



# *How IT can (help) fix US healthcare*

Bruce Eckert

Director  
KPMG  
Deal Advisory & Strategy

How IT can (help) fix US healthcare

# *Conflict of Interest Disclosure*

Bruce Eckert

Participated in consulting engagements with: Premier, Inc., Olympus Corporation, and Abzena Pharmaceuticals

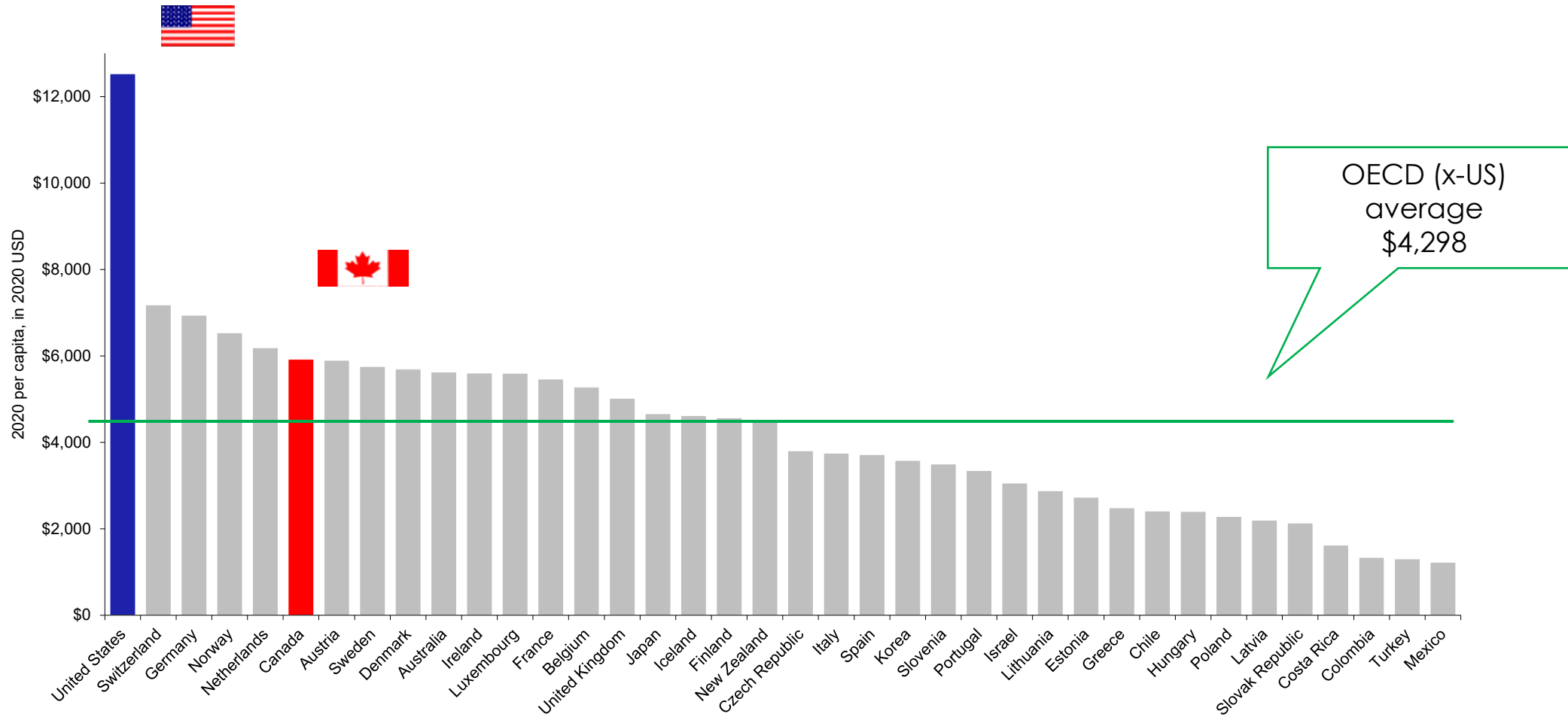


## *Bruce Eckert*

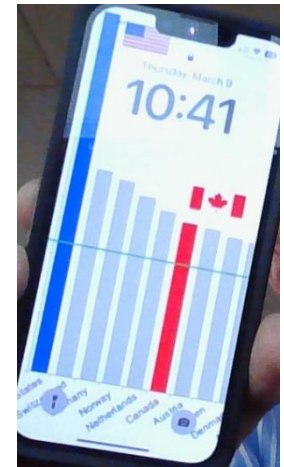
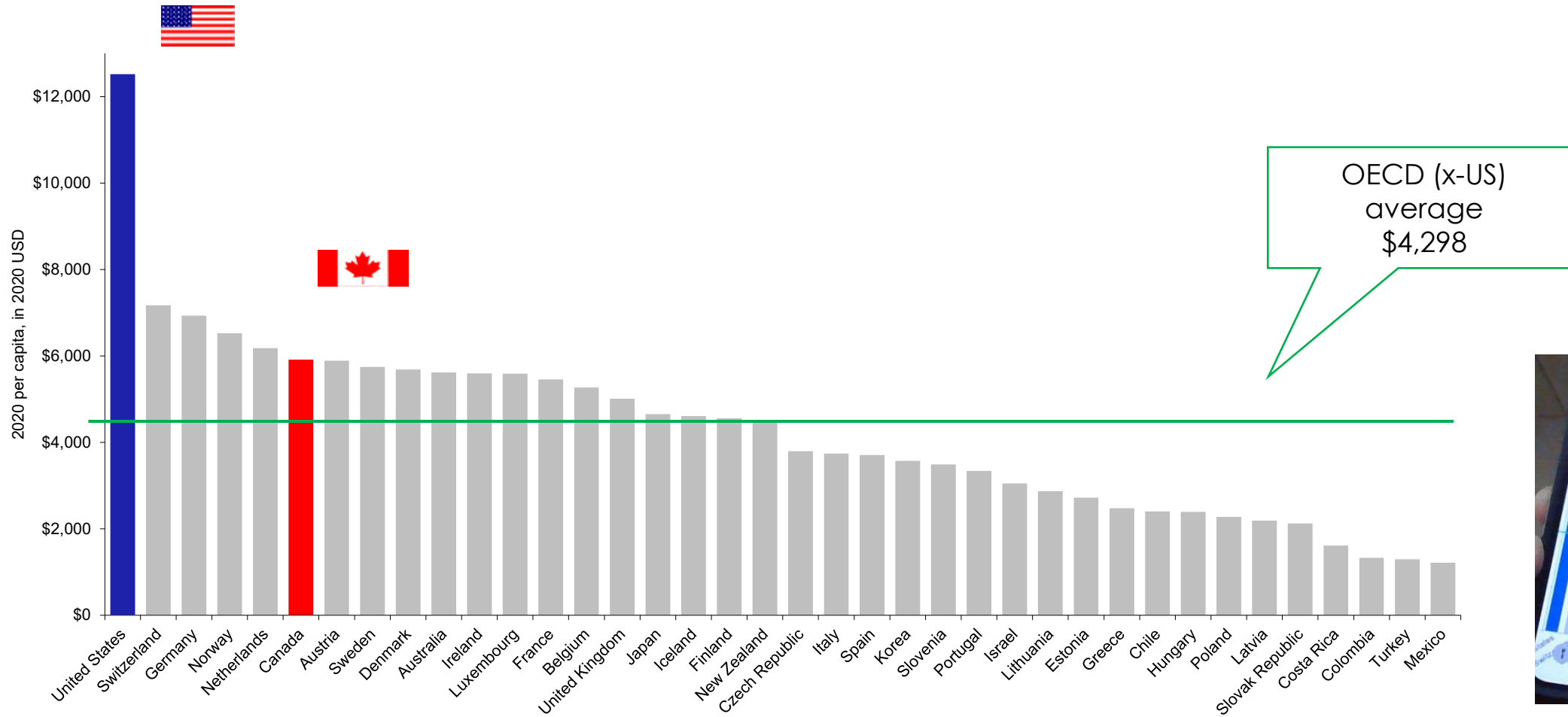
*Director, KPMG Deal Advisory and Strategy*

Bruce Eckert assists healthcare organizations strategize and execute the IT aspects of mergers and acquisitions. In the past, he led IT for regional and behavioral healthcare systems. Bruce is a HIMSS Fellow, CPHIMS certified, and a member of the American Economic Association. He earned an MBA at Michigan State University, and a BS from the University of Chicago. In those rare moments when Bruce is not thinking about healthcare IT, he likes to hike and camp, and tend his small vegetable garden.

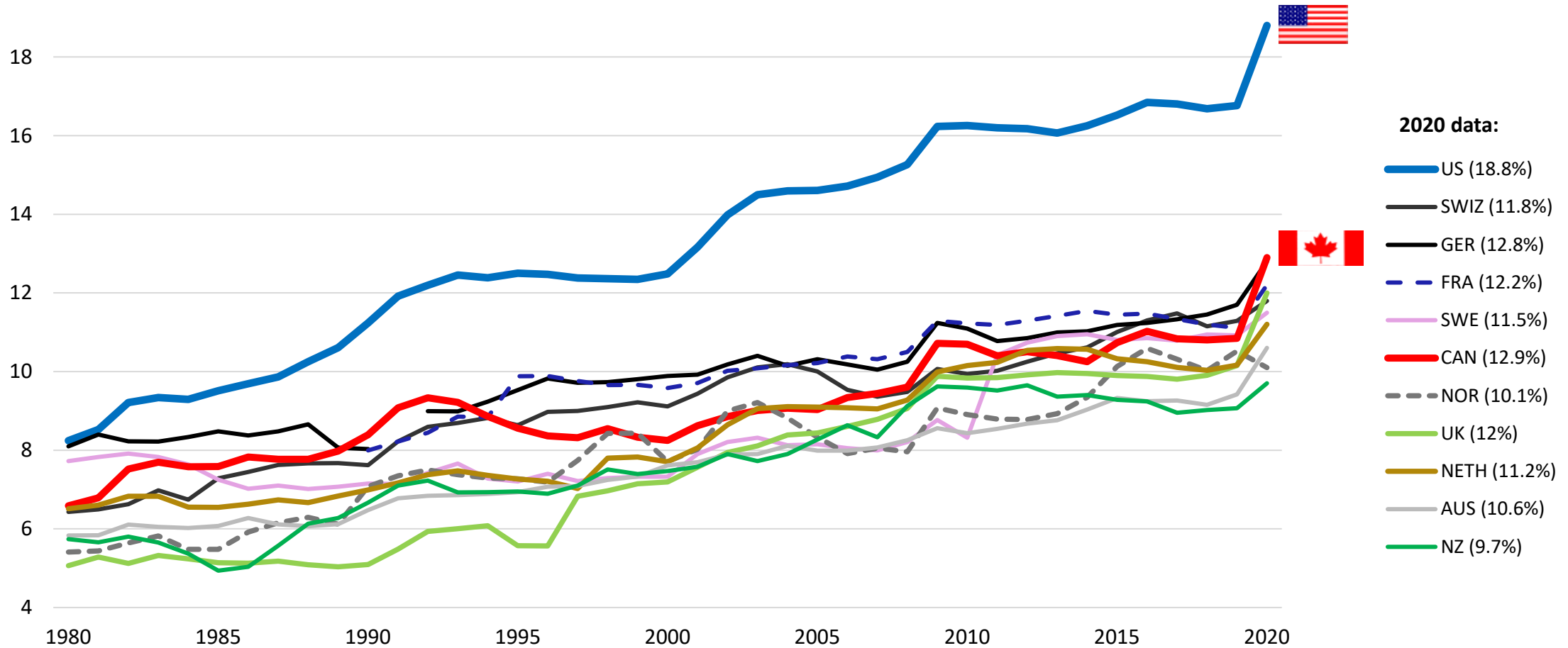
# “Houston ... We have a problem ...”



# “Houston ... We have a problem ...”

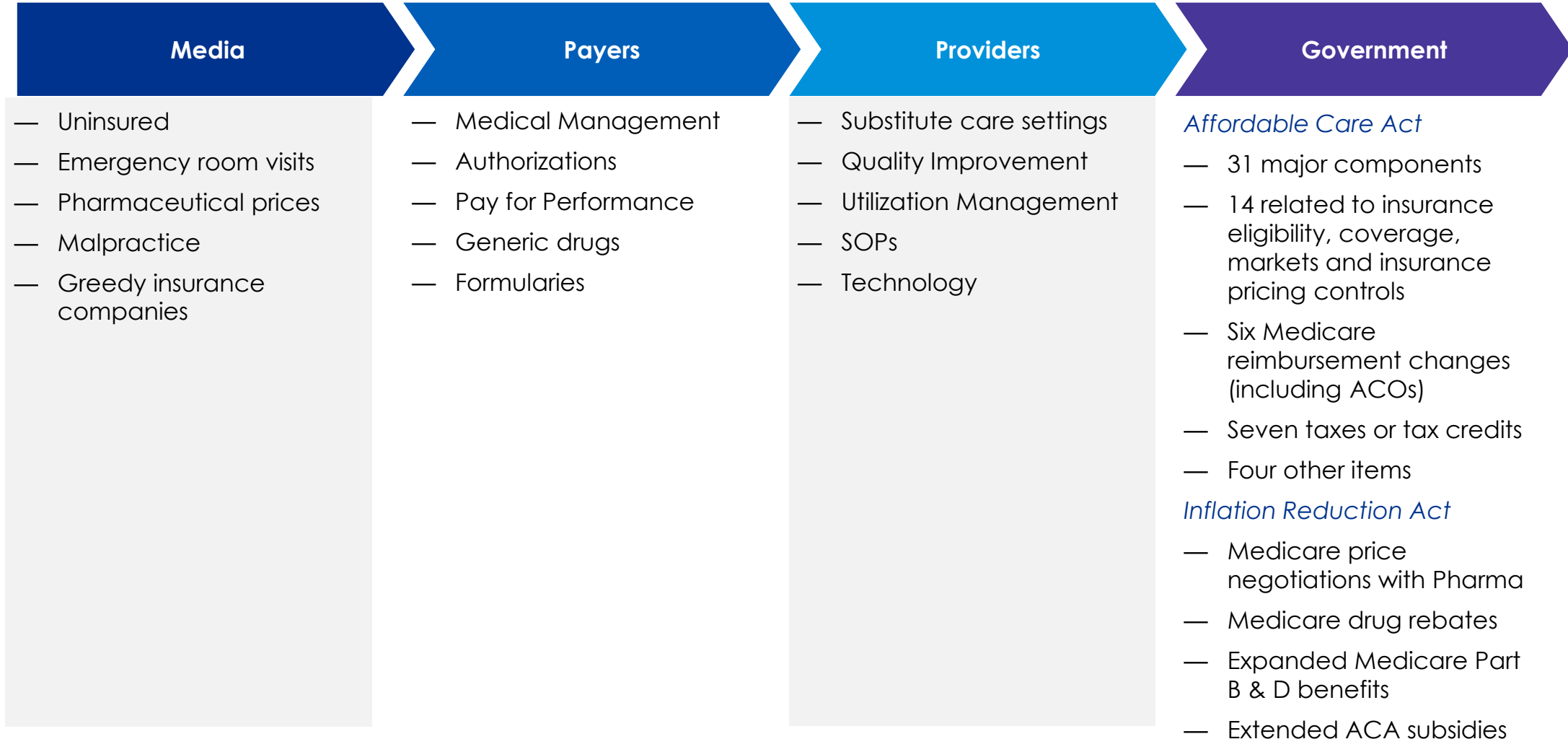


# Health Care Spending, Percentage of GDP



Notes: Current expenditures on health. Based on System of Health Accounts methodology, with some differences between country methodologies.  
Data: OECD Health Data, Aug 2022.

