 2007

The first biosimilar arrives

Discount to Neupogen



In Europe, lower price leads to 30% market share

Enbrel: Biosimilar represents a significant savings opportunity

Realizing that value requires a pharmacy partner that can:

- Manage substitution and tracking
- Encourage use
- Support physicians and patients



Sovaldi cost ignites payers & patients

At \$84,000 Gilead Hepatitis C Drug Sets Off Payer Revolt

Save +

By Drew Armstrong | Jan 27, 2014 3:09 PM CT | 119 Comments [Email](#) [Print](#)

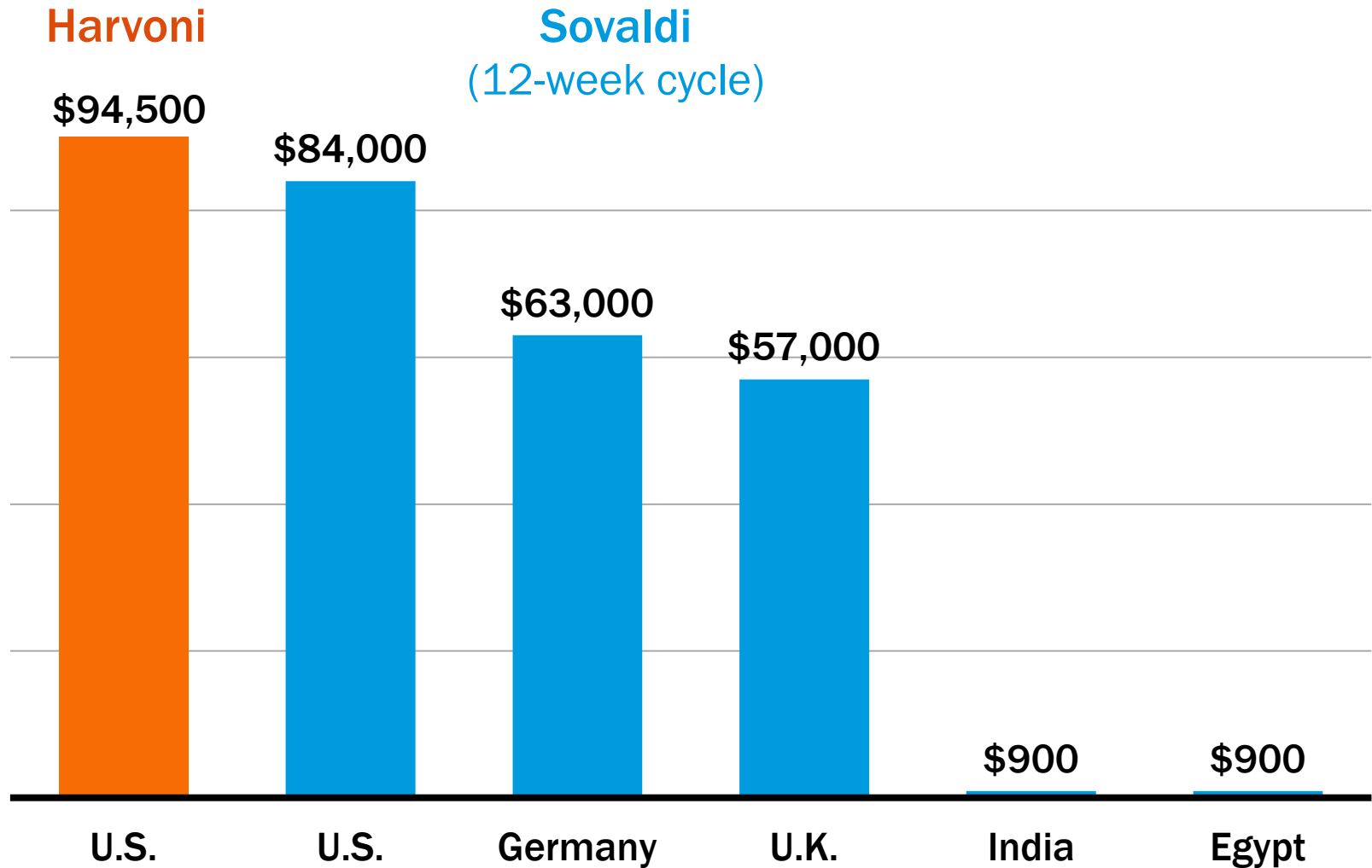


As Gilead Sciences (GILD) touted its new pill hepatitis C cure to investors in a hotel in San Francisco



Source: AIDS Healthcare Foundation.

