

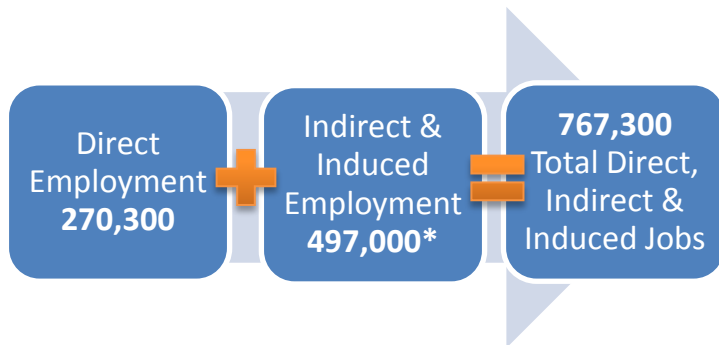
Biopharmaceutical Industry: The Value of Access to Innovative Medicines

IVP

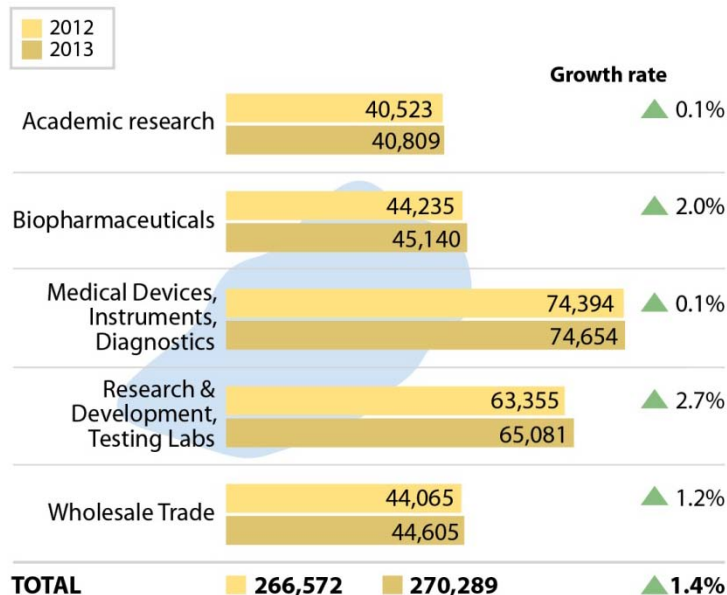
November, 2014



CALIFORNIA'S BIOMEDICAL INDUSTRY: AN INNOVATION PIPELINE



Top Biomedical Employment in California, 2012 vs. 2013

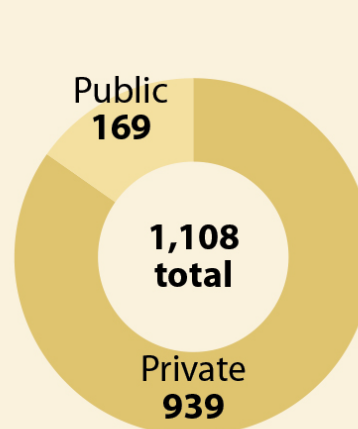


Biomedical Industry in California, 2013 (estimated)

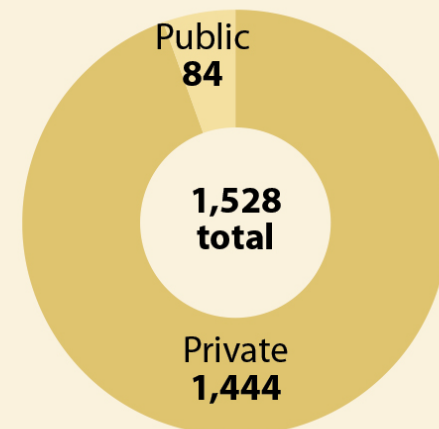
Total revenue	\$101 billion
Direct employment	270,300
Total wages and salaries	\$27.4 billion
Average annual biomedical industry wage	\$101,540
Total NIH grants awarded	\$3.3 billion
Total venture capital investments	\$3.8 billion
Total biomedical exports	\$22.2 billion
Direct federal taxes	\$7.2 billion
Direct state and local taxes	\$3.7 billion