# What are we doing about it?



## *Ross Perot, October 11, 1992*



“

We got the most expensive health care system in the world; it ranks behind 15 other nations when we come to life expectancy, and 22 other nations when we come to infant mortality. So we don't have the best.

Pretty simple, folks -- if you're paying more and you don't have the best, if all else fails go copy the people who have the best who spend less, right?

Well, we can do better than that. ”



# Four health systems around the world

Single payer



Bismarck



Cash/Fee for service



National Health Service



How IT can (help) fix US healthcare

# Four health systems around the world ~~world~~ U.S.A.

## Single payer



## Bismarck





## Cash/Fee for service



## National Health Service



# What if we were Canada?

			Difference
Healthcare Proportion of GDP (2020)	19.7%	13.7%	6%
Per Capita Healthcare Spending 2020 current USD	\$12,530	\$5,920	-\$6,610
<b>Payment Sources</b>			
Government	50.6%	75.1%	+24.5%
Insurance	30.0%	11.5%	-18.5%
Out of Pocket	9.4%	13.4%	+4.0%
<b>Per Capita Payments by Source</b>			
Government	\$6,340	\$4,446	\$(1,894)
Insurance	\$3,759	\$681	\$(3,078)
Out of Pocket	\$1,178	\$793	\$(385)
% of Govt Budget spent on Healthcare	32.5%	28.2%	-4.3%
Potential Per Capita Government Savings			\$ 1,894
U.S. Population			330 million
Total Government Savings			\$ 625 billion

