

VALUE IN CANCER CARE: FINDING THE PATH TO PROGRESS

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Employment (spouse)

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SamFund

Board of Directors

Family Reach Foundation

Research funding

NIH

AstraZeneca

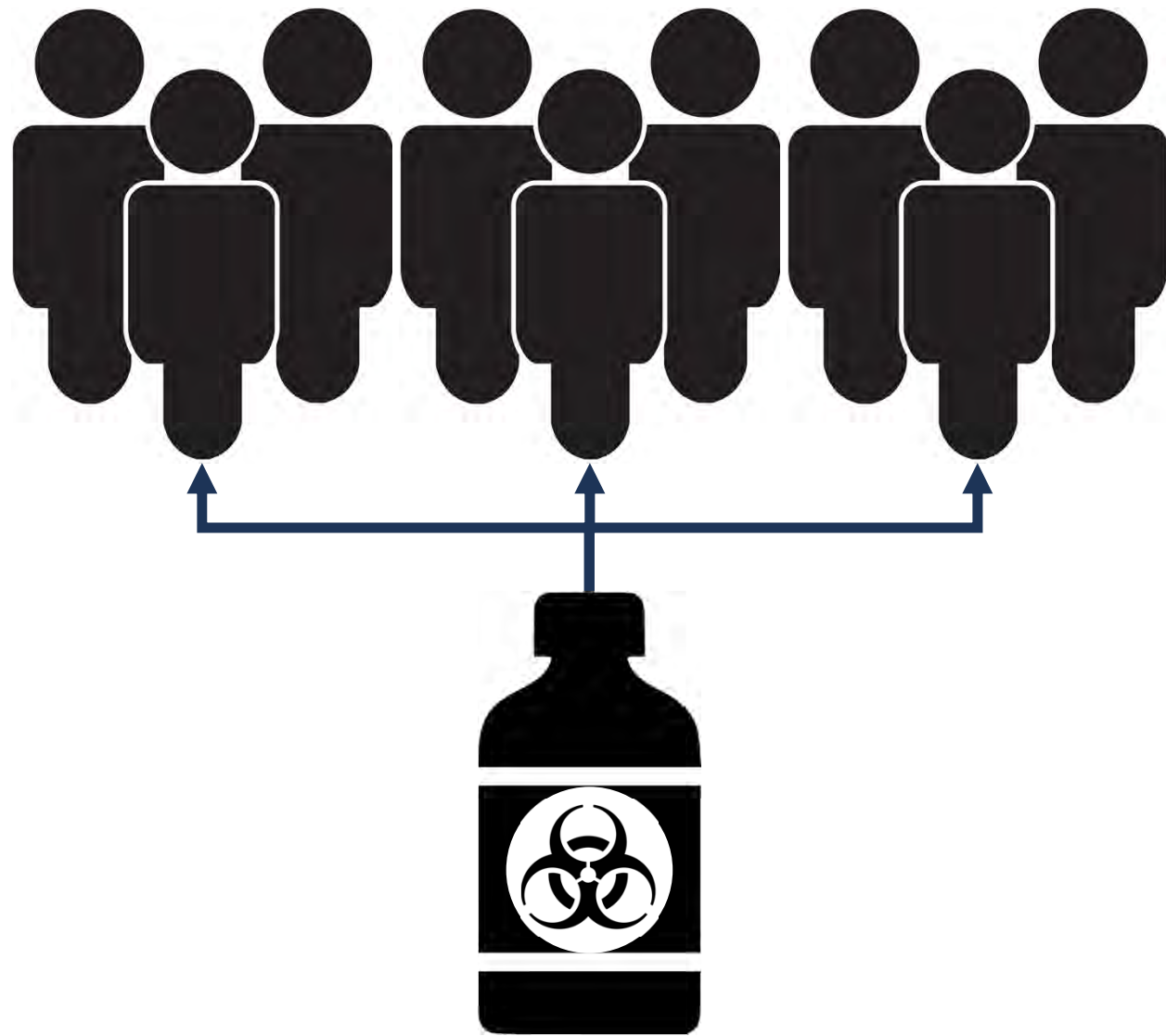
Board Member

Copernicus-WCG IRB

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McKesson





The Washington Post
Democracy Dies in Darkness

FDA approves 'precision medicine' drug for different cancers with same mutation

Harvard

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The New York Times

THE WALL STREET JOURNAL.