Number of life sciences companies 2,636

Biopharmaceutical Companies

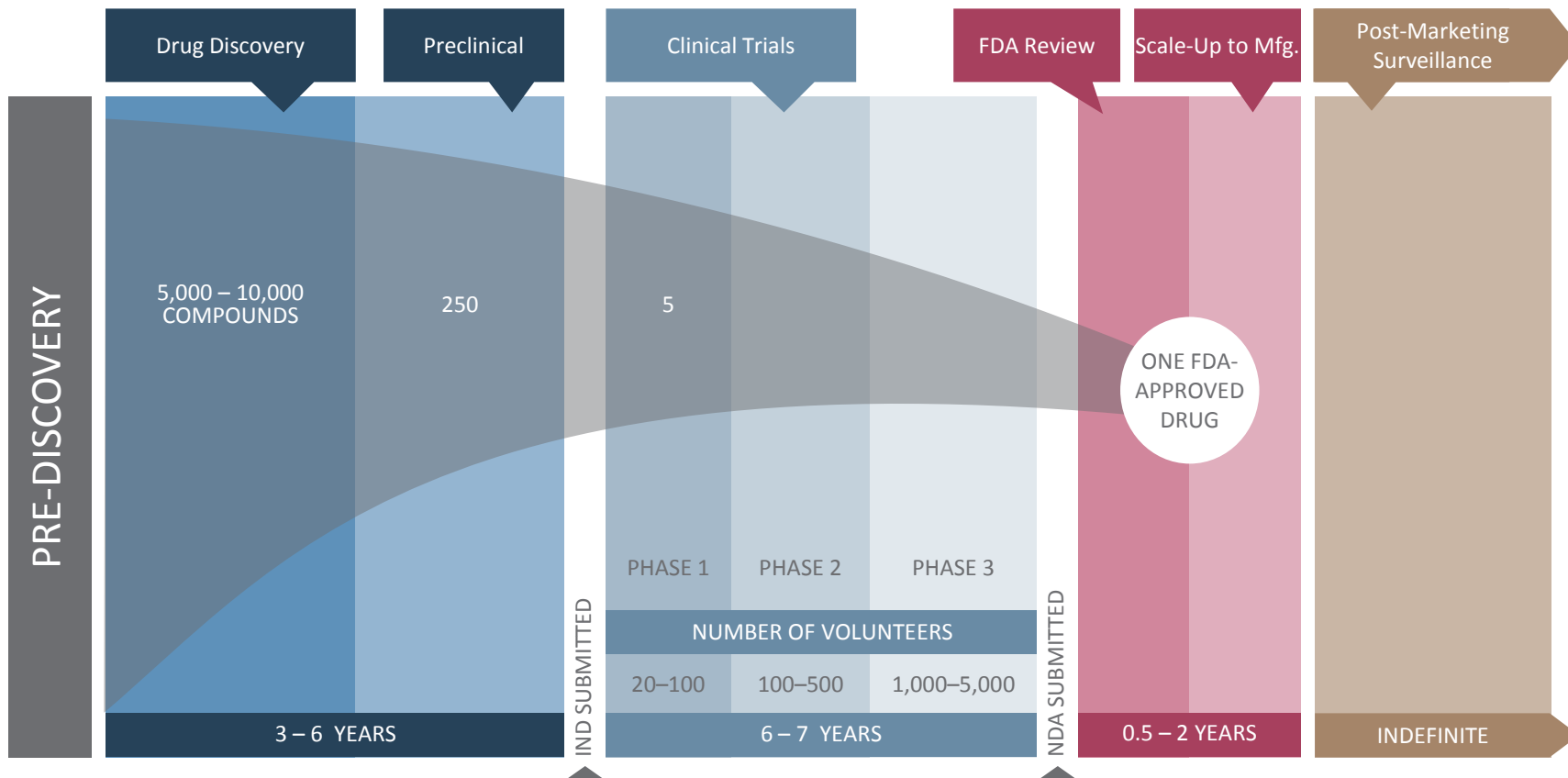


Device and Diagnostics Companies



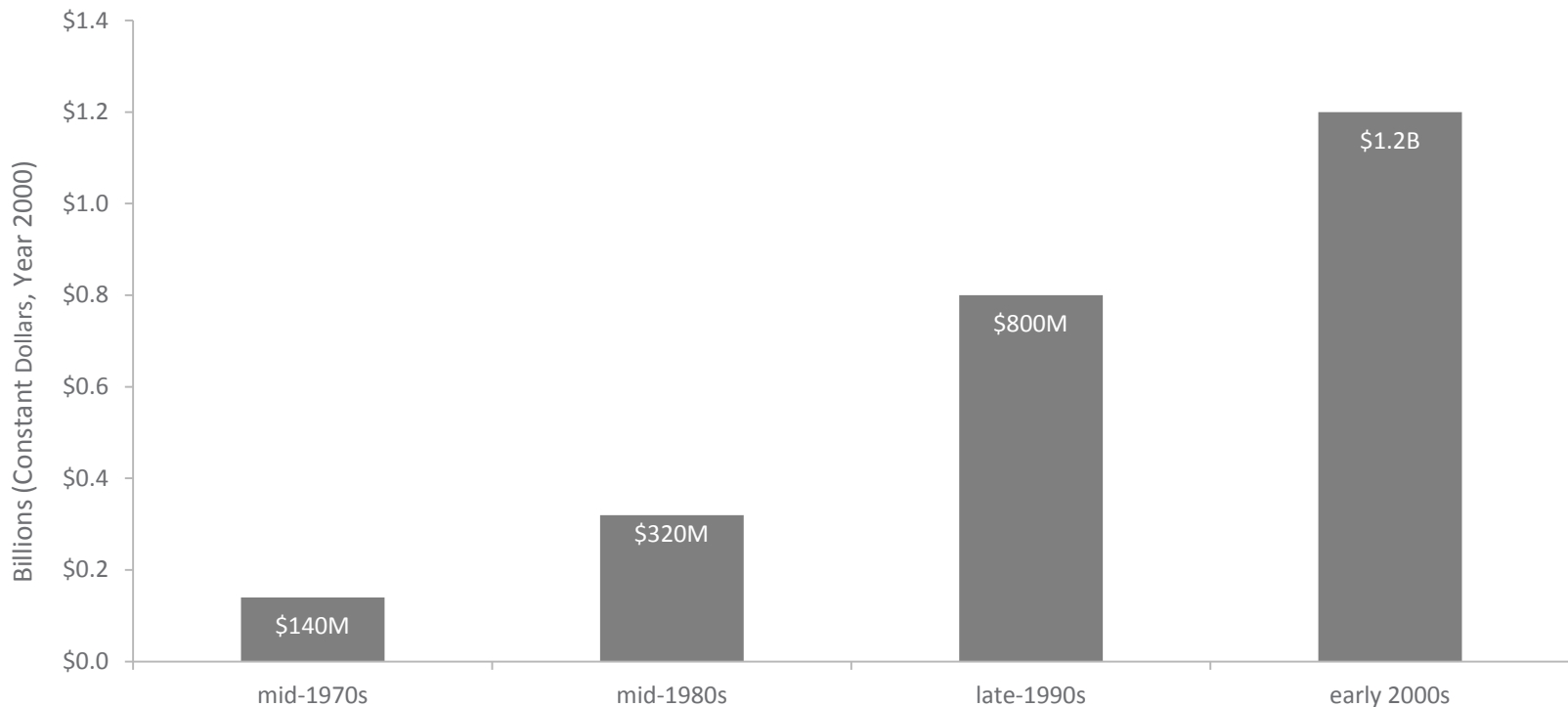
THE RESEARCH AND DEVELOPMENT PROCESS

Developing a new medicine takes an average of 10–15 years.