Price shock not felt round the world



Source: "The Price Of Sovaldi and Its Impact On the U.S. Health Care System," Dec. 2015 report prepared for the Committee on Finance, U.S. Senate

Innovation reduces prices...

But not in pharmaceuticals



32%



78%



88%

The Future of Medicine: A conversation on cost and value

The Atlantic – Washington DC – May 21, 2014



Making drugs more affordable for payers

 HOME  SEARCH

The New York Times

Health Insurers Pressing Down on Drug Prices

By ANDREW POLLACK JUNE 20, 2014

Express Scripts alters financial landscape for drugs

Bloomberg News

Hepatitis Drug Prices Fall So Low, No Exclusives Needed

By Robert Langreth | 2015-01-12T21:26:37Z | [- Comments](#) [Email](#) [f](#)

Hepatitis Cure Value ProgramSM



- Significant prescription discount for exclusive use of Viekira PakTM
- Specialized care and therapy management from Accredo's hepatitis clinicians
- Guaranteed medication adherence
- Financial cap for extended therapy

Proven results curing Hep C

- Adherence rates >95%
- Cure rates >96%
- All patients have access, not just sickest
- Cured more people with hepatitis C than at any time in history

\$1B

in savings for our
book of business
in 2015

Doing more to ensure access to life-saving drugs

Bloomberg News

Biotech's Price Wars Are Just Beginning

By Robert Langreth | January 09, 2015

January 13, 2015

Express Scripts Eyes New Price War: Anti-PCSK9 Drugs

By AMY REEVES
INVESTOR'S BUSINESS DAILY



Regeneron researchers work at a biologics manufacturing plant.
[View Enlarged Image](#)

Regeneron Pharmaceuticals reported solid Q4 sales, but the big cap biotech's stock reversed lower Tuesday as its potentially huge new cholesterol fighter was in the crosshairs of a leading pharmacy benefit manager (PBM).

At the JPMorgan Healthcare Conference in San Francisco, Express Scripts (NASDAQ:ESRX) CEO George Paz chatted at a Q&A session about his company's recent

success at driving discounts to pricey new hepatitis C drugs by excluding Gilead

RPT - INSIGHT-Big Pharma faces up to new price pressure from aggressive insurers

Thu, Jan 15 2015

(Repeats for additional subscribers)

By Deena Beasley and [Caroline Humer](#)

SAN FRANCISCO, Jan 15 (Reuters) - The world's biggest drugmakers face a new reality when it comes to U.S. pricing for their products as insurers use aggressive tactics to extract steep price discounts, even for the newest medications.

The Washington Post

The coming revolution in much cheaper life-saving drugs

Bad actors add fuel to the fire

The New York Times

2 Valeant Dermatology Drugs Lead Steep Price Increases, Study Finds

THE WALL STREET JOURNAL.