# Three possible reasons



Americans use more healthcare



American healthcare is better

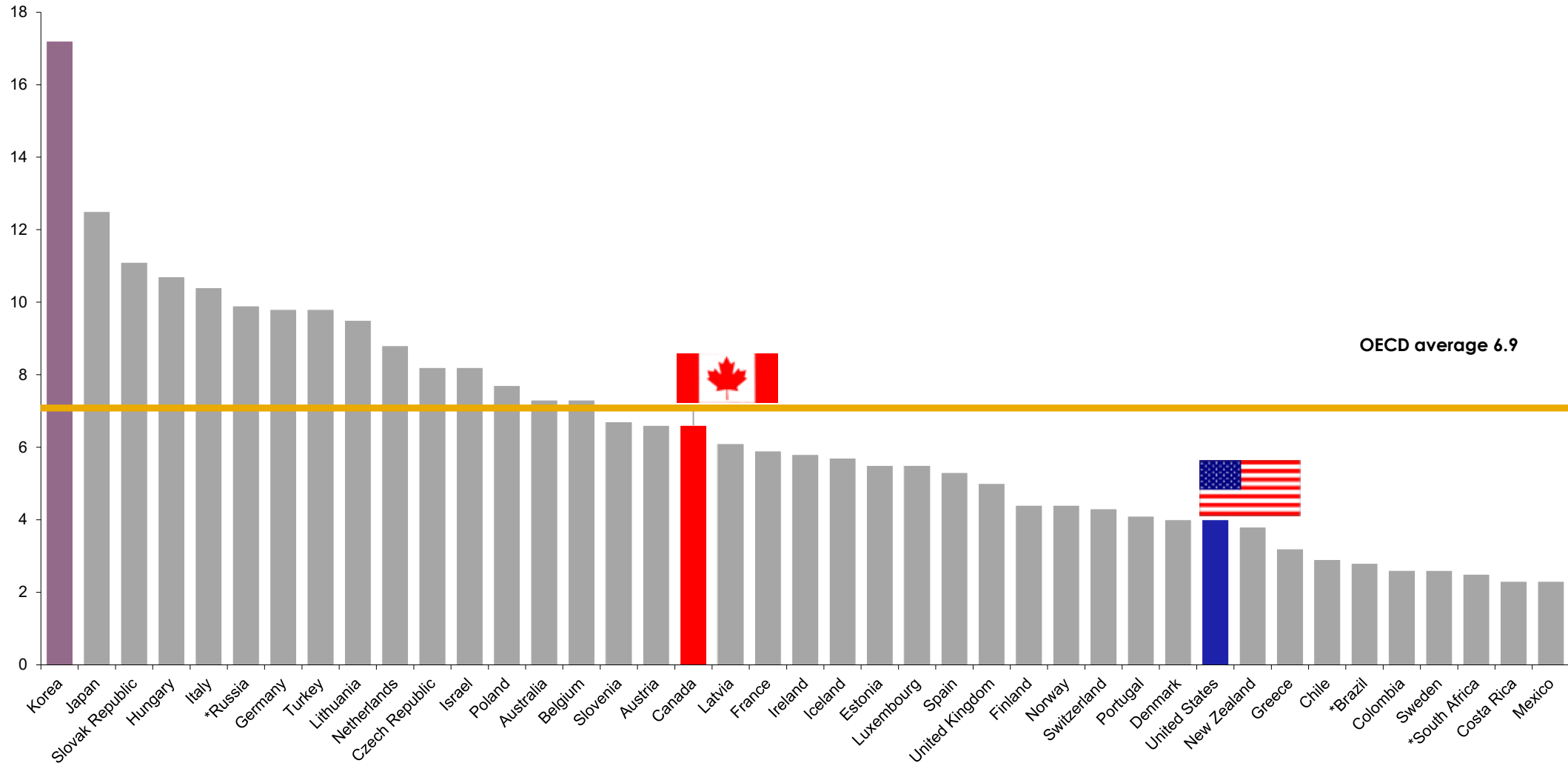


American healthcare is inefficient

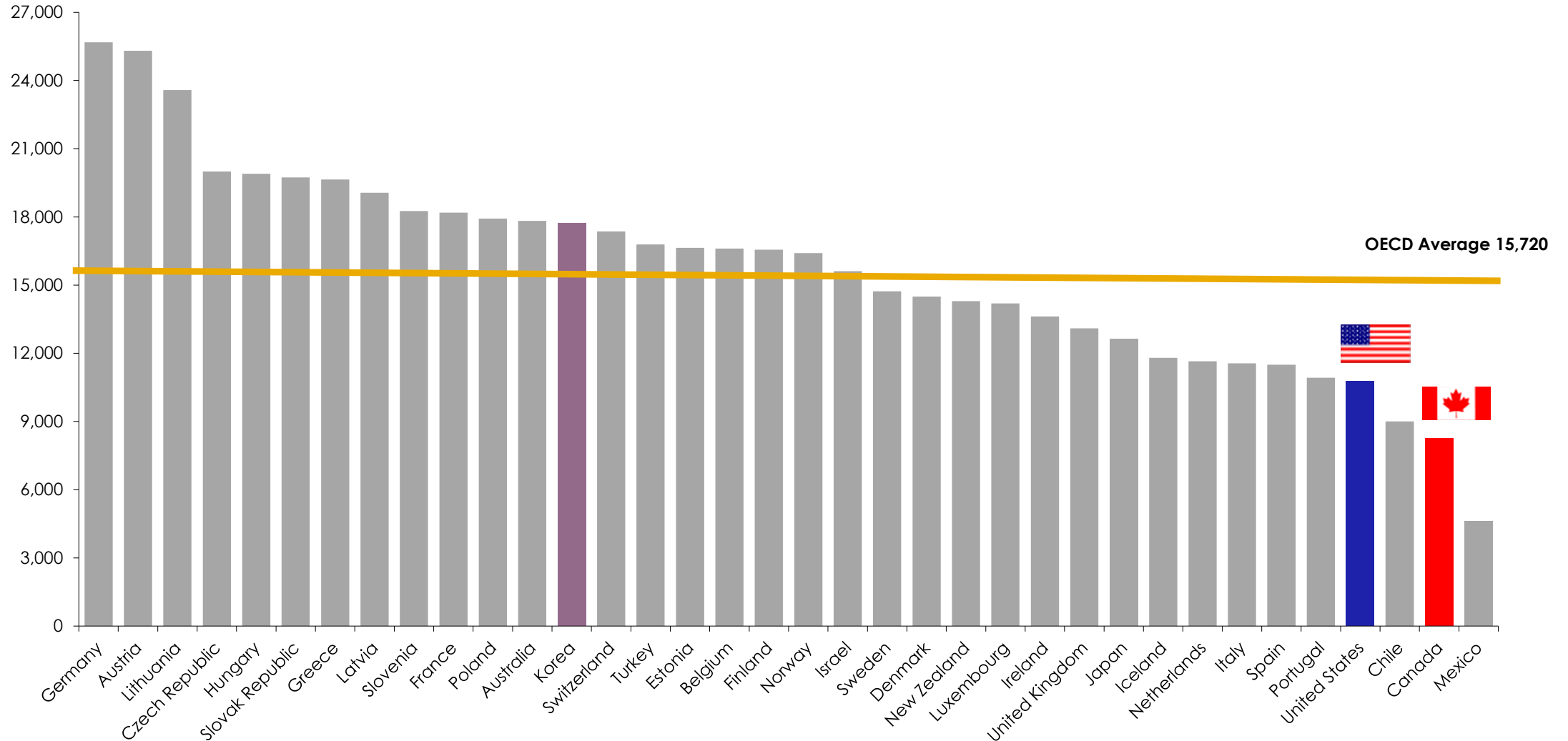


*Do Americans use more  
healthcare?*

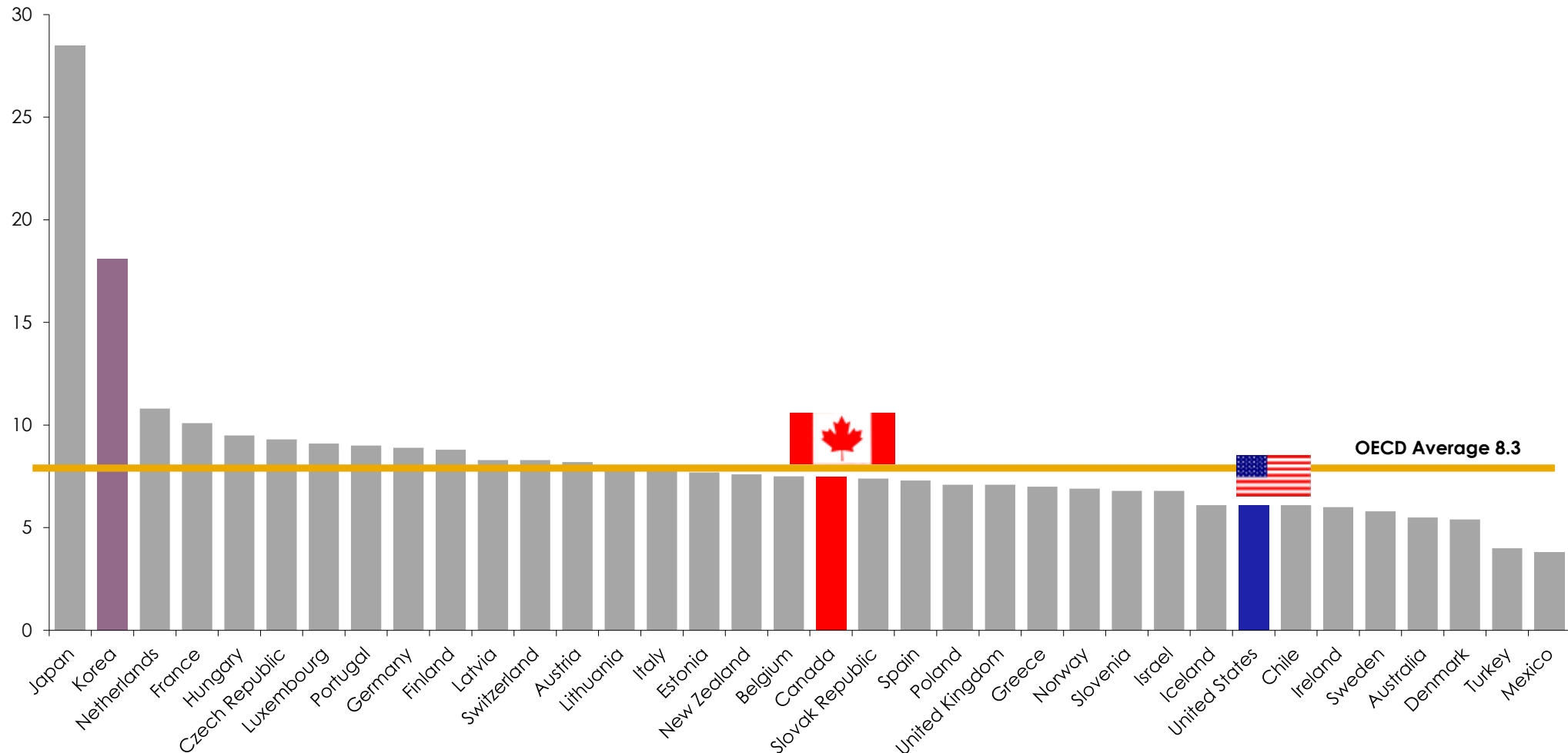
# Annual physician visits per person



# Annual inpatient discharges per 100K

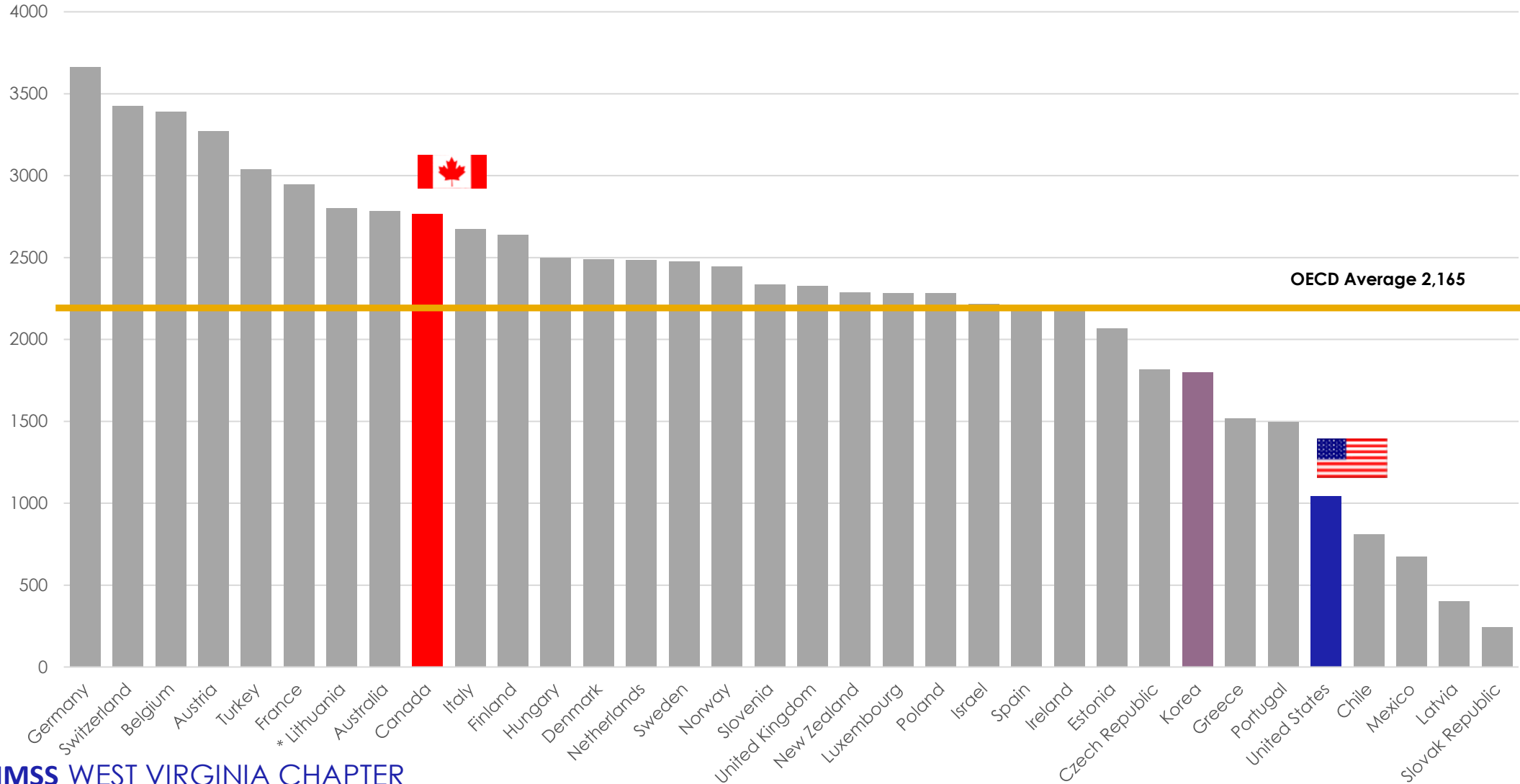


# Inpatient average length of stay





# Surgeries per 100,000



# Three possible reasons



**X** Americans use more healthcare



American healthcare is better

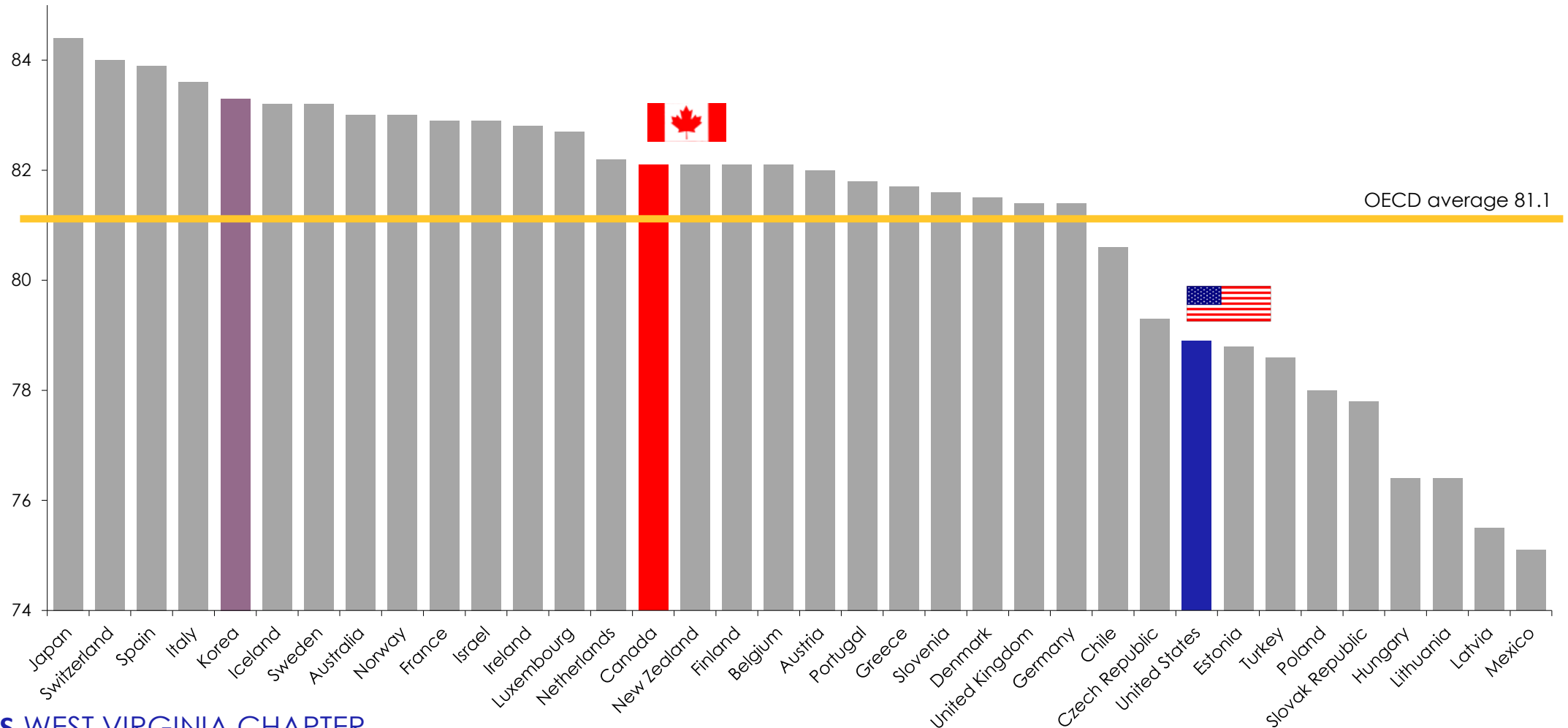


American healthcare is inefficient

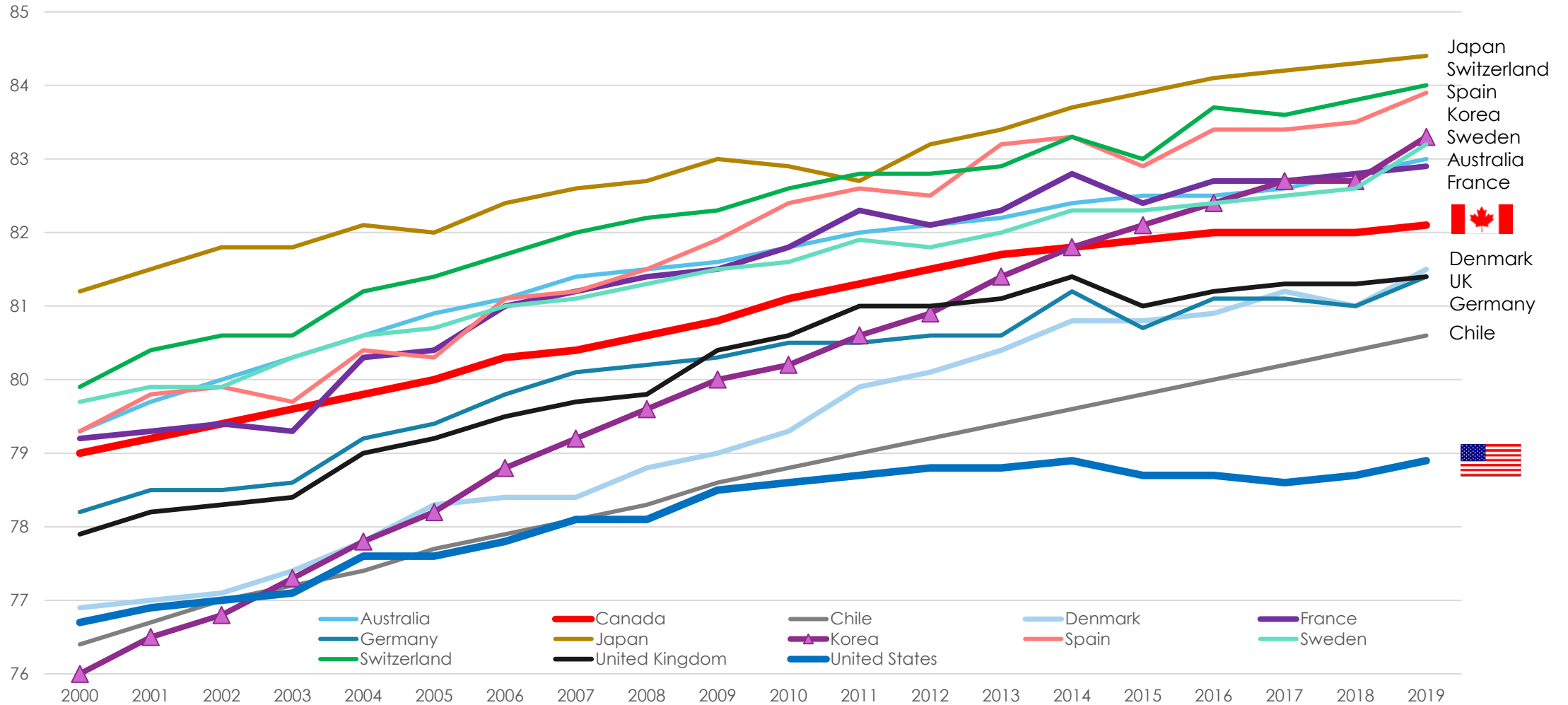


*Is American healthcare  
better?*

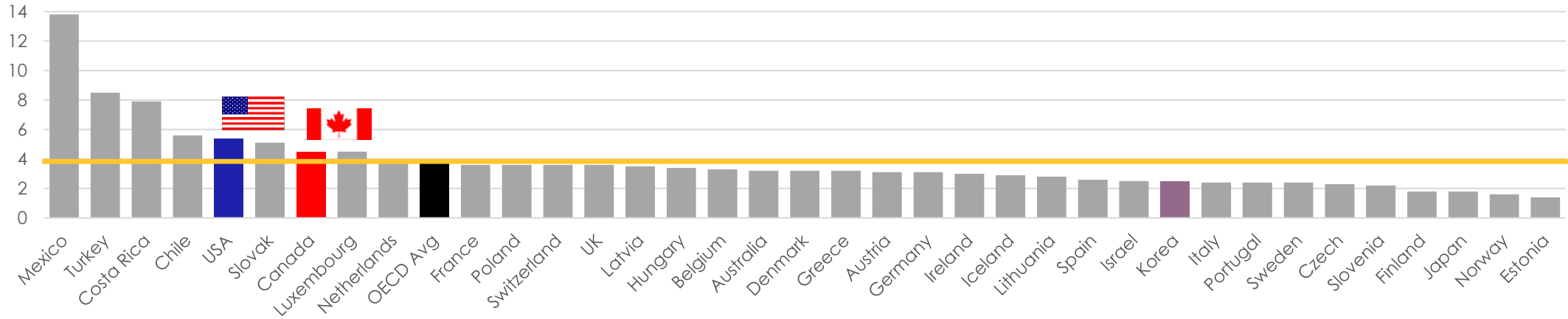
# Life expectancy at birth – 2019



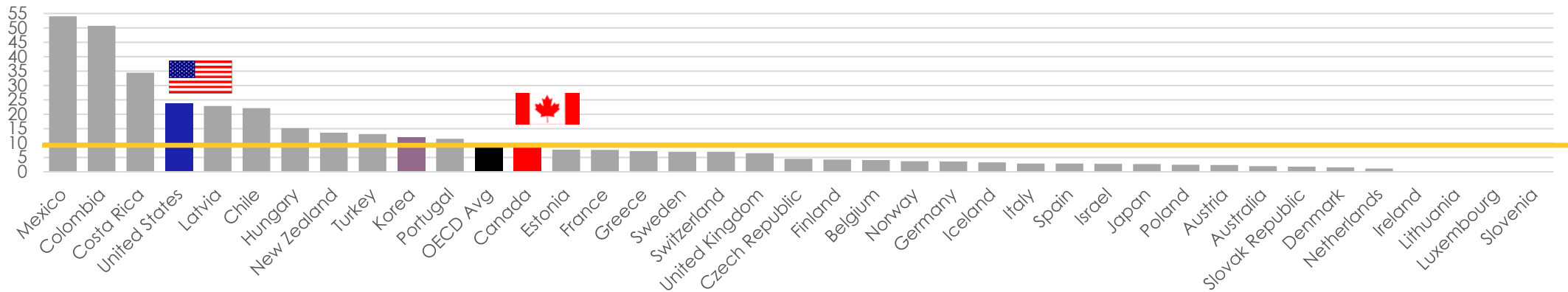
# Life Expectancy Trends

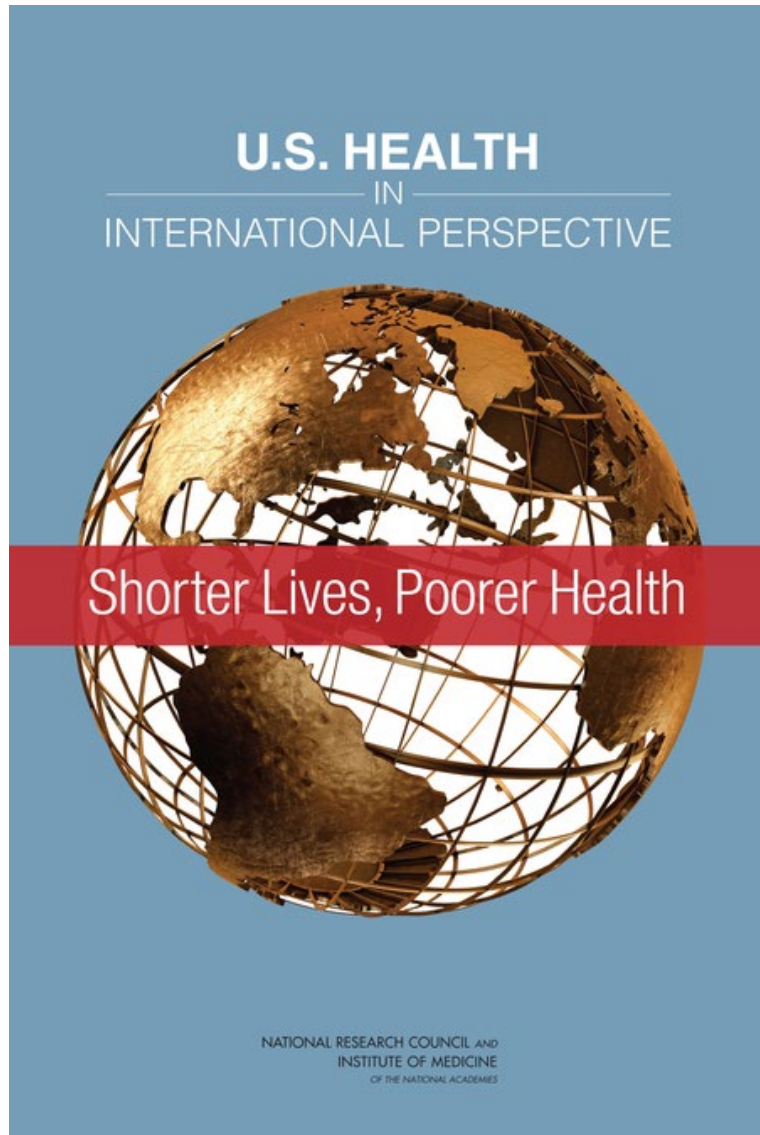


# Infant Mortality, 2020, per 1000 live births



# Maternal Mortality, 2020\*, per 100K deliveries





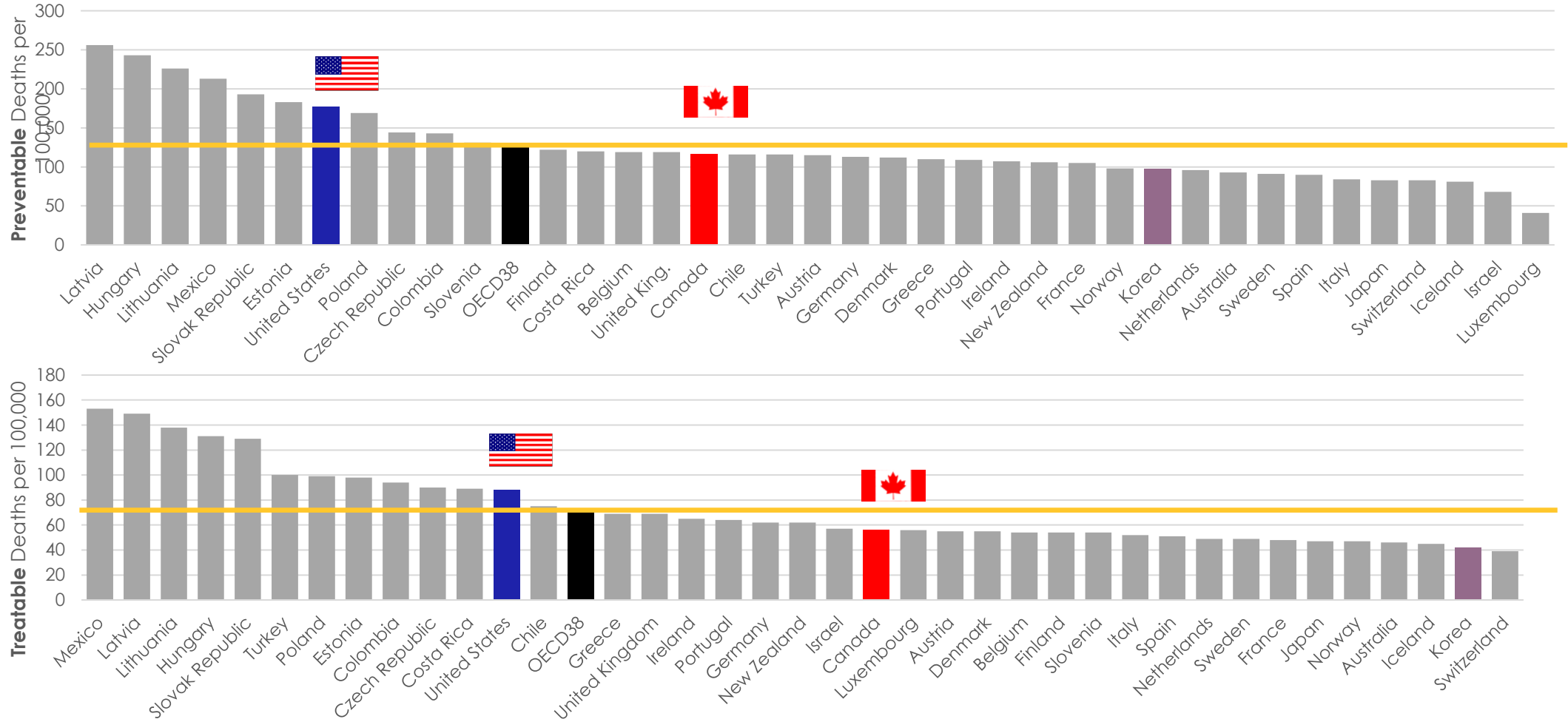
The United States spends much more money on health care than any other country. Yet Americans die sooner and experience more illness than residents in many other countries. While the length of life has improved in the United States, other countries have gained life years even faster, and our relative standing in the world has fallen over the past half century.

The report identifies a number of misconceptions about the causes of the nation's relatively poor performance. The problem is not simply a matter of a large uninsured population or even of social and economic disadvantage. It cannot be explained away by the racial and ethnic diversity of the U.S. population. The report shows that even relatively well-off Americans who do not smoke and are not overweight may experience inferior health in comparison with their counterparts in other wealthy countries.

- U.S. Health in International Perspective: Shorter Lives, Poorer Health
- 2013, National Research Council and Institute of Medicine of the National Academies