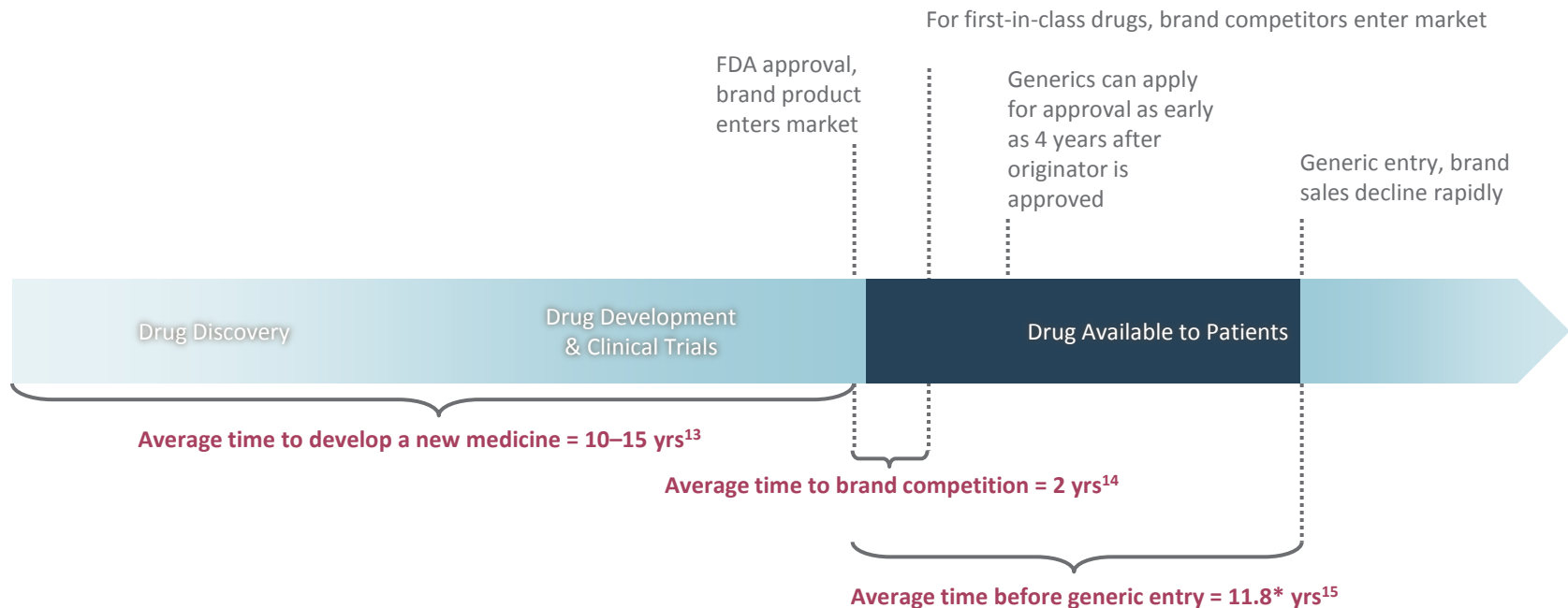
DRUG DEVELOPMENT COSTS HAVE INCREASED

The average cost to develop one new approved drug - including the cost of failures - increased approximately 50% between the late 1990s and the early 2000s.