**Pharmaceutical Companies Buy Rivals' Drugs,
Then Jack Up the Prices**

CBS EVENING NEWS

**Investigation: Insurance billed
\$18,000 for unwanted pain meds**

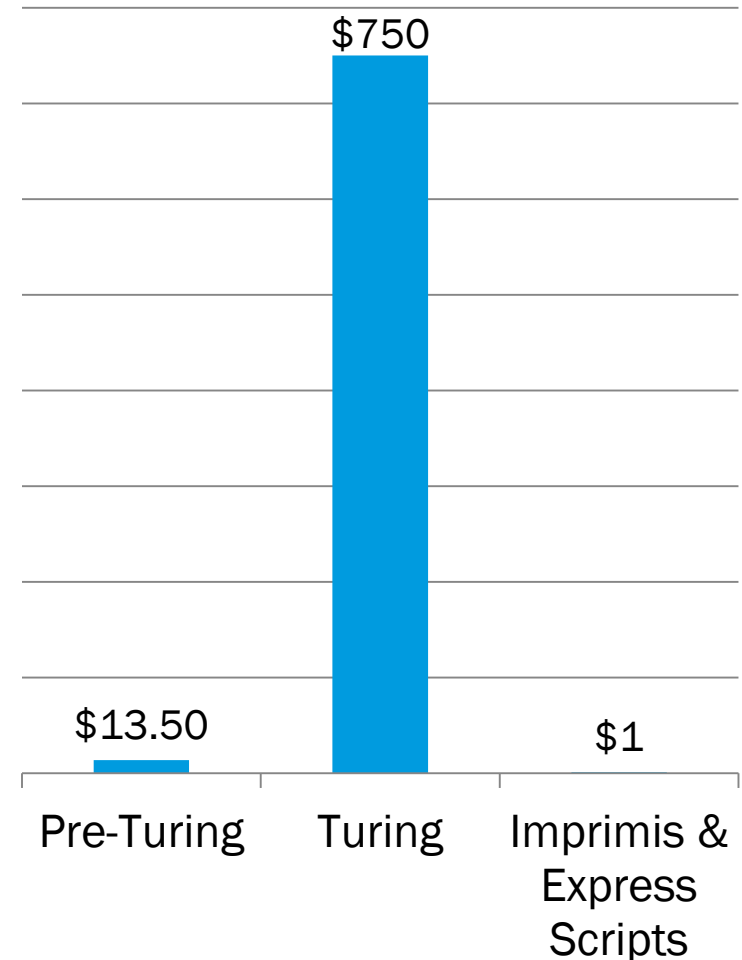
**Bloomberg
Business**

**Prices Doubled for More
Than 60 Drugs in 2015**

Bringing Daraprim in reach of patients and payers



Daraprim Price



The next frontier

Bloomberg News

**The People Who Brought You Cheaper
Hepatitis C Drugs Are Going After Cancer Next**

Indication-Based Management

Medications priced based on indication efficacy

BASED ON INDUSTRY THOUGHT LEADERSHIP



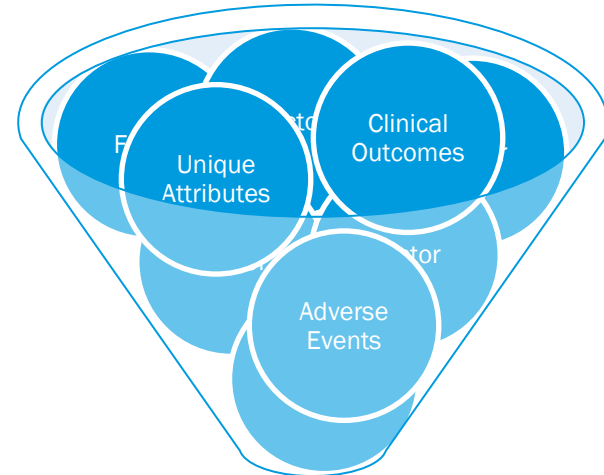
Steve Pearson, MD,
MSc, FRCP
President of Institute for Clinical
and Economic Review



Peter Bach, MD
Director, Memorial Sloan Kettering's
Center for Health Policy & Outcomes



MULTIPLE INDICATION FACTORS CONSIDERED



**INDEPENDENT
FEEDBACK ON COST
BASED ON EFFICACY**

FAIR INDICATION PRICING

Demanding what patients **DESERVE** – The **BEST** care at a **BETTER** price

Pharmaceutical companies

SHOW BETTER JUDGMENT IN PRICING

SUPPORT BIOSIMILARS



REFORM PATENT SYSTEM

REDUCE INTERNATIONAL PRICE DISPARITIES

Federal government

BOOST NIH RESEARCH

BETTER FUND FDA



ADJUST MALPRACTICE LAWS

BRING COST INTO CARE EQUATION

Payers

ACCEPT PAYMENT REFORM

ADVOCATE FOR POLICY CHANGES



WORK TOGETHER FOR COMMON CAUSE

Summary

1

Exorbitant drug pricing threatens the pharmacy benefit

2

Specialty trend is an ongoing and growing challenge

3

Biosimilars can create “headroom” for new expensive drugs

4

All stakeholders must be involved to create a sustainable path forward