# Deaths from preventable & treatable conditions





# Three possible reasons



Americans use more healthcare



American healthcare is better

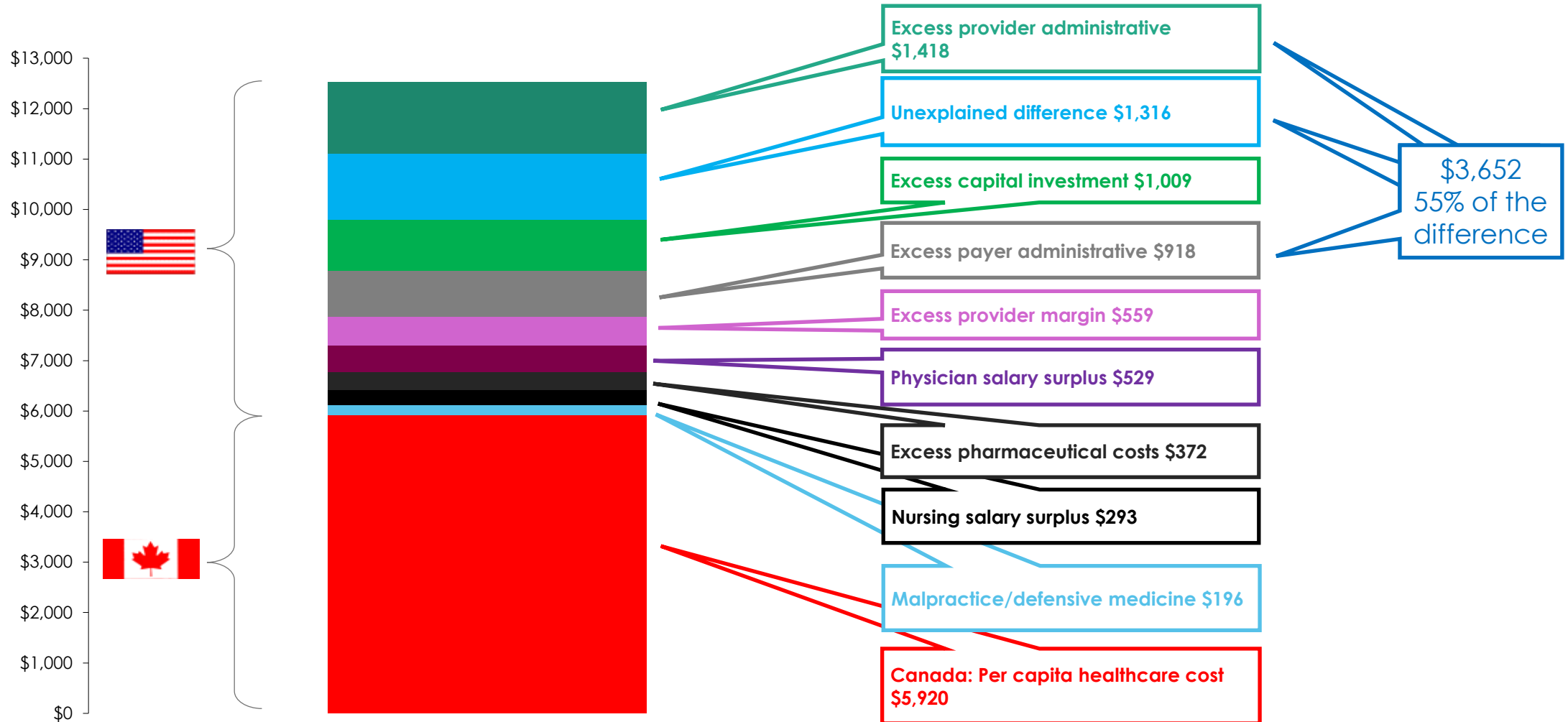


American healthcare is inefficient

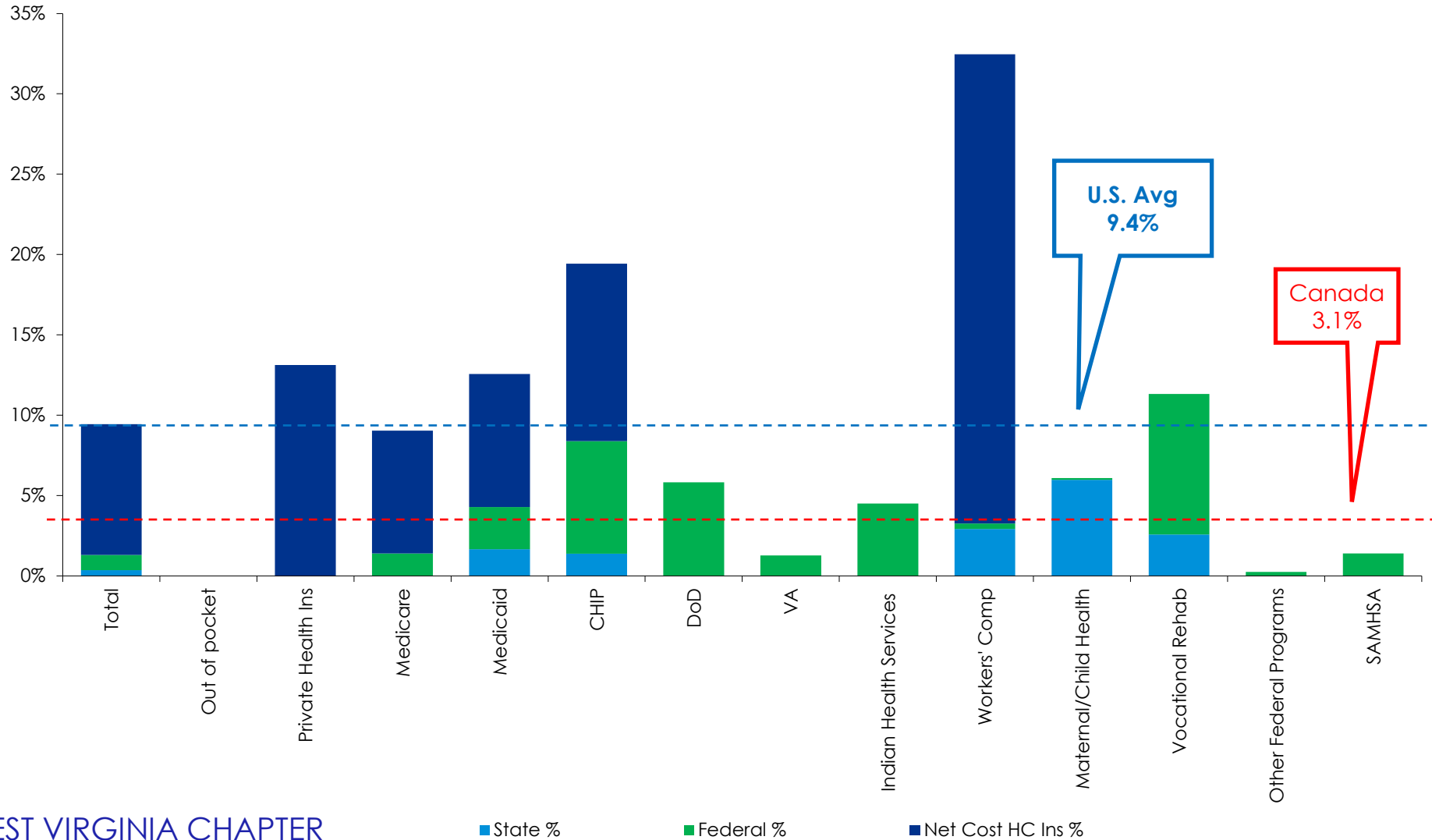


# *Understanding the problem*

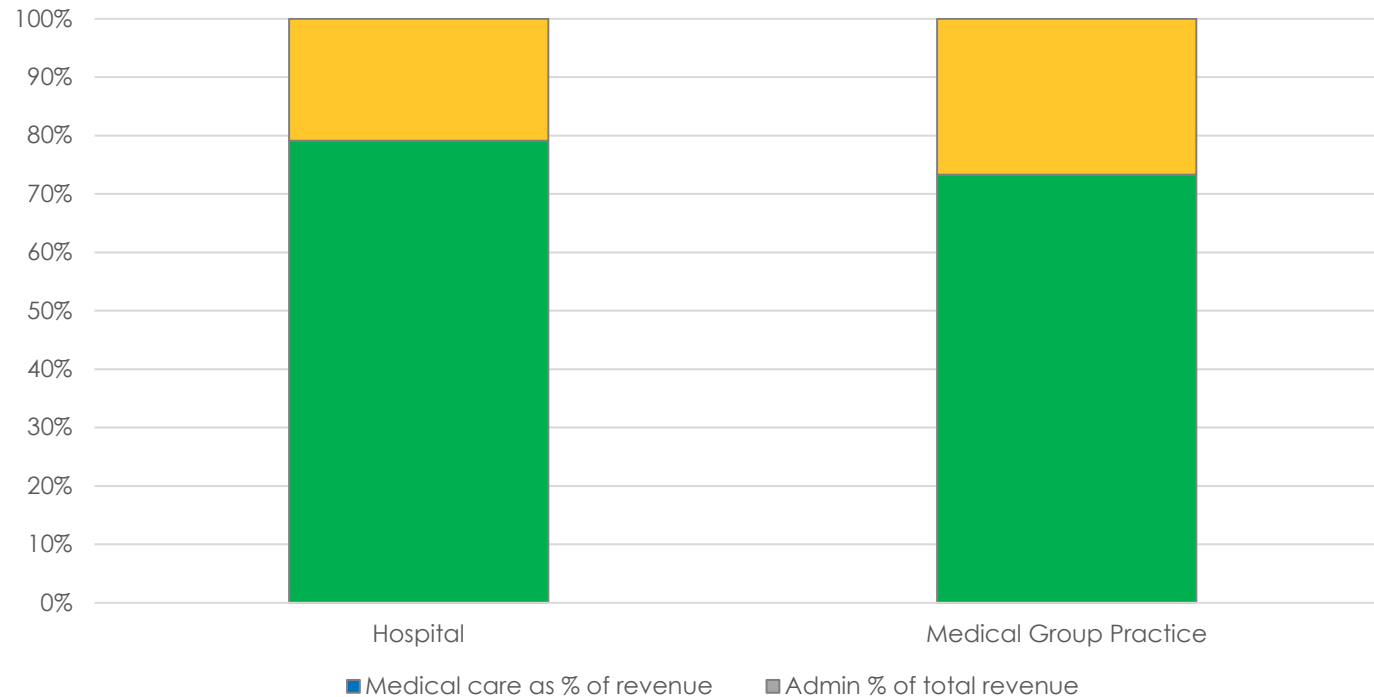
# Costs: U.S. vs. Canada



# Payer-side administrative costs



## Provider-side administrative costs



**In combination, payer administrative costs and provider administrative costs consume between 30% and 33% of every healthcare dollar – in total, nearly a TRILLION dollars each year.**

Source: Kahn, J.G., et al. (2005). The Cost of Health Insurance Administration in California: Estimates for Insurers, Physicians, and Hospitals. *Health Affairs*, 24(6), 1629-1639.

\*Billing and insurance-related figures represent a portion of total administrative spending.

\*\*10.8% is the high estimate of the range; figure could be as low as 6.6%.

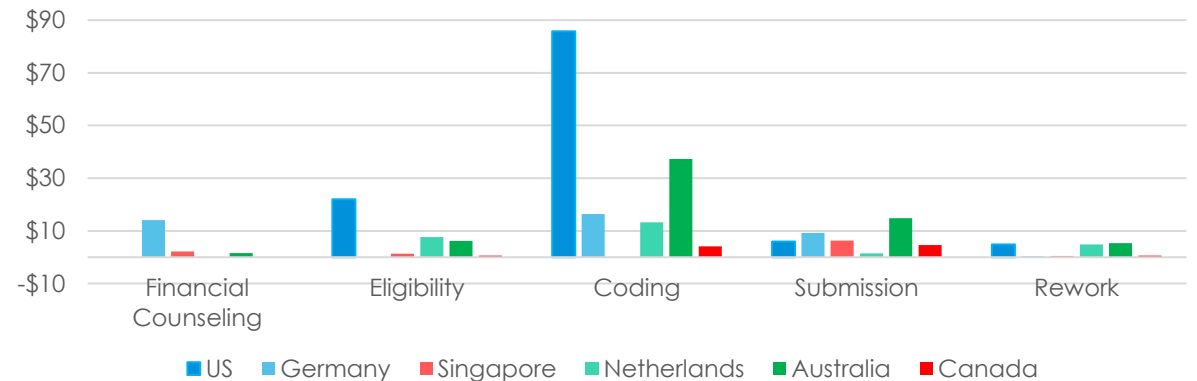
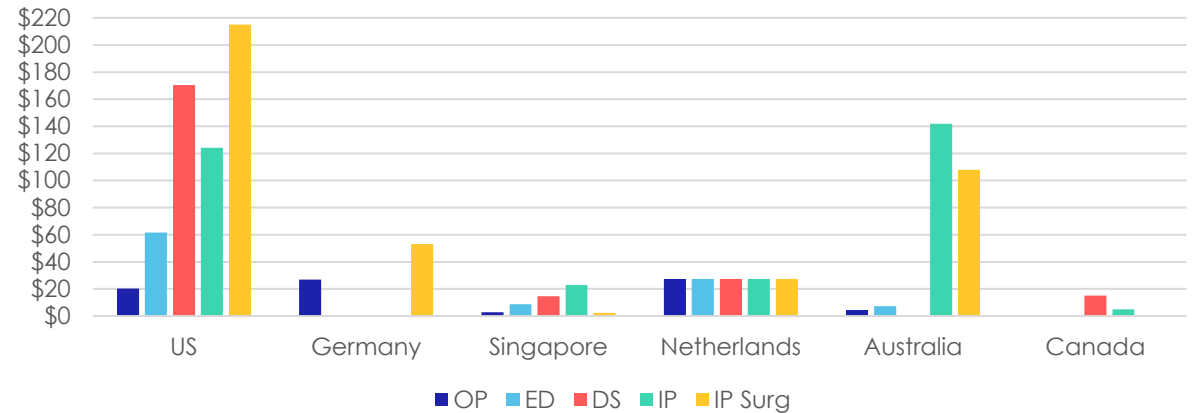
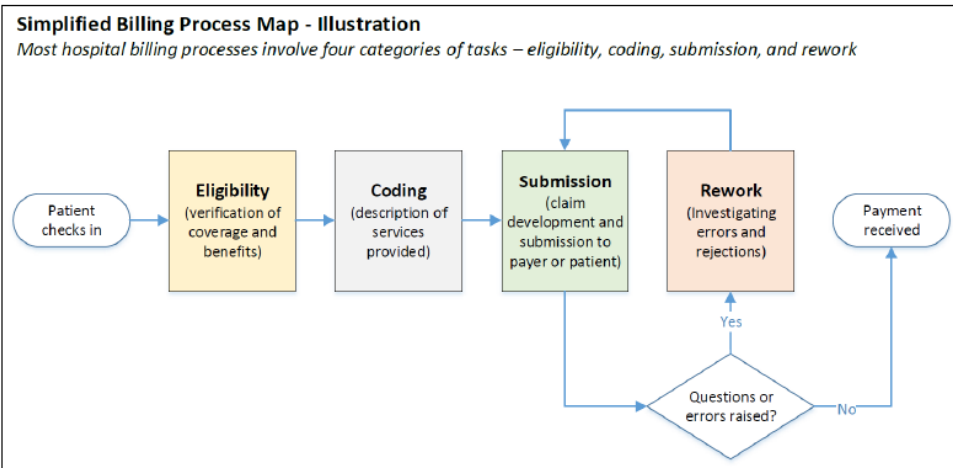
# Billing and Insurance-Related Micro-costing

“... BIR costs represented 14.5 percent of the total professional revenue for primary care visits”  
 “... BIR costs in the United States are primarily driven by the high cost of coding ...”

## CONSIDERING HEALTH SPENDING

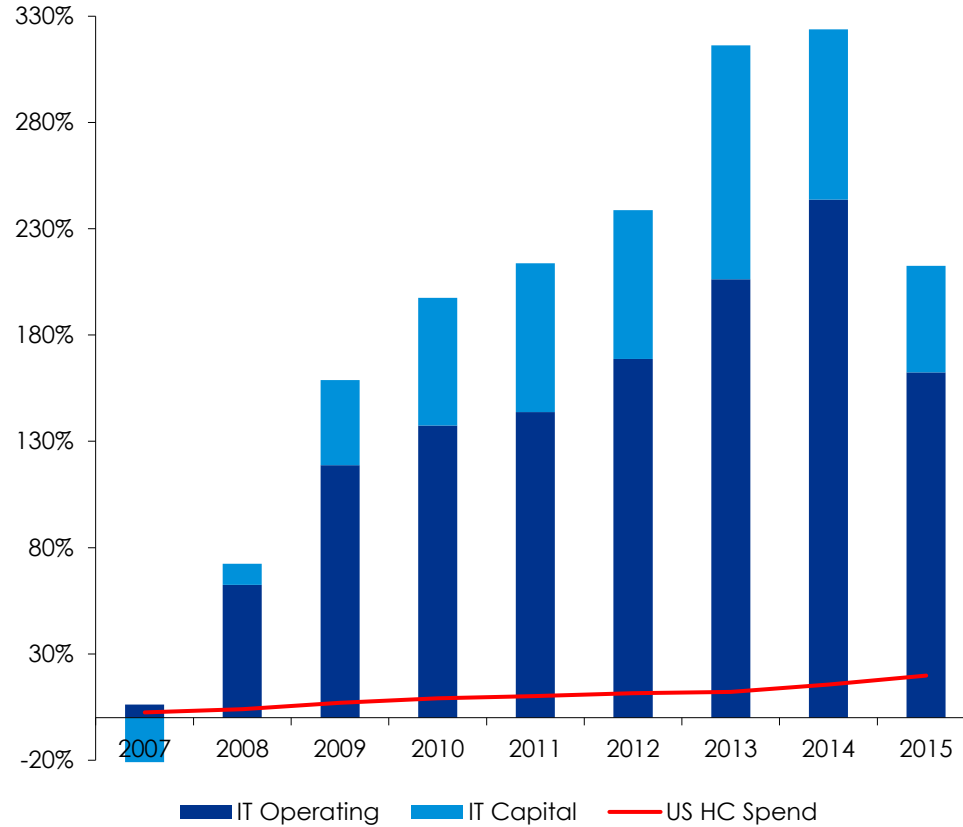
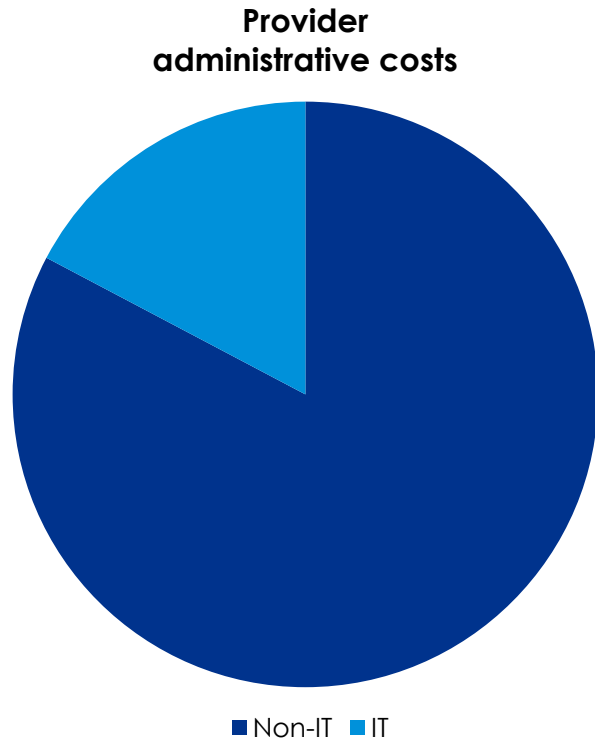
By Barak D. Richman, Robert S. Kaplan, Japees Kohli, Dennis Purcell, Mahek Shah, Igna Bonfrer, Brian Golden, Rosemary Hannam, Will Mitchell, Daniel Cehic, Garry Crispin, and Kevin A. Schulman