ILLUSTRATIVE PHARMACEUTICAL LIFECYCLE

New pharmaceutical medicines face competition after a relatively short period on the market.



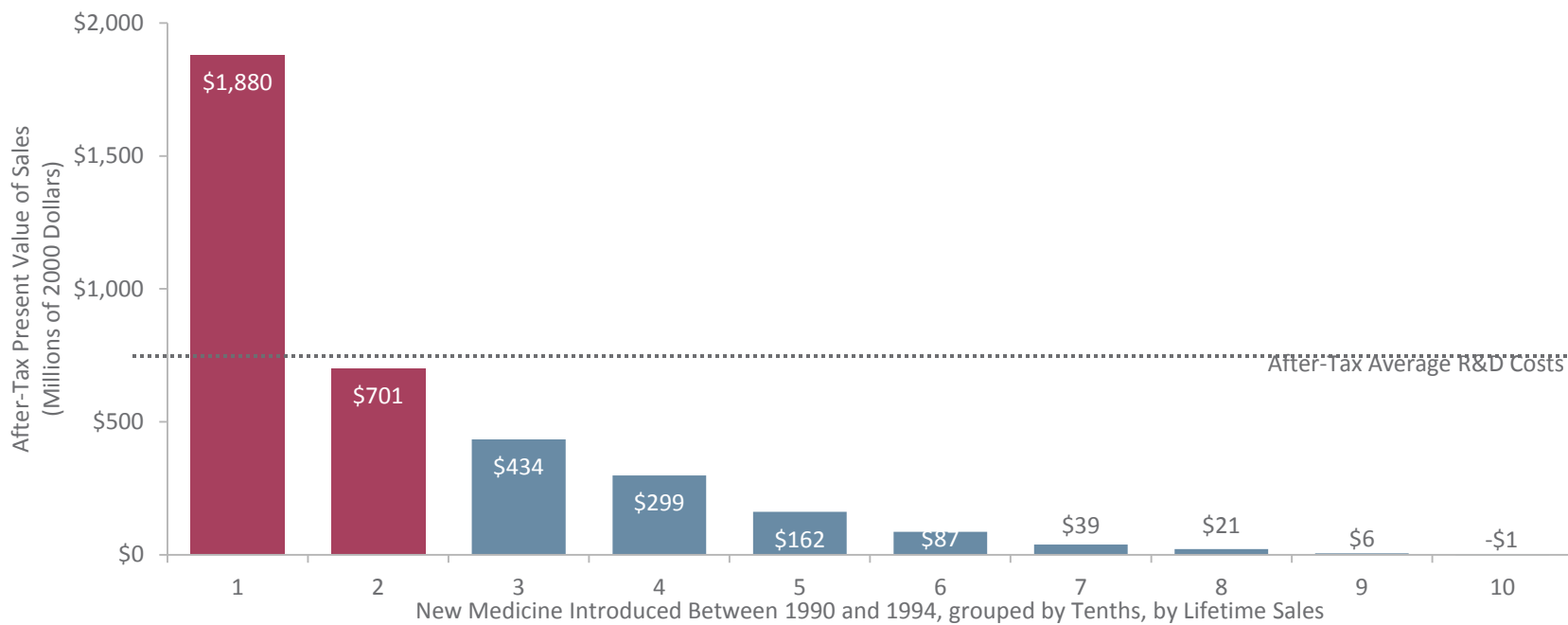
* Refers to new drugs (i.e., excludes new forms of administration) with annual sales in 2008 of more than \$100 million, which accounted for 95% of the sales of new medicines exposed to generic competition.

Sources: PhRMA¹³; J. DiMasi and C. Paquette¹⁴; H. Grabowski, M. Kyle, et al.¹⁵; PhRMA¹⁶

FEW APPROVED MEDICINES ARE COMMERCIALY SUCCESSFUL

Ongoing investment in R&D depends on the commercial success of a few products that must make up for all the rest, including those that never reach the market.