U.S. Edition

IDEAS | THE SATURDAY ESSAY

The Smart-Medicine

Newsweek

DECEMBER

HEALTH



Why we need precision medicine — and now

ATTACKING ORIGINATING GENES

GENOMIC FINDINGS DETECTED**KRAS** wildtype (codons 12 & 13)**KRAS/NRAS**

wildtype (codons 12, 13, 59, 61, 117, & 146 in exons 2, 3, & 4)

FDA-APPROVED THERAPEUTIC OPTIONS

Erbix® (Cetuximab)

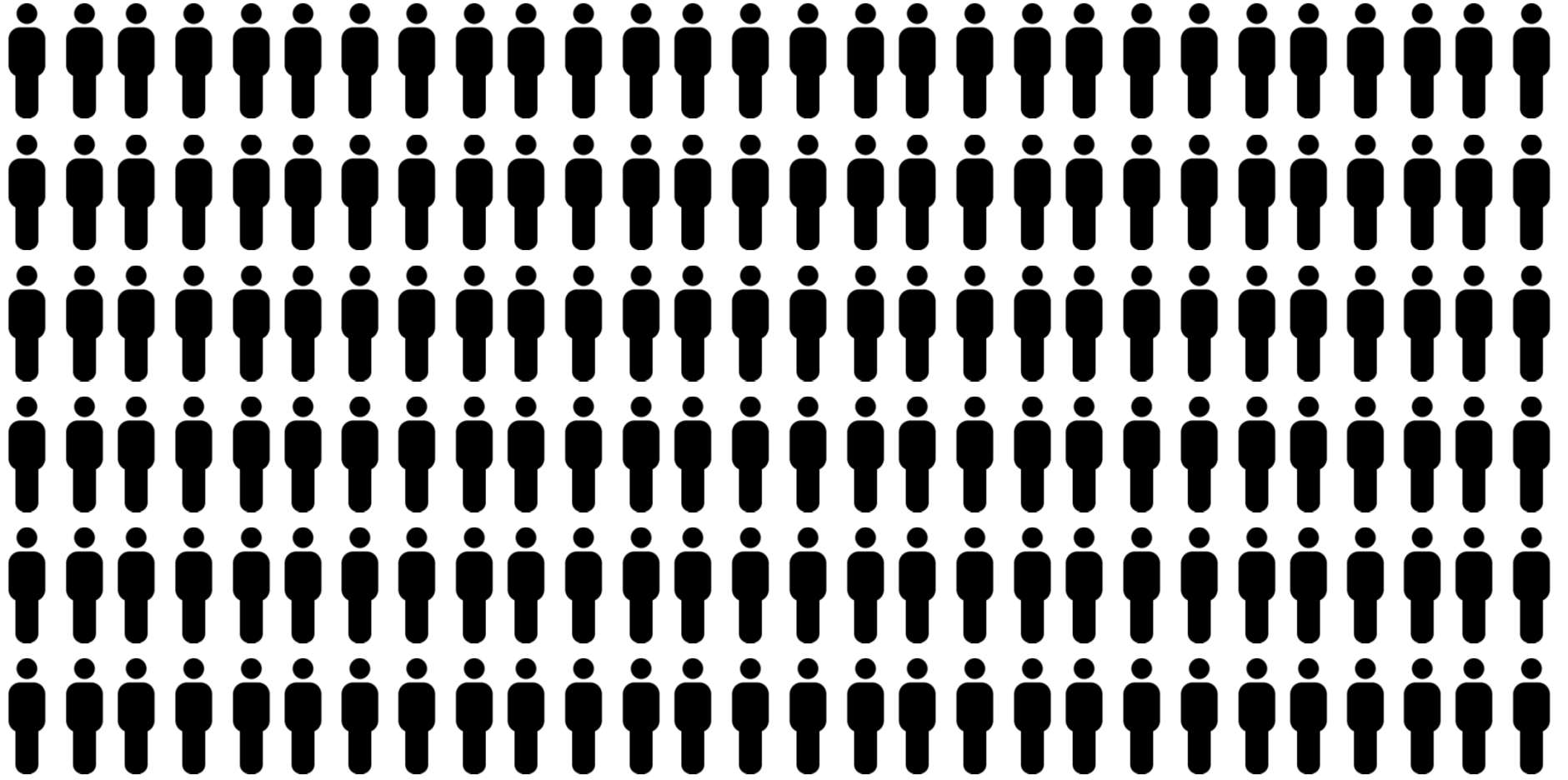
Vectibix® (Panitumumab)