# Billing And Insurance-Related Administrative Costs: A Cross-National Analysis



# *How IT Can Help Fix this Problem*

# IT: A large – and growing – administrative cost

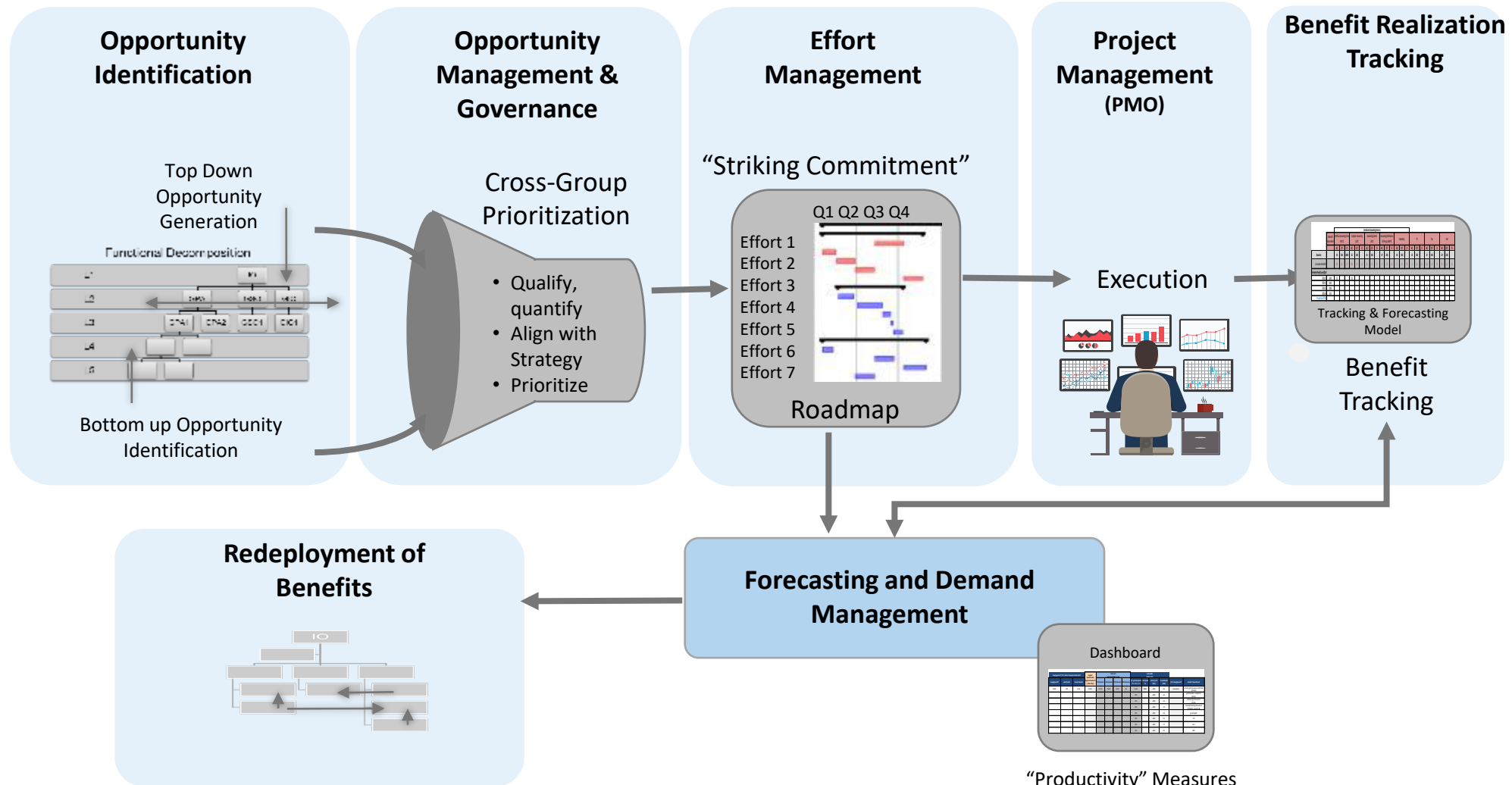




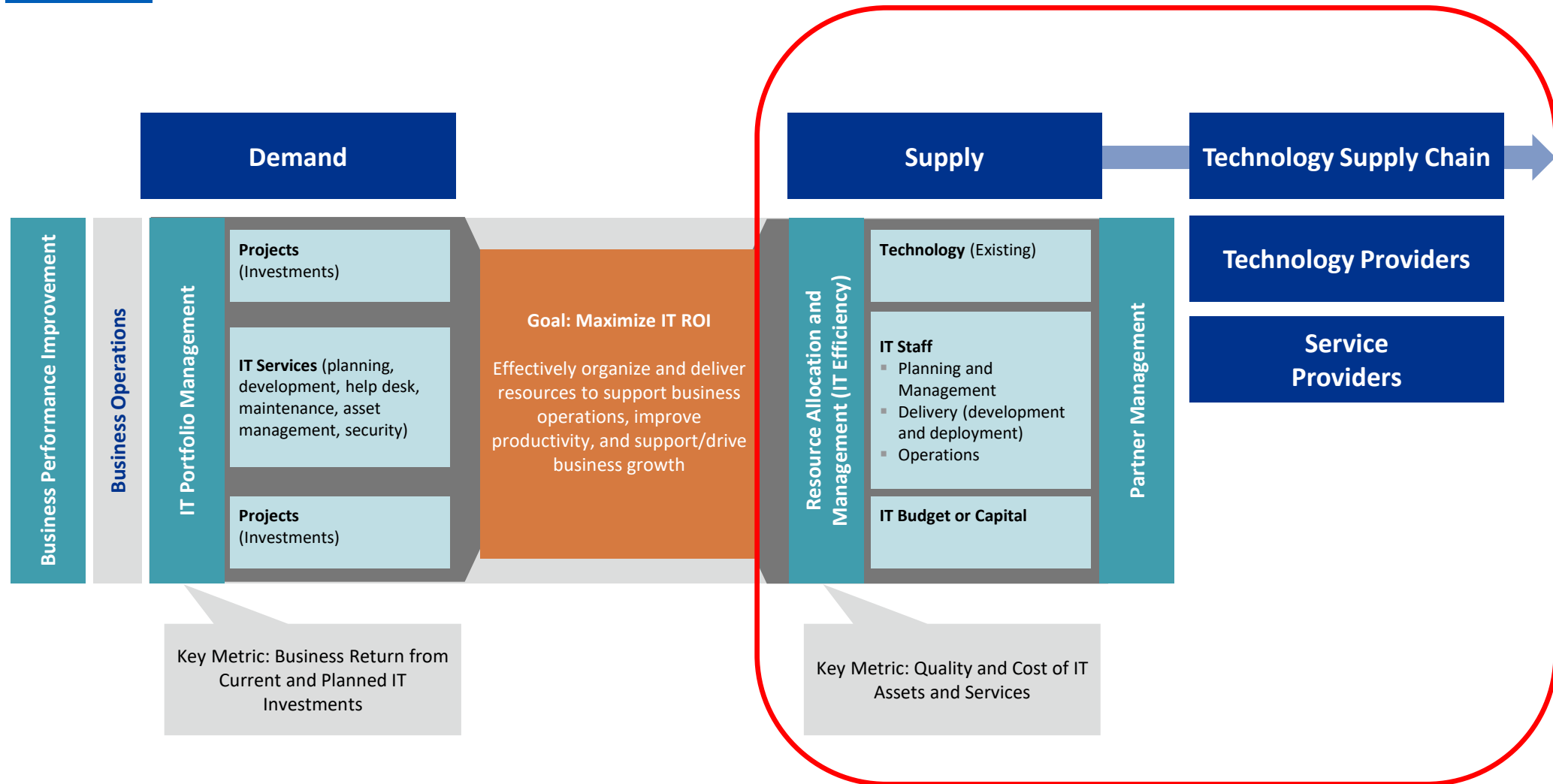
# Reducing IT Costs

- 1** Demand Management
- 2** Resource Management
- 3** IT Service Management
- 4** Application Rationalization
- 5** Cloud Transformation
- 6** Technology Business Management

# 1 IT Demand Management Process

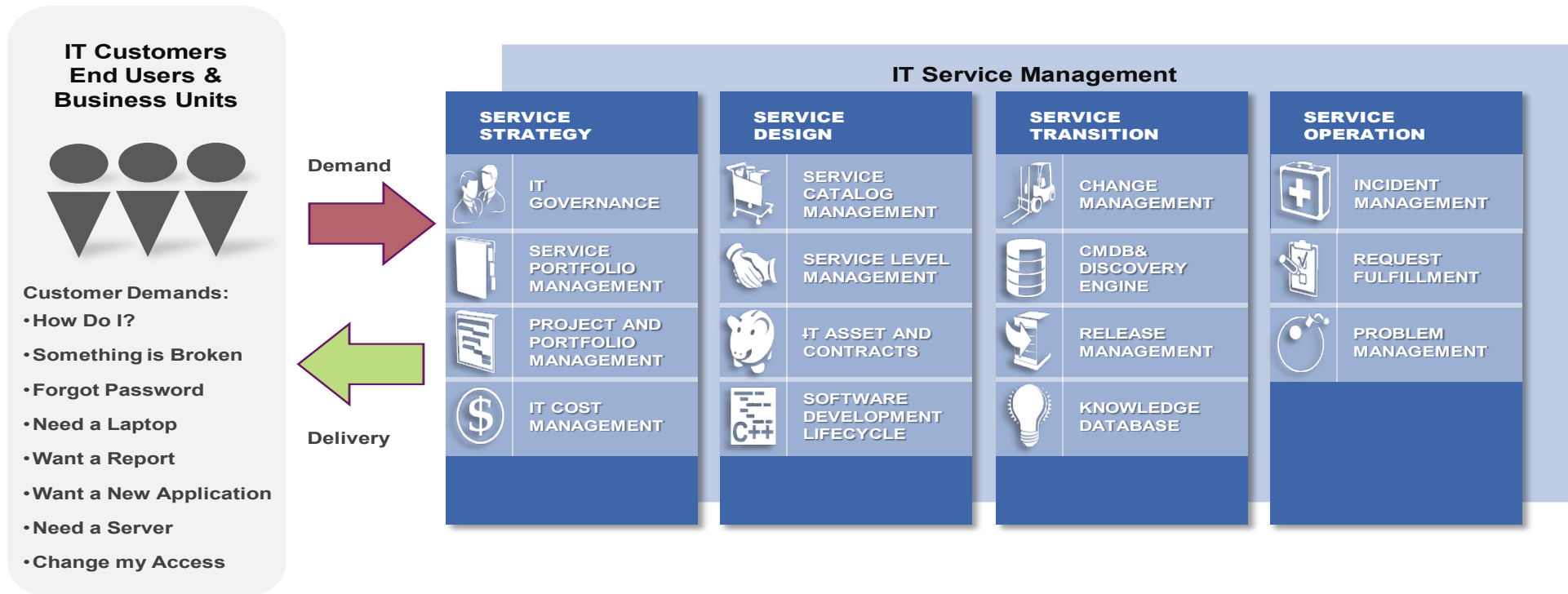


## 2 IT Resource Management Process



# 3 IT Service Management

IT service management under performance results in degraded clinical and operational productivity, and diverts other IT resources (infrastructure, applications, security, etc.) to incident and request management – reducing available resources in these areas.



# 4

## Application (etc.) Rationalization

### Reduce redundancies and complexities

Identify applications that perform similar or identical functions for different parts of the enterprise and retire them. This can also lead to standardized and streamlined processes.

### Enhanced Organization-IT alignment

Evaluate each application's contribution to the enterprise's strategic objectives can help to ensure that IT investments are driving the business.

### Better governance over future application investments

An application portfolio governance framework provides criteria for making decisions about investing in new or updated applications to ensure that the organization realizes actual benefits.

### Increased operational efficiency

Each application in use requires some amount of support from internal or external staff. Support requirements – and the associated costs – can be reduced by rationalizing the application portfolio.

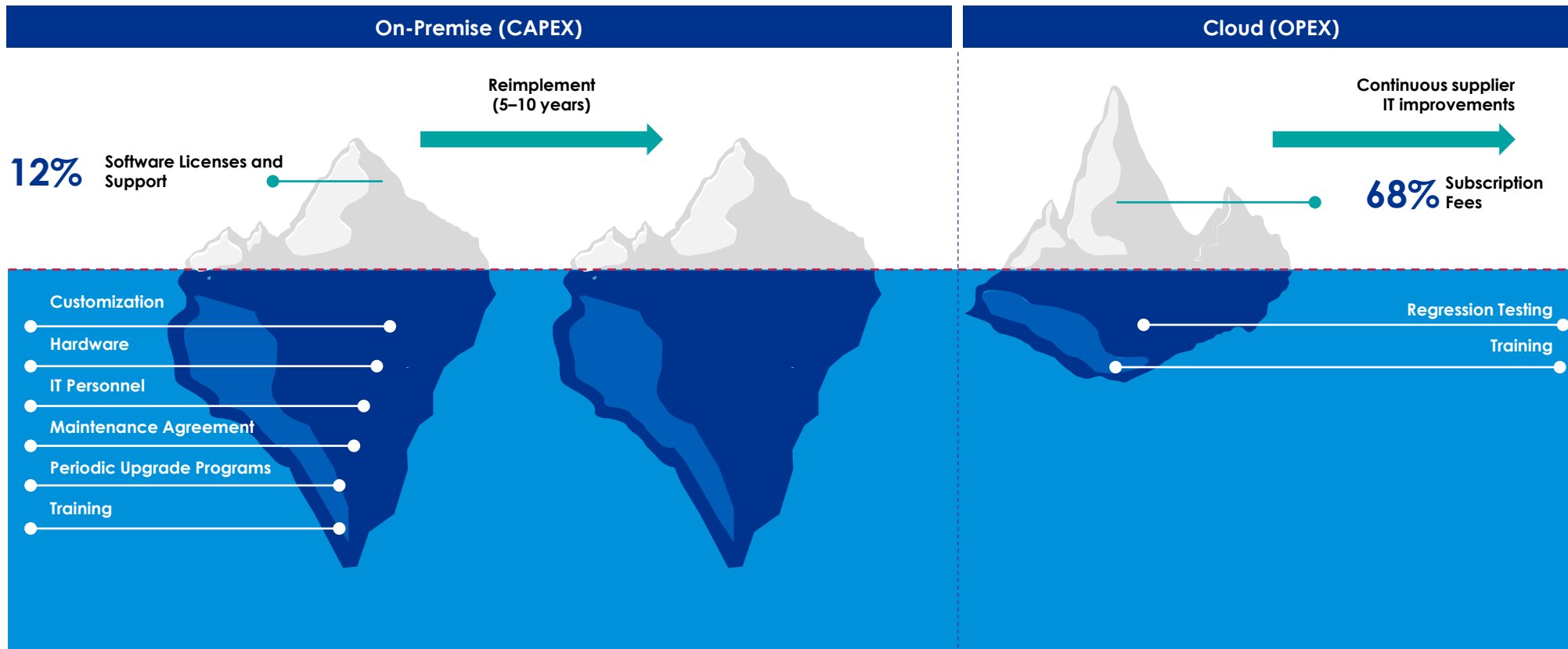
### Improved alignment with current technology standards

Application portfolios that align to a single set of technical standards are cost efficient, more reliable, and improves an organization's ability to develop sophisticated staff skills.