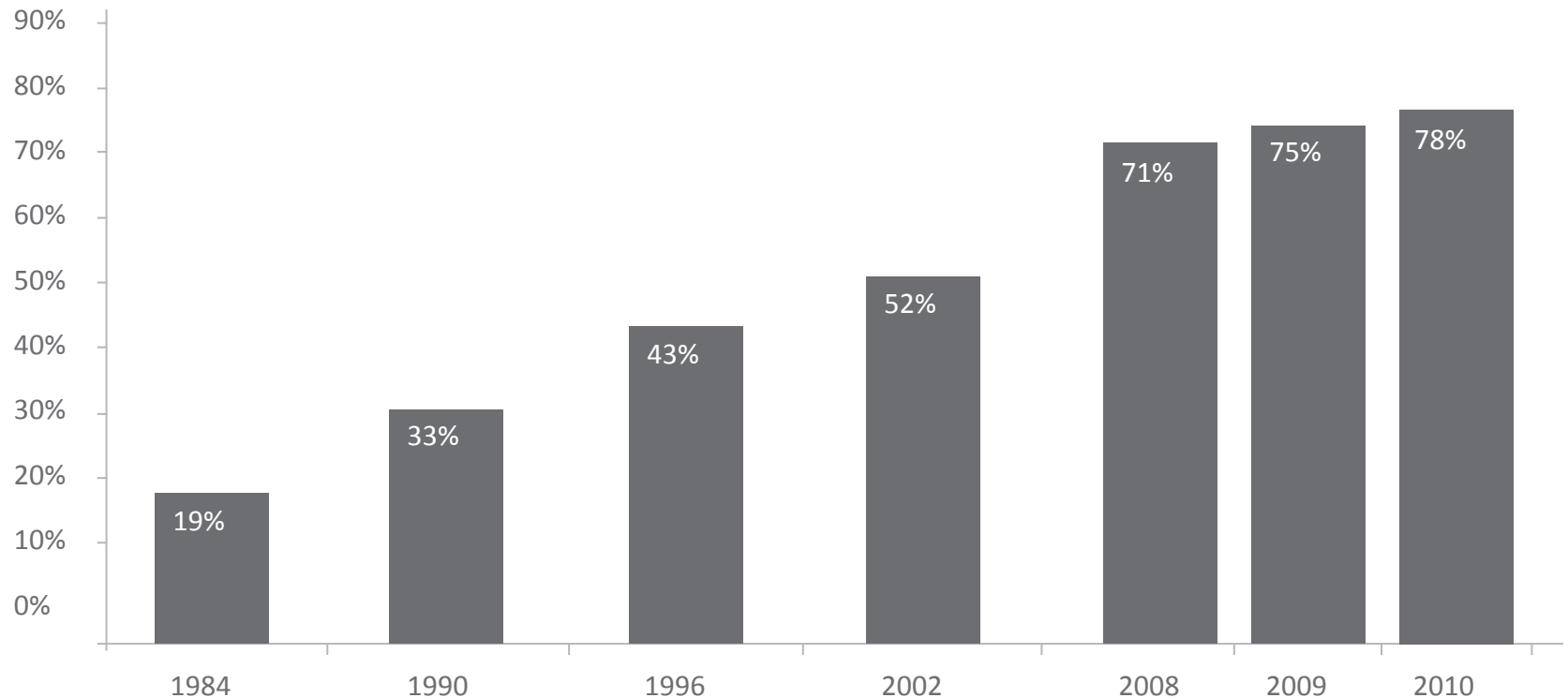
Just Two in 10 Approved Medicines Produce Revenues that Exceed Average R&D Costs



MORE THAN THREE-QUARTERS OF U.S. PRESCRIPTIONS ARE FILLED WITH GENERICS

In 2010, generics accounted for 19 of the 20 most commonly prescribed medicines.⁷