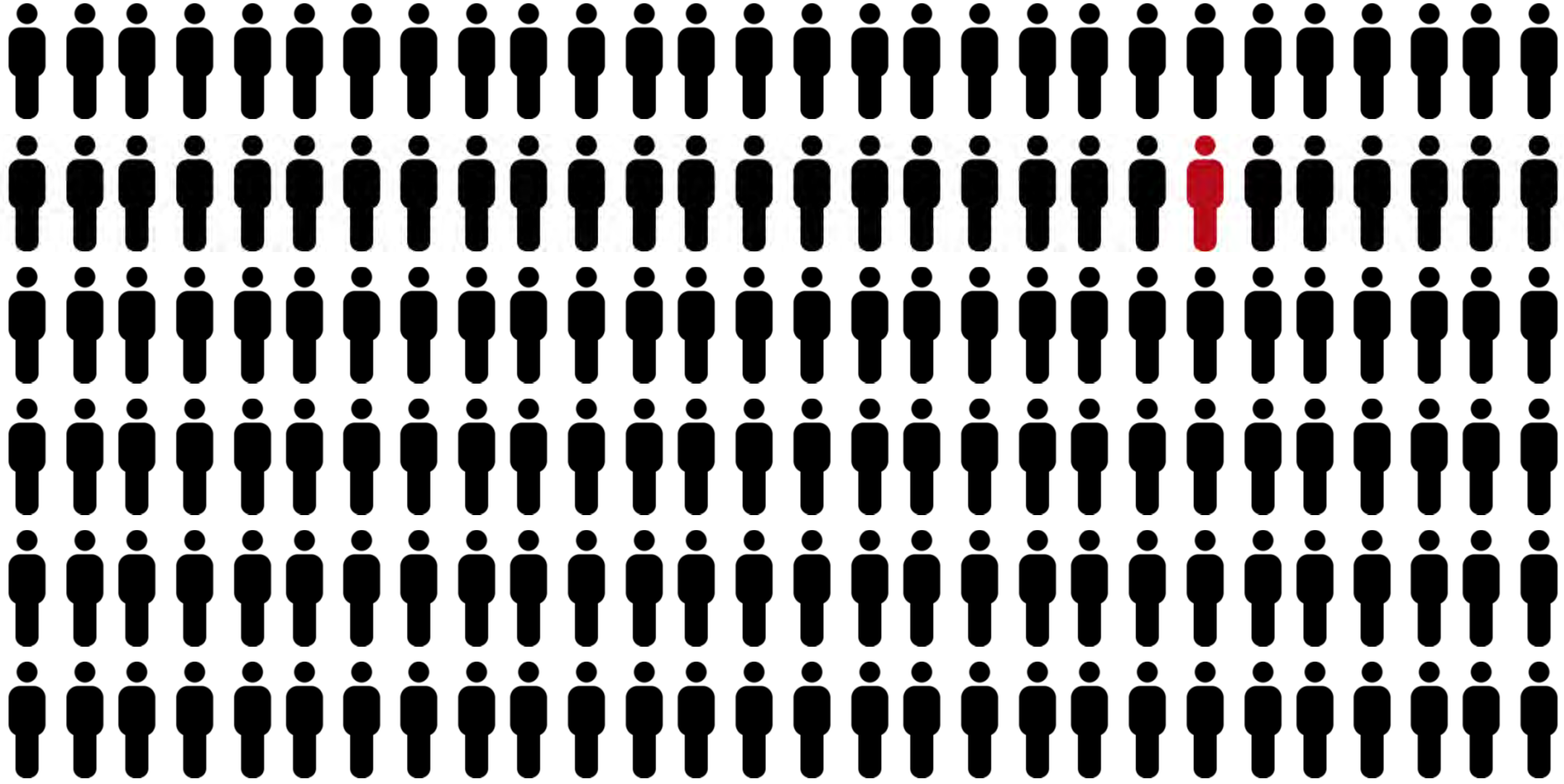
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OTHER ALTERATIONS & BIOMARKERS IDENTIFIED