*"CIOs are finding an average of 20% immediate cost savings (within 12 months of implementation) along with improved IT value positioning."*  
-Gartner

# 5 Cloud Transformation

SaaS-based technology means there is a potential 30% reduction in IT cost of ownership.



# 6

# Technology Business Management

## TBM Capabilities



### Forecasting and Planning

Capacity planning, demand forecasts, resource planning



### Business Alignment

Processes and tools to capture business requirements



### Investment Criteria

Methodologies & tools to evaluate IT investment based on benefit



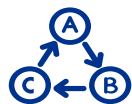
### KPIs

IT-specific financial and operational metrics and indicators



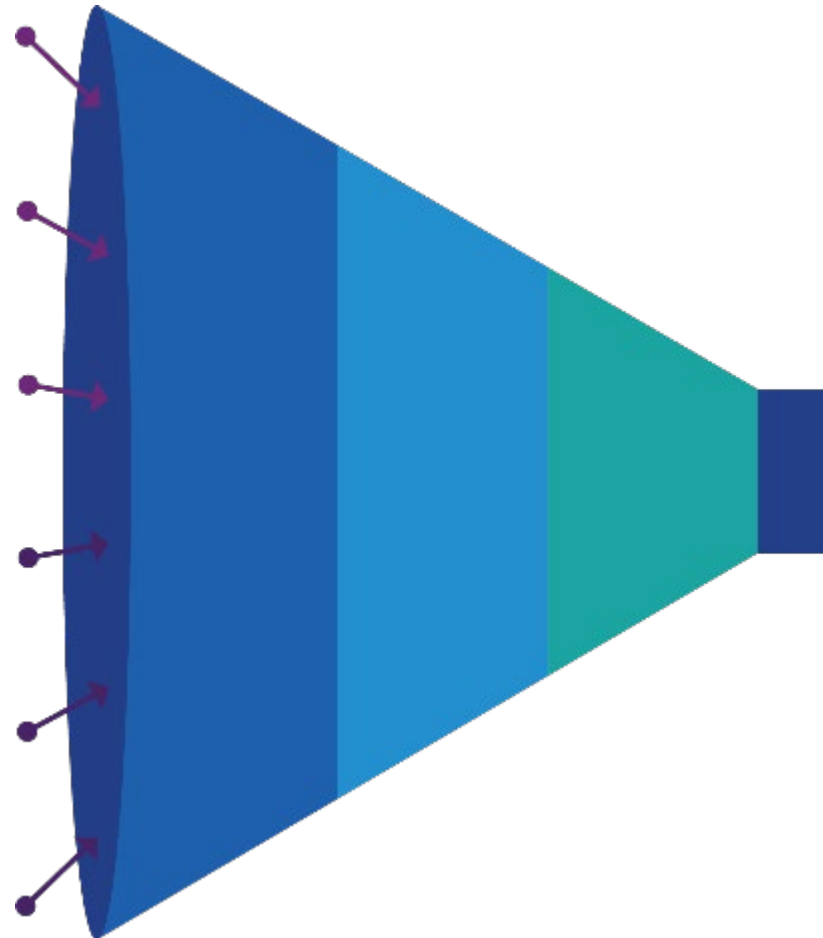
### Budgeting

Multi-year financial plans and continuous monitoring



### Project Evaluation

Processes to assess IT project success and IT's performance



## TBM Benefits



### Lower IT Costs

Reduced overhead burden on clinical areas



### Impact

Low value work replaced with high value work



### Business Linkage

Increased responsiveness to clinical and business needs



### ROI

IT is able to demonstrate financial returns from its contributions



### Scalability

IT costs better aligned to patient volumes



### Budgeting Accuracy

More reliable IT project and operating estimates



*“... the right combination of technology and institutional culture can lead to important gains in quality and value.”*

*-John Halamka, MD*





# As an industry, how are we doing today?



“Productivity growth in the United States has averaged 2.5 percent annually since the mid-1990s. In medical care, over the same period, reported productivity growth is negative:

**official data indicate that we are spending more to get less.”**

FORTUNE

## Death by a Thousand Clicks: Where Electronic Health Records Went Wrong

The U.S. government claimed that turning American medical charts into electronic records would make health care better, safer, and cheaper. Ten years and \$36 billion later, the system is an unholy mess: Inside a digital revolution wrong. A joint investigation by Fortune and Kaiser Health News.

By Erika Fry and Fred Schulte  
March 18, 2019

The pain radiated from the top Annett Monachelli's head, and it got worse when she changed positions. It didn't feel like her usual migraine. The 47-year-old Vermont attorney turned innkeeper visited her local doctor at the Stowe Family Practice twice about the problem in late November 2012, but got little relief.

Two months later, Monachelli was dead of a brain aneurysm, a condition that, despite the symptoms and the appointments, had never been tested for or diagnosed until she turned up in the emergency room days before her death.

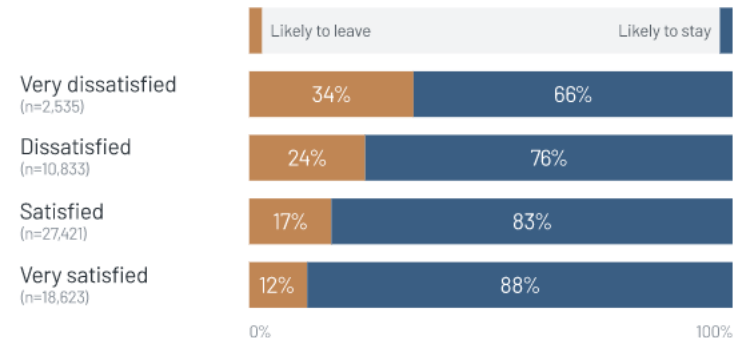


“A second question is **why is it that the health sector has failed to gain the productivity improvements found in other industries.** There are undoubtedly opportunities to streamline the work of clinicians and to use technology to lift the burden of administrative and low value tasks. However, doing this in a way that liberates productive time is difficult ...



## EHR dissatisfaction linked to increased clinician

Likelihood of Leaving Organization—  
by Overall EHR Satisfaction†



# Nuffield trust white paper

- 1** Decision support and standardized workflows
- 2** Patient engagement and self-management
- 3** Better coordinated care
- 4** More proactive and targeted care
- 5** Improved access to specialist expertise
- 6** Improved resource management
- 7** Continuous cycles of learning and improvement



# 1

## *Standardized workflows and economies of scale*

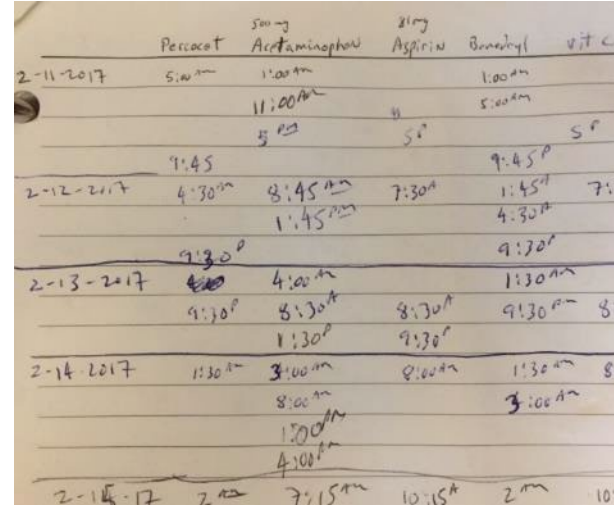
“Through **economies of scale, administrative innovations,** and the embrace of new technology, NH can offer surgeries at a **small fraction** of their cost in the U.S. and less than half the cost at other Indian hospitals.”



“Technology is also leveraged to reduce labor costs. Software called **iKare**, installed on an iPad connected to each ICU bed, automatically updates patient records as they are generated. iKare’s **decision-support system** informs the nurse on duty of any problems and instructs staff on the **next action** in the sequence of care.”

# 2

## Patient Engagement and self-management



Date: March 14

ic	Pos	Focus	Exercise	Equip	Reps	Hold (sec)	Per day	Times	7/8	10	11	2/3	5
hair	Seated	L Wrist	Squeeze	Soft Ball	10 to 20	5 to 10	5	1:10am					1:20
hair	Seated	L Wrist	Squeeze	Hard Ball	10 to 20	5 to 10	5	1:10am					1:20
hair	Seated	L Wrist	Deviation, radial flex		5	20	5	2:0					5:4
hair	Seated	L Wrist	Flexion, extension flex		5	20	5	2:0					5:4
hair	Seated	R Wrist	Flexion, extension	Band	20	slow	4	2:0					2
hair	Seated	R Wrist	Deviation, radial	Band	20	slow	4	2:0					2
hair	Seated	L Wrist	Deviation, radial	Band	20	slow	4	2:0					2
hair	Seated	R Wrist	Flexion, extension	Band	20	slow	4	2:0					2
hair	Seated	R Arm	Bicep curl	Band	10	slow	4	2:0					2
hair	Seated	L Arm	Bicep curl	Band	10	slow	4	2:0					2
hair	Seated	L Arm	Tricep Extension	Band	10	slow	4	2:0					2
hair	Seated	Both Arms	Overhead stretch		5	slow	4	10					2
hair	Seated	ROM	Steel slide, seated		10	20+	3	1:10am					10
hair	Seated	Quad	Knee extension		10	5 to 10	2	1:10am					10
hair	Seated	Hamstring	Hamstring stretch		5	30	3	5:30					5
ed	Seated	L Wrist	Pronation, supination	Hammer	20	slow	3	2:0					20, 10
ed	Supine	Ankle/shin	Ankle Pumps		20	slow	3	2:0					25, 2
ed	Supine	shin	supine		20	slow	3	2:0					25, 2

Orthopaedics

Visits: No visits available at this time.

Vitals: 137/87, 119", 150.0 lbs, 7.45 kg/m<sup>2</sup>, 84/min

Social History: Tobacco (Never smoker), Drinks Alcohol (Current some day), Negative for Illicit Drug, Drinks Caffeine, Exercises daily, Married.

CALL 800-292-2680

OUR PRODUCTS | CLAIMS | BLOG | FIND AN AGENT | MEMBER BENE

VIEW CLAIMS

Claim Number: PA-1000... | Policy Number: 1-04...

Policyholder: [Redacted] | Claim Status: Open

Date of Loss: 1/17/2017 | Deductible Status: Pending

Loss Description: [Redacted] (insured) was walking across the street and was hit by another vehicle. He was taken to hospital and has a fractured tibia and radius.

Claim Summary | Claim Payments | Claim Team | Claim Activities

Payments were not found for this claim.

Holland Hospital

PATIENT PORTAL

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Health Record | Documents

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Allergies

Products

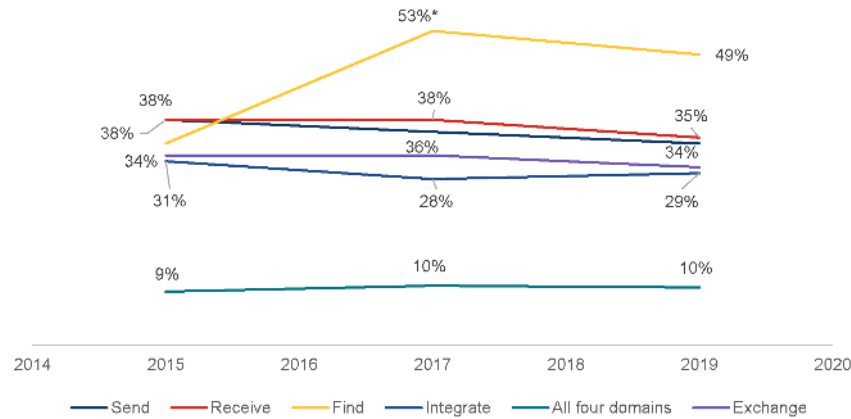
Latest Results

matology/Differential

IC: 10<sup>3</sup>/uL, 07, 2015

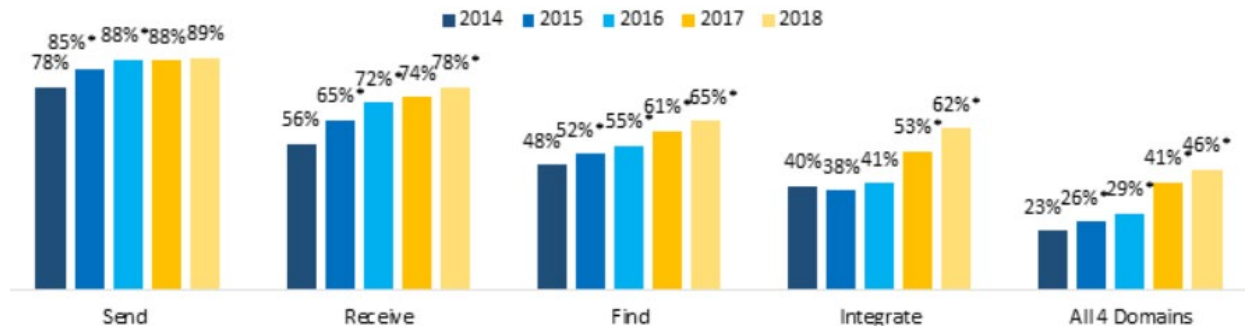
# 3 Better coordinated care

## Physicians engaging in HIE activities



Source: National Electronic Health Record Survey, 2015-2019

## Non-federal acute care hospital usage of HIE



Source: 2014-2018 AHA Annual Survey Information Technology Supplement

**Vitals**  
 137/87 BP  
 119/87 HR  
 150.0 lbs Weight  
 7.45 kg/m<sup>2</sup> BMI  
 84/min Heart Rate

**Social History**  
 Tobacco: Never smoker  
 Drinks Alcohol: Current, some days  
 Negative for Illicit Drugs  
 Drinks Caffeine  
 Exercises daily  
 Married  
 consultant