Generic Share of Prescriptions Filled 1984–2010

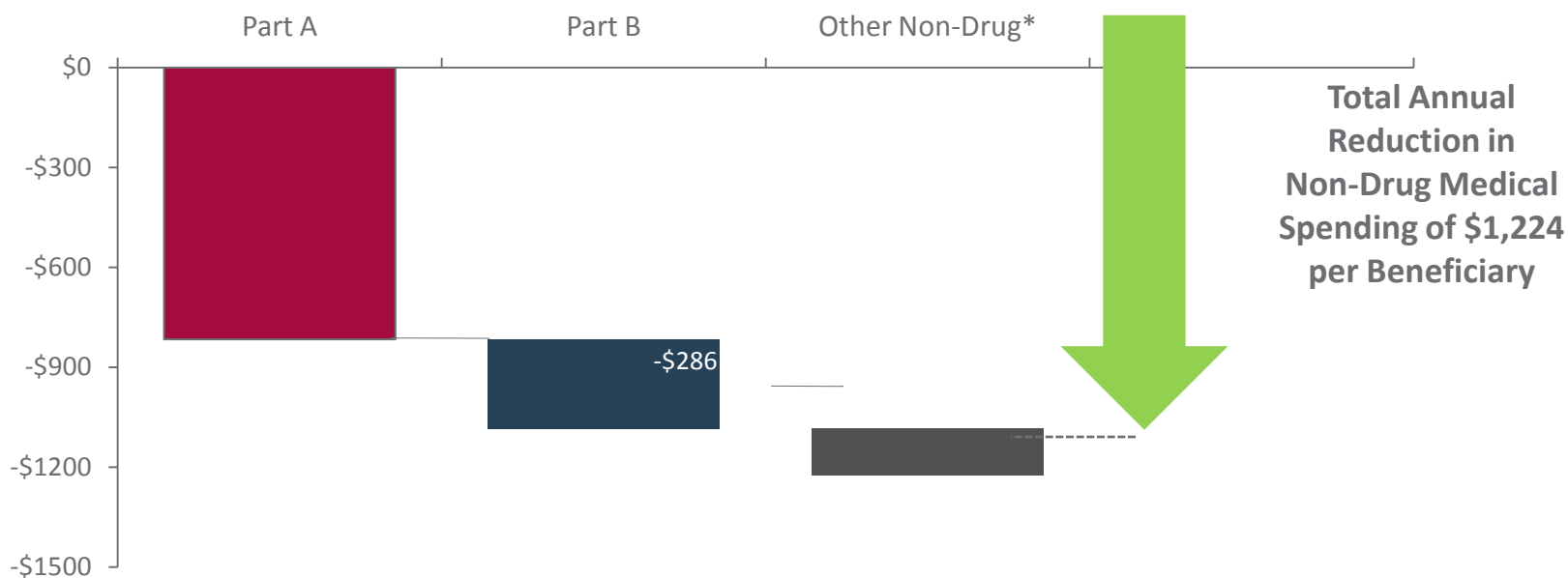


Source: IMS^{7,8}

NON-DRUG MEDICAL SPENDING DECLINED SIGNIFICANTLY AFTER PART D

Implementation of Part D was associated with a \$1,200 decrease in annual non-drug medical spending among enrollees with prior limited or no drug coverage¹⁸ – an overall savings of \$13.4 billion in 2007, the first full year of the Part D program.¹⁹

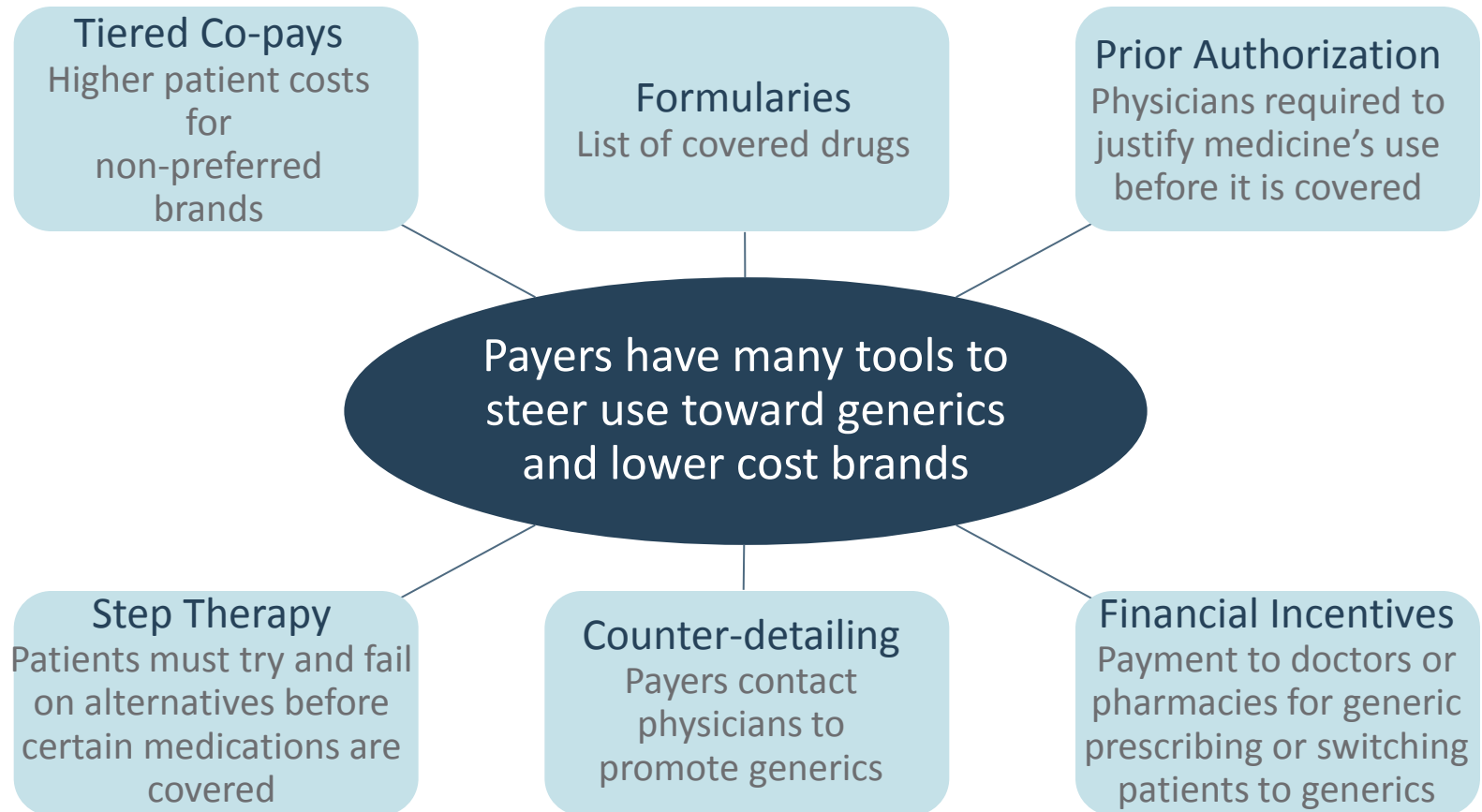
Average Annual Reduction in Non-Drug Medical Spending in 2006 and 2007, for Beneficiaries Gaining Drug Coverage Through Part D