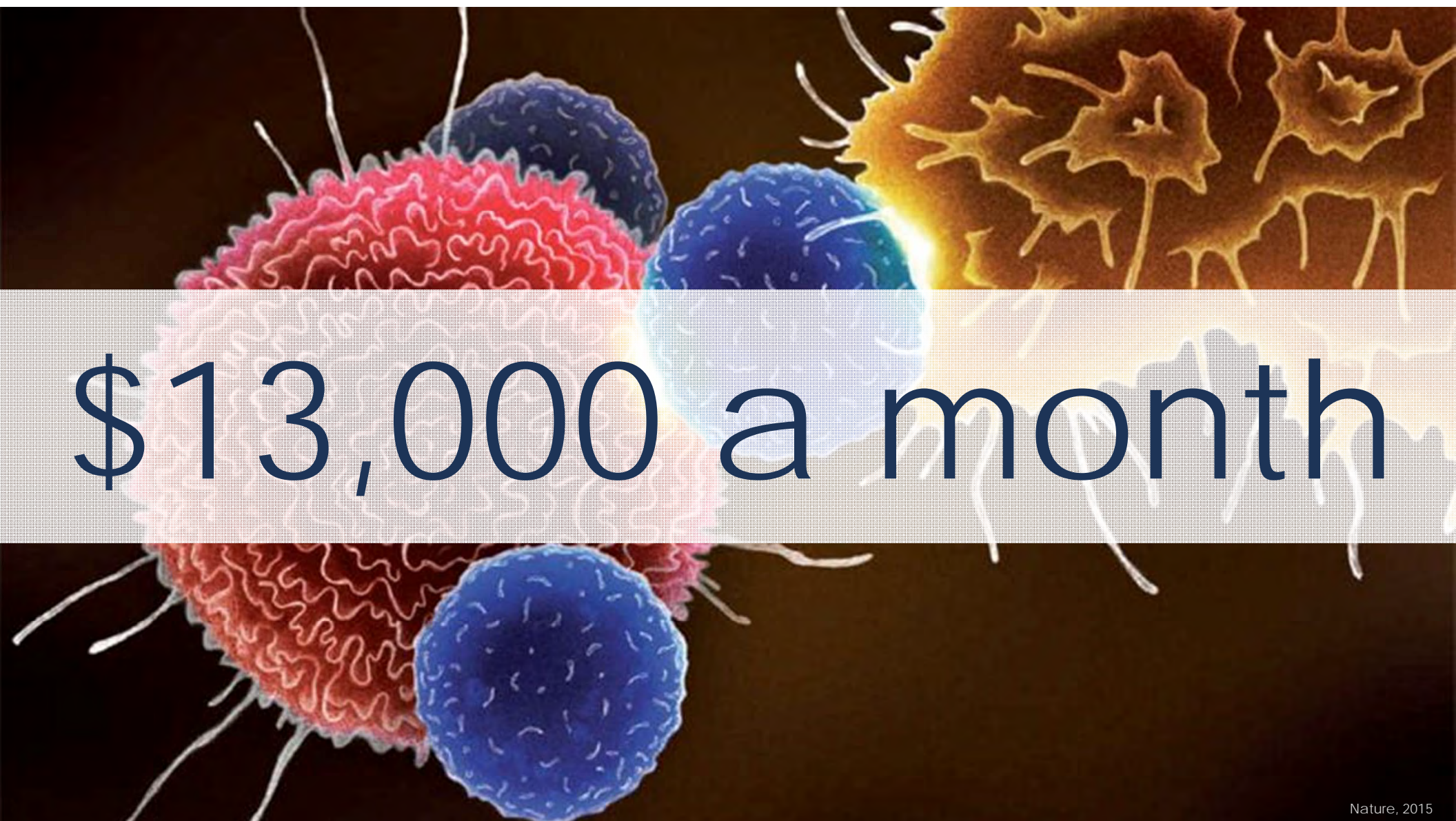
Results reported in this section are not prescriptive or conclusive for labeled use of any specific therapeutic product. See *professional services* section for additional information.

Microsatellite status MSI-High §**Tumor Mutational Burden** 21 Muts/Mb §**EP300** Q2298***ESR1** R256Q**FBXW7** R465H**HNF1A** R168C**MSH2** Y656***PIK3C2B** R1357Q**RBM10** V333I**RBM10** splice site 828+1G>A**TP53** R282W