**Allergies**  
 NO KNOWN DRUG ALLERGIES  
 Active

**Care Plan**  
 No recorded Care Plan

**Care Team**

**Tests and Results**  
 No recorded Tests and Results

**Procedures**  
 08/28/2017

### Results

No data available for this section

### Immunizations

Given and Recorded

Vaccine	Date	Status
influenza virus vaccine, inactivated	1/25/17	Given

### Procedures

Procedure	Date	Related Diagnosis
Arthroscopy Knee Tibial Plateau Fracture Repair (Left) <sup>1</sup>	1/24/17	

**Primary Care Provider**  
 PCP: [Name], MD  
 Phone: 616-494-6800  
 Fax: 616-494-6901

**Your Future Office Appointments**  
 Aug 29, 2017 8:00 AM EDT  
 (Arrive by 7:45 AM)  
 Office Visit with [Name], MD  
 SHMG Internal Medicine (Spectrum Health Medical Group)  
 588 E Lakewood Blvd Ste 200  
 Holland MI 49424-2023  
 616-494-6800

**Procedures We Performed Today**  
 No orders found for display

**Reason For Your Visit**

Reason For Your Visit	Codes	Comments
Neuritis of foot, left - Primary	ICD-10-CM: G57.92 ICD-9-CM: 355.8	
Acquired equinus deformity of both feet	ICD-10-CM: M21.6X1, M21.6X2 ICD-9-CM: 736.72	
Pain in left foot	ICD-10-CM: M79.672 ICD-9-CM: 729.5	

**Your Medicine List**  
 This list is accurate as of: 12/9/16 11:59 PM. Always use your most recent med list.



# 4 More proactive and targeted care

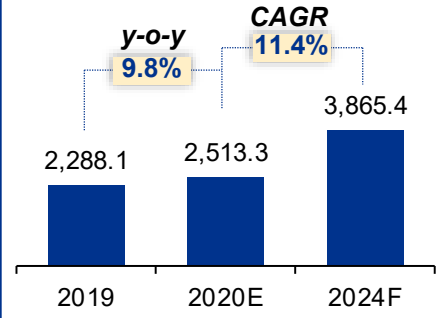
## Predictive Analytics

LINE	Full Name	Age	Gender	Race	Principal DRG	Description	Readmit Prevention Activity 1	Readmit Prevention Score
14	Anders, Andrea Cheryl	48	F	W	562.1	PARALYTIC SEIZ	Pre Discharge QPC Consult	Y
	Chiswick, Armand Abdiel	5	M	B	545.90	EPILEPSY NOS W/ET INTRACT	Pre Discharge QPC Consult	Y
	Bliss, Marlet Joy	38	F	B	383.42	HB S DISEASE WITH CHRIS	Pre Discharge QPC Consult	Y
15	Waters, Mirinda Elaine	69	F	W	415.71	SUBEND INFARCT INTAL	Pre Discharge QPC Consult	Y
	Raymond, Mohd Sultan	44	M	W	562.11	SPHEROCYTES OF COLON	Pre Discharge QPC Consult	Y
	Bliss, Marlene Inesmar	57	F	W	157.89	REHABILITATION PR NEC	Pre Discharge QPC Consult	Y
16	Miller, Melissa Jacqui	3	M	B	131.01	TRNH, WATE LB, W/SP, CD	Pre Discharge QPC Consult	Y
	Chen, Brady Prescott	57	M	U	415.71	SUBEND INFARCT INTAL	Pre Discharge QPC Consult	Y
	Yablons, Zena Cassandra	48	F	B	715.36	LOC ON NOS LOW LE	Pre Discharge QPC Consult	Y
17	Adkins, Tasha Dee	75	F	B	404.91	CEREB ART OCCL W INFARCT	Post Discharge PDP Visit within 7 Days Y	Y
	Brown, Maria Dethard	1	F	W	491.8	CHRONIC BRONCHITIS NEC	Post Discharge PDP Visit within 7 Days Y	Y
	Merrill, Brian Rudy	69	F	W	414.88	COR AD GRAFT TYPE NOS	Post Discharge PDP Visit within 7 Days Y	Y
18	Cassano, Eden David	61	M	W	722.52	LUMB LUMBOSAC DIS GENERAL MEDICINE	Post Discharge PDP Visit within 7 Days Y	Y

“As data piles up, we have ourselves a genuine gold rush. But data isn’t the gold. I repeat, data in its raw form is boring crud. The gold is what’s discovered therein.”  
 — Eric Siegel, *Predictive Analytics: The Power to Predict Who Will Click, Buy, Lie, or Die*

## Advancement in genetic testing

US genetic testing services market, US\$ million, 2019-24F



“By integrating genomics into primary care and research initiatives at scale, and focusing on inclusivity and equity, everyone will have the opportunity to access information that can lead them to more informed care and better health.” – Alicia Zhou, Vice President, Color, Jan 2020

## Increasing usage of personalized and precision technologies

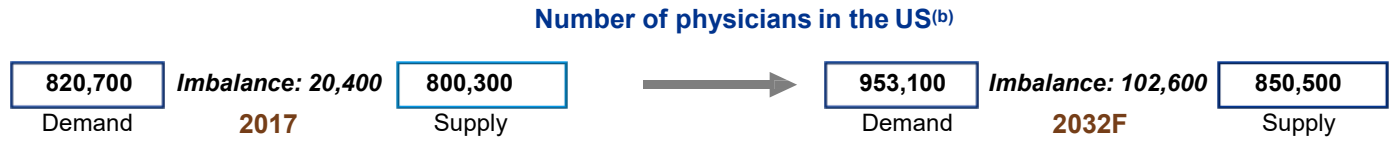


# 5 Improved access to specialists

**Shortage of physicians and healthcare practitioners**



Telehealth is being seen as a viable option to help meet physician shortage (due to higher demand caused by aging baby boomer population)  
— For instance, telehealth allows physicians to consult more remote patients from one central location, thereby providing flexibility and maximizing their utilization



**Emphasis on value based care**

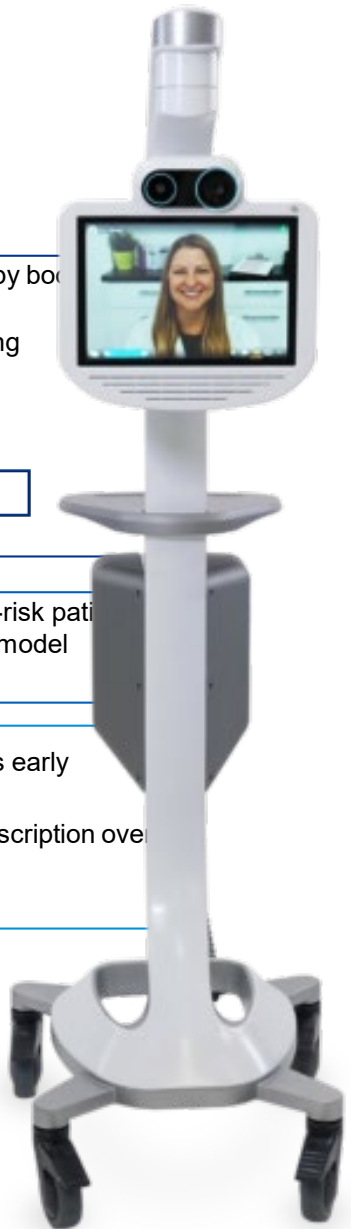


As value-based care models continue to garner attention, healthcare providers are using telehealth to better monitor at-risk patients, increase patient-provider interactions, provide low cost virtual care, etc. — all of which are core success metrics of the model

**Rising patient preference for virtually delivered care**

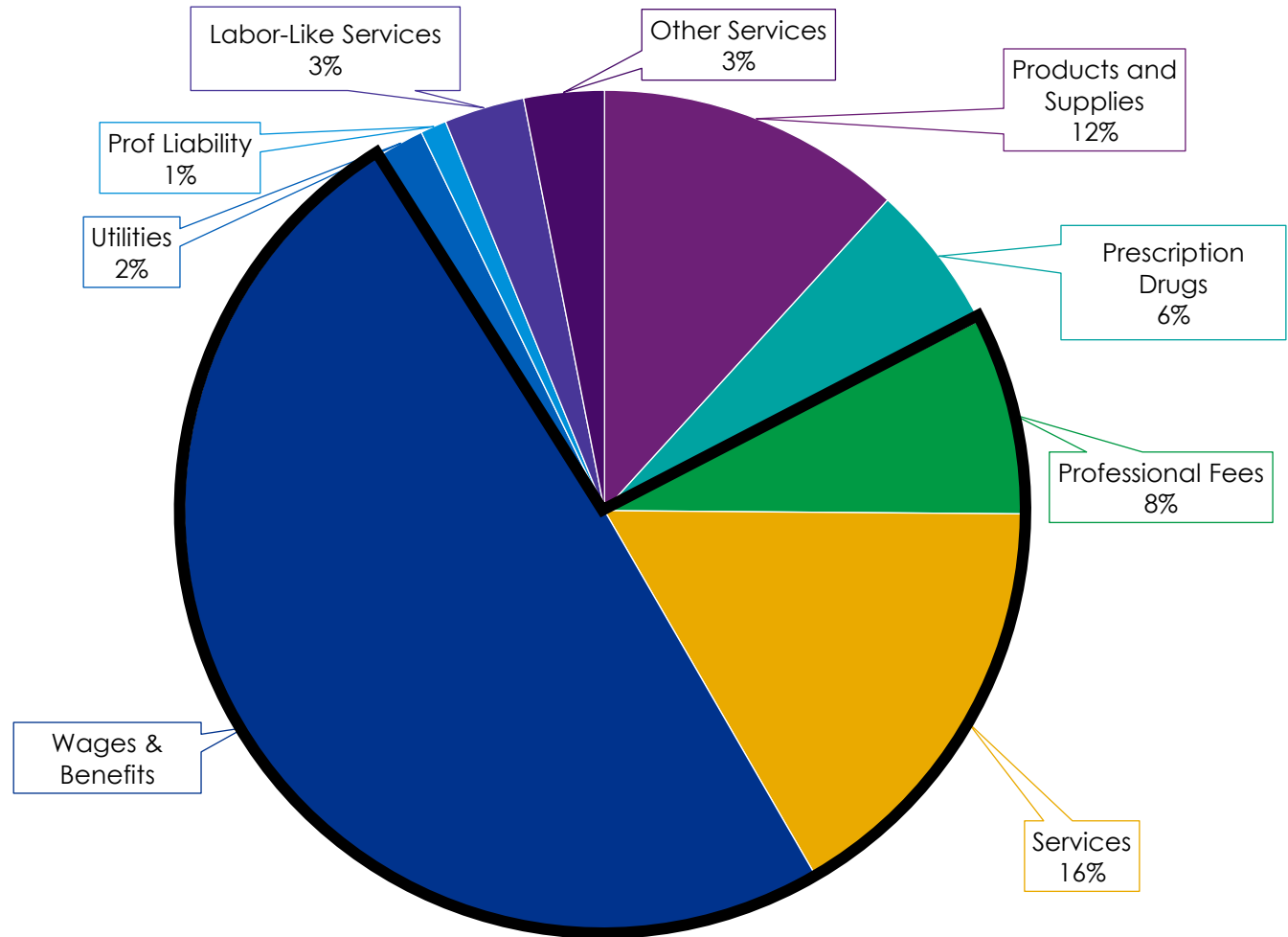
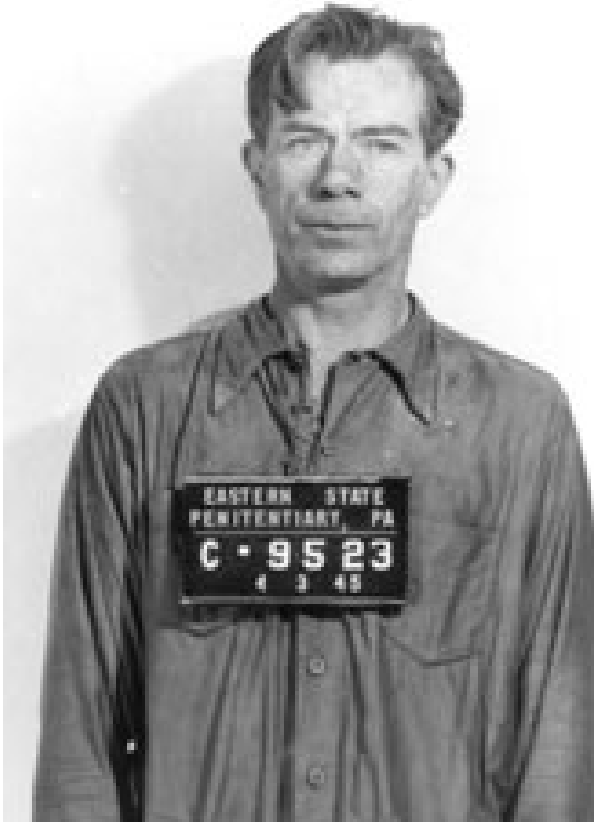


The patients/consumers are also awakening to the benefits of health monitoring enabled by telehealth services such as early diagnosis of diseases, automatic appointment reminders, consultation within comfort of one's home, etc.  
— Further, per NTT Data survey, 70 percent of consumers indicated preference for an online video visit to obtain a prescription over a physical visit to a physician's office



# 6

## Improved resource management





# 7

## Continuous cycles of learning and improvement



**“... I was wondering if it might be possible ...”**



## Summary

Although there is a lot of interest in new models of care, the most significant improvements in productivity over the next few years are likely to come from the combined impact of large numbers of small changes.”



# Thank you

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