*Other non-drug figure is a PhRMA estimate of the balance of the total amount and consists of home health, durable medical equipment, hospice, and outpatient institutional services.

Sources: J.M. McWilliams, *et al.*¹⁸; C.C. Afendulis and M.E. Chernew¹⁹

PAYERS INFLUENCE WHICH MEDICINES PATIENTS RECEIVE



WHAT WE HAVE ACHIEVED THROUGH MEDICINE

Extraordinary Advances in Treatment

- Since 1980 **life expectancy for cancer patients has increased by 3 years**. Medicines alone account for 50-60% of survival increases.
- Thanks in part to new medicines, **heart failure and heart attack deaths fell by 45%** in just the last decade.
- Since the introduction of the first antiretroviral treatments, **HIV/AIDS deaths have dropped by nearly 83%**.

Extraordinary Savings for Patients & The System

- In Medicare, **each prescription saves \$57** in avoidable hospital costs.
- **Diabetes: \$1 more spent on diabetes medicines = \$7.10 less spent** on other services
- **High Blood Pressure:** In 2007, anti-hypertensives prevented 833,000 stroke and heart attack hospitalizations, **saving \$16.5 billion in medical costs**.

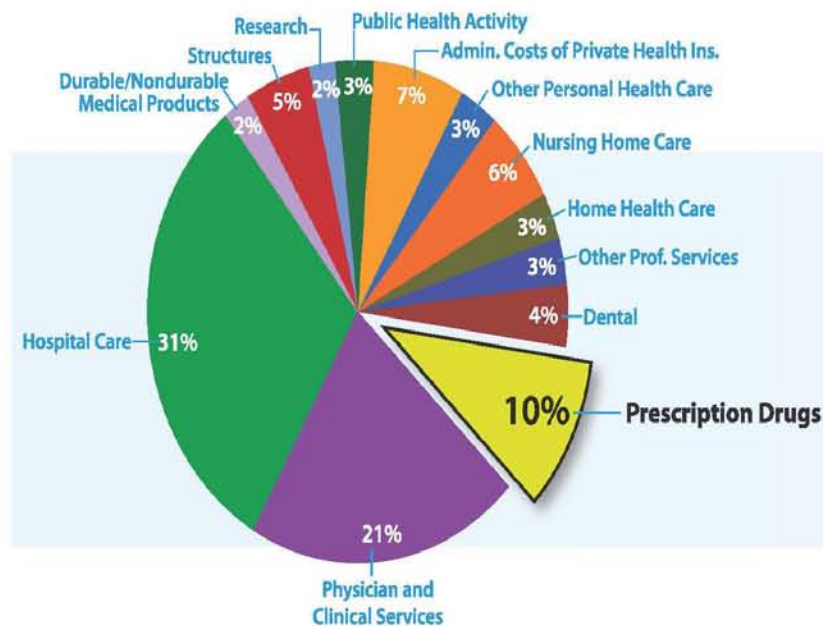
High Value Jobs & Economic Engine for

- Supports more than **4 million total American jobs**, with 650,000 directly employed.
- **Supports 270,000 total CALIFORNIA jobs**
- Generates **\$33 billion in state and local tax revenue**, and more than \$52 billion on the federal level in 2009
- **Overall economic impact: \$918 billion annually.**

Current Insurance System Overcharges Patients for Cost-Effective Medicines

Medicines are a cost-effective option relative to other health care interventions and a small percentage of total health spending. According to the Centers for Medicare & Medicaid Services, medicines account for only 10 cents out of every health care dollar spent¹.

While prescriptions comprise a small portion of health care spending in the United States, patients are currently paying proportionally higher out-of-pocket costs for prescription medicines than they do for other medical services.



AVERAGE PATIENT OUT-OF-POCKET COSTS BY TYPE OF SERVICE IN THE COMMERCIAL MARKET²

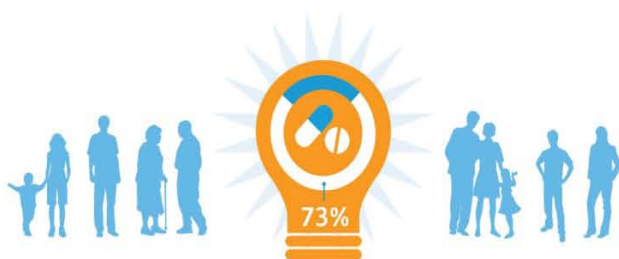
HOSPITAL INPATIENT	HOSPITAL OUTPATIENT	EMERGENCY	PHYSICIAN	PRESCRIPTIONS
4%	7%	9%	17%	22%

Access to innovative medicines, preventative treatments and cures are proven to reduce the use of higher cost conventional health care services. Yet, the current structure of our health care system disproportionately charges patients more for prescription drugs than for other medical services relative to their cost to the system as a whole. This threatens to undermine the integrity of health insurance, which is to spread and share health care costs.

In the new era of health care reform, health benefits must evolve in a way that improves – not penalizes – patient access to more cost-effective and medically beneficial treatment options.

A wide range of studies show: Improved use of recommended medications is associated with reduced total health care costs.

Biopharma innovations accounted for 73% of the total increase in life expectancy between 2000-2009 ⁶.



60,000
HEART ATTACKS REDUCED

22,000
STROKES REDUCED

40,000
LIVES SAVED

In one year alone, statins saved 40,000 lives, prevented 60,000 heart attacks and 22,000 strokes and reduced related health care costs by 27% per patient ⁷.

INNOVATION
SAVES LIVES
+ MONEY

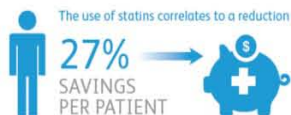
\$94,000

VS.

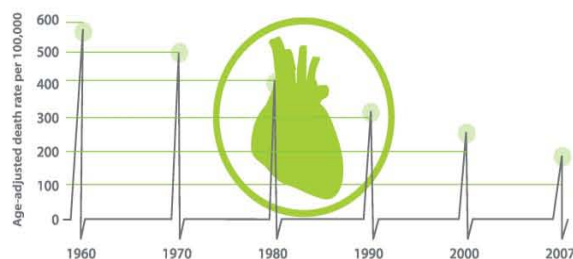
\$600,000

Innovations in Hepatitis C treatments are providing a cost-effective cure to the disease: \$94,000 for a three-month course of treatment ⁹ vs. \$600,000 liver transplant + \$6,000 ongoing monthly costs post-surgery ¹⁰.

The use of statins correlates to a reduction in health care costs:



MEDICATION THERAPY ACCOUNTS FOR ABOUT 1/3 OF THE REDUCTION IN CARDIOVASCULAR DISEASE MORTALITY ⁸.



US Age-Adjusted Death Rate for Heart Disease: 1960-2007

THE VALUE OF MEDICINE AND PREVENTION

\$1 MORE spent on diabetes medicines = \$7.10 LESS spent on other services ¹¹

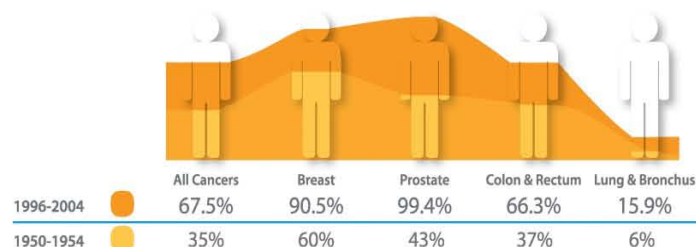


For every **\$1.00** the U.S. spends on childhood vaccinations,



\$10.20 is saved in disease treatment costs. ¹²

INNOVATIVE CANCER TREATMENTS HAVE RESULTED IN 30% INCREASE IN SURVIVAL RATES IN THE U.S. ¹³



MEDICATION AND SUPPLIES ACCOUNT FOR ONLY 12% OF THE TOTAL COST OF DIAGNOSED DIABETES IN THE U.S. ¹⁴

	TOTAL COST	Inpatient and Outpatient Care	Diabetes Medication and Supplies
2007	\$174B	59%	12%
2012	\$245B	60%	12%

MEDICINES ARE HELPING TO CONTROL RISING HEALTH CARE COSTS

through their role in reducing the need for other more costly interventions.



Fact: Patients who adhere to their medication regimens enjoy better health outcomes and make less use of urgent care and inpatient hospital services, compared to patients with similar medical conditions who are not adherent.



Fact: The link between prescription medicine use and spending on other health care services among Medicare D patients showed an overall savings of \$13.4 billion in 2007, the first full year of the program.



Fact: Prescription medicines continue to comprise only a small portion of health care spending in the United States. In fact, medicines have accounted for only 10 cents out of every health care dollar spent.



Q & A