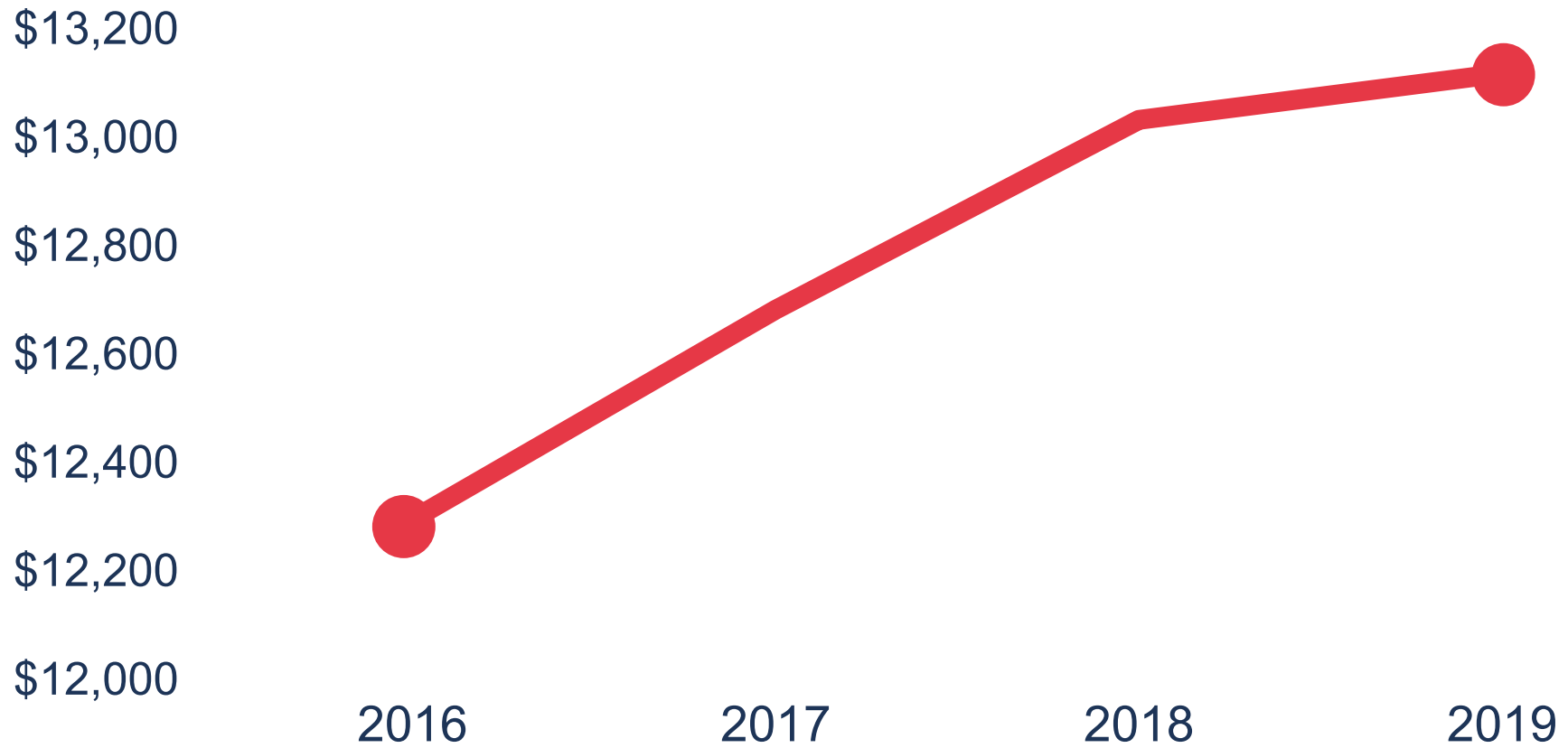


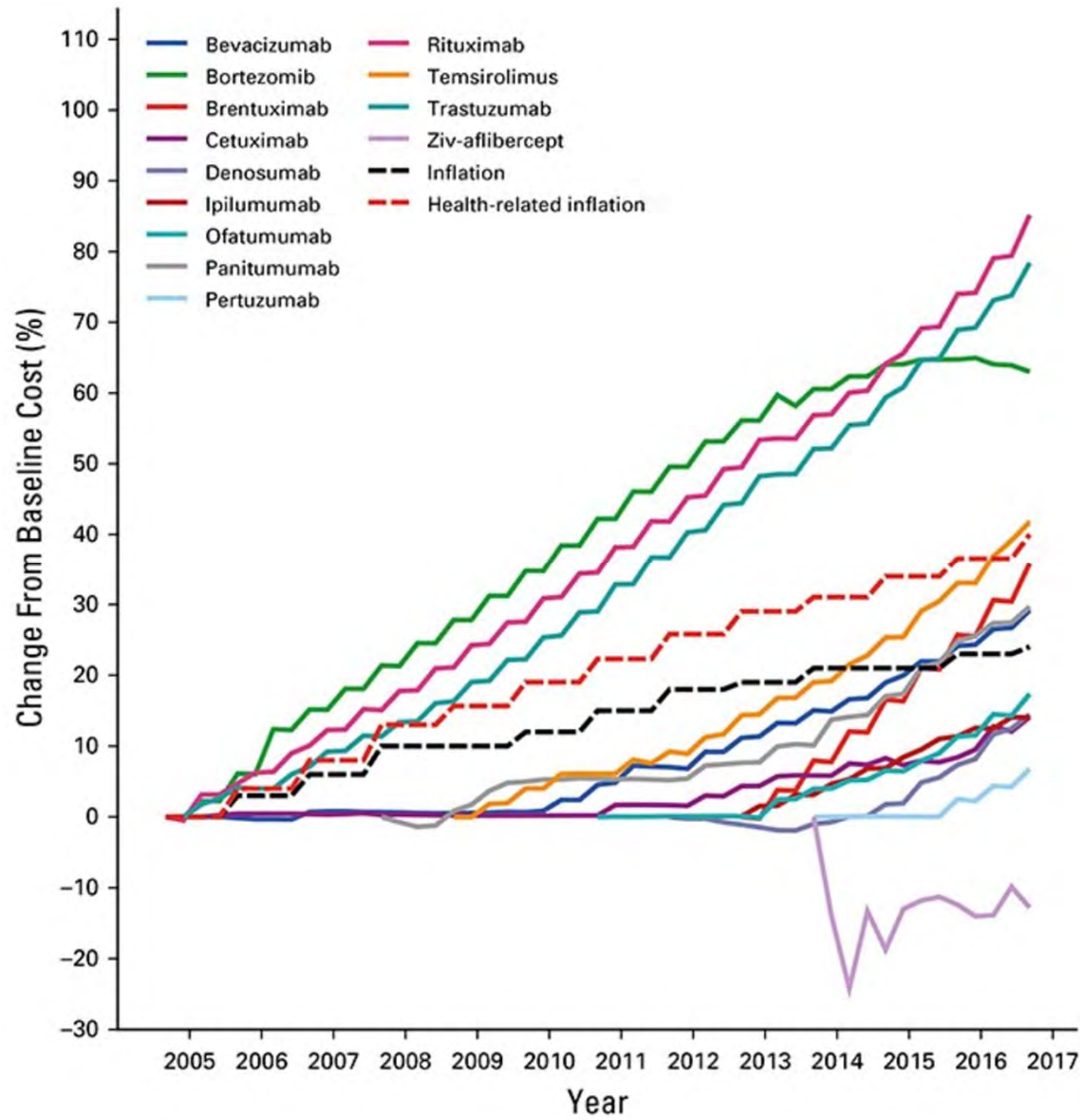


\$13,000 a month



Price of nivolumab



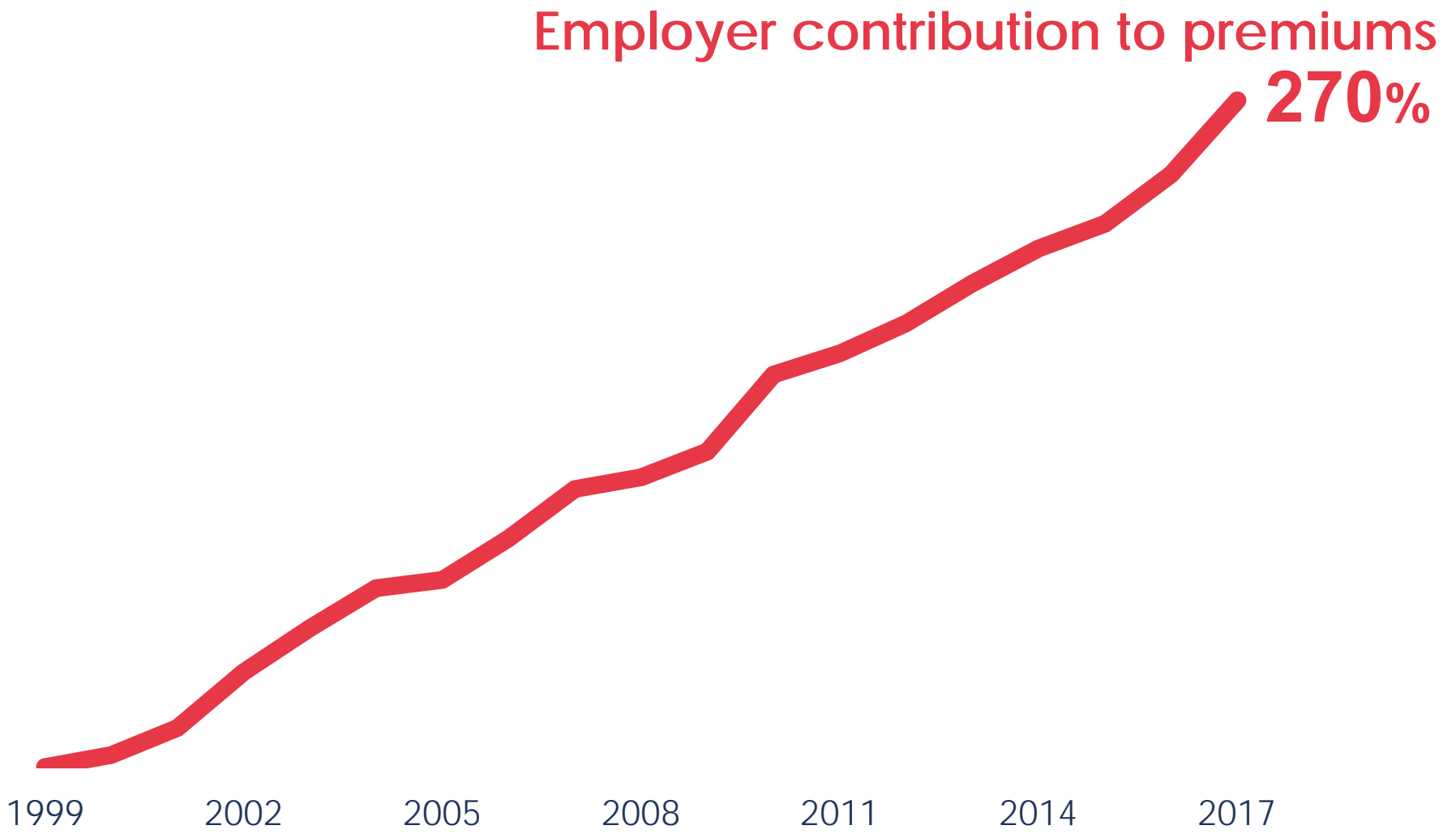


Employer contribution to premiums

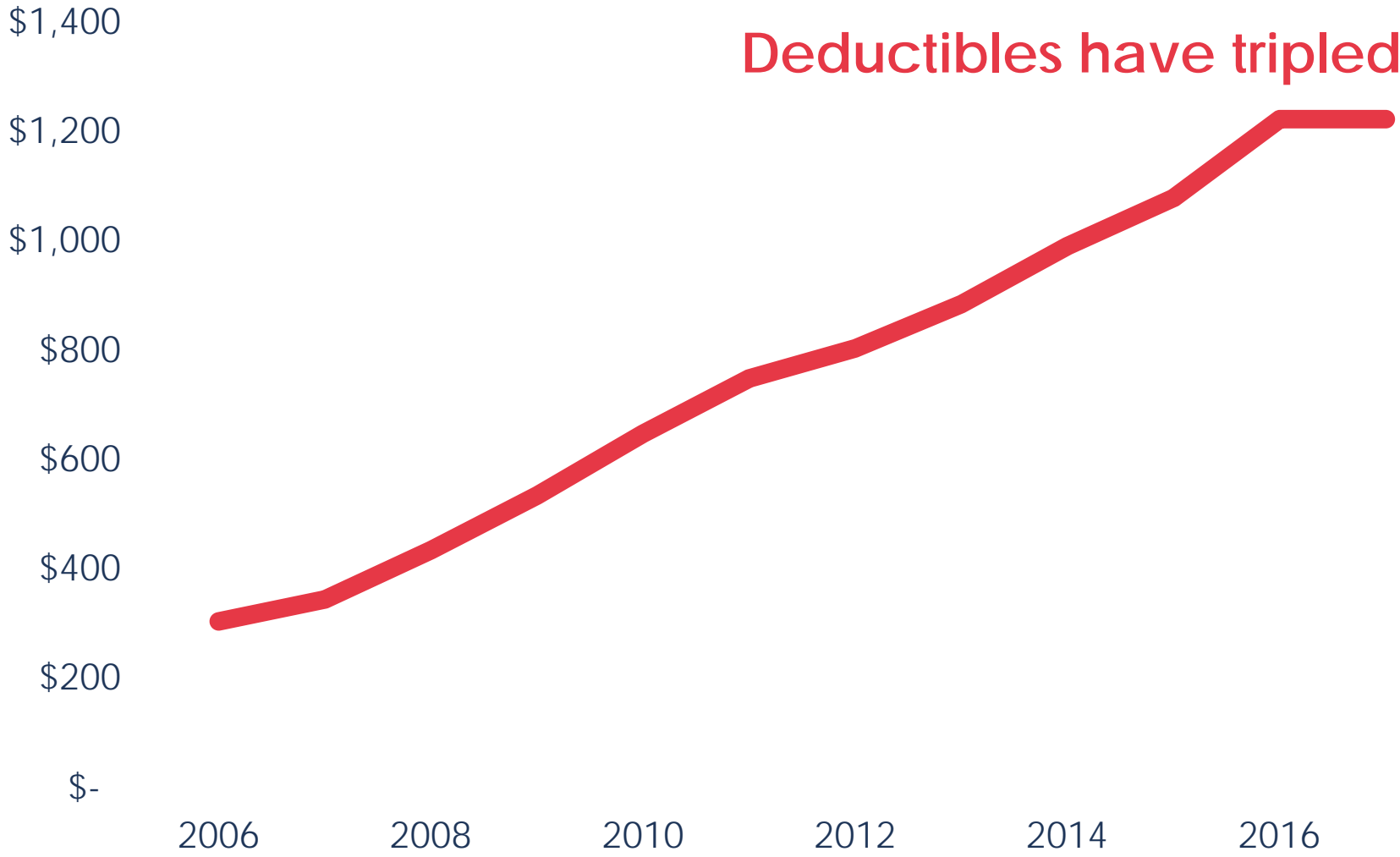
270%

300%
250%
200%
150%
100%
50%
0%

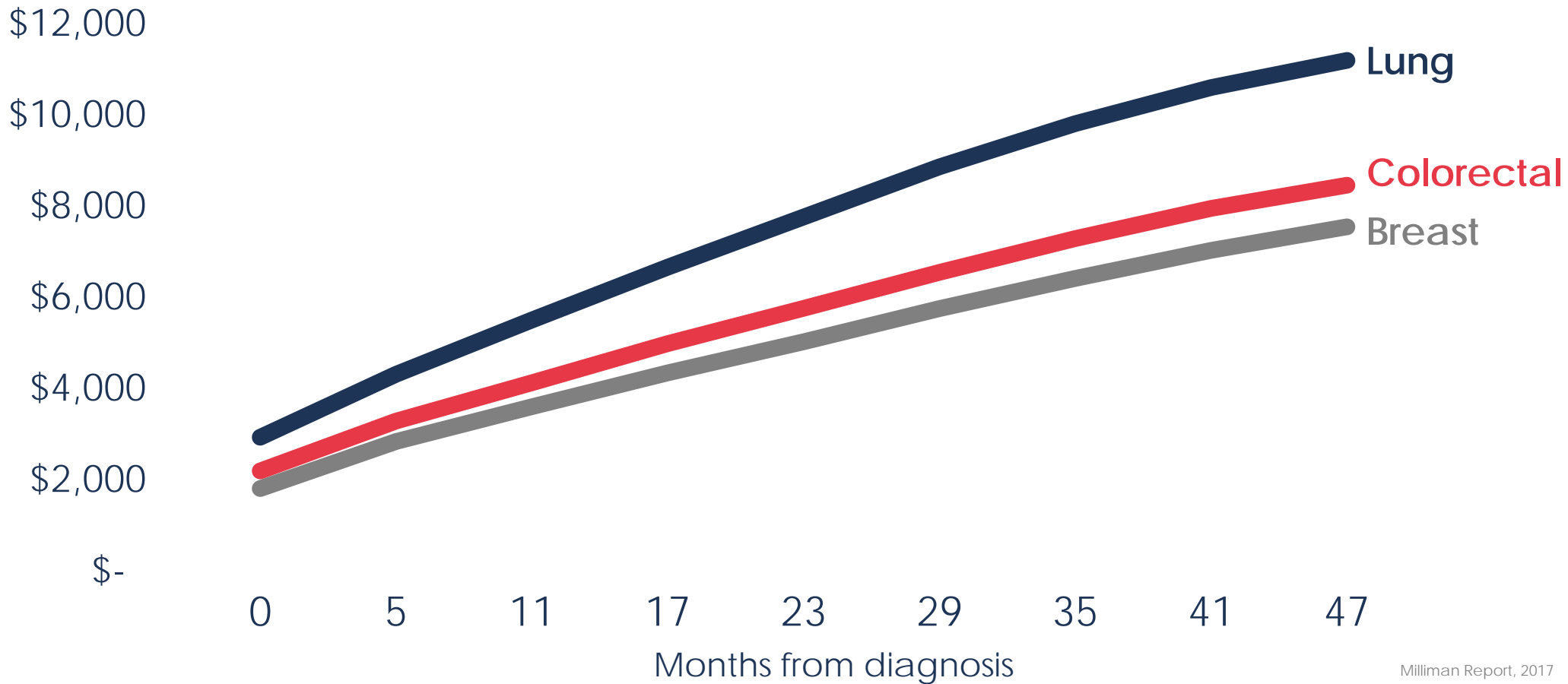
1999 2002 2005 2008 2011 2014 2017



Deductibles have tripled



Average cumulative patient out-of-pocket costs from time of diagnosis



Foregone vacations

68%

Cut grocery expenses

46%

Depleted savings

46%

n=254

Zafar et al, Oncologist 2013

High financial burden:



Quality of life
among patients
with active cancer
and survivors

adjusted beta 0.06 EQ-5D unit per financial burden category; $p < .001$



70%

higher likelihood
of non-adherence

Upper 75th percentile >\$53/month
aRR, 1.70; 95% CI, 1.30 to 2.22

Buying less clothing

Buying less food

Spread out chemotherapy appointments

Bankruptcy

Spending savings

Using other people's medications

Selling property

Replaced prescriptions with over the counter medications

Financial distress

Working longer hours

Cutting out vacations

Missed appointments

Using credit

Declining tests

Taking fewer medications

Borrowing from friends or family

Non-adherence

Delaying care

Buying less clothing

Buying less food

Financial distress

Working longer hours

Spread out chemotherapy appointments

Cutting out vacations

Missed appointments

INTERVENE

Using other people's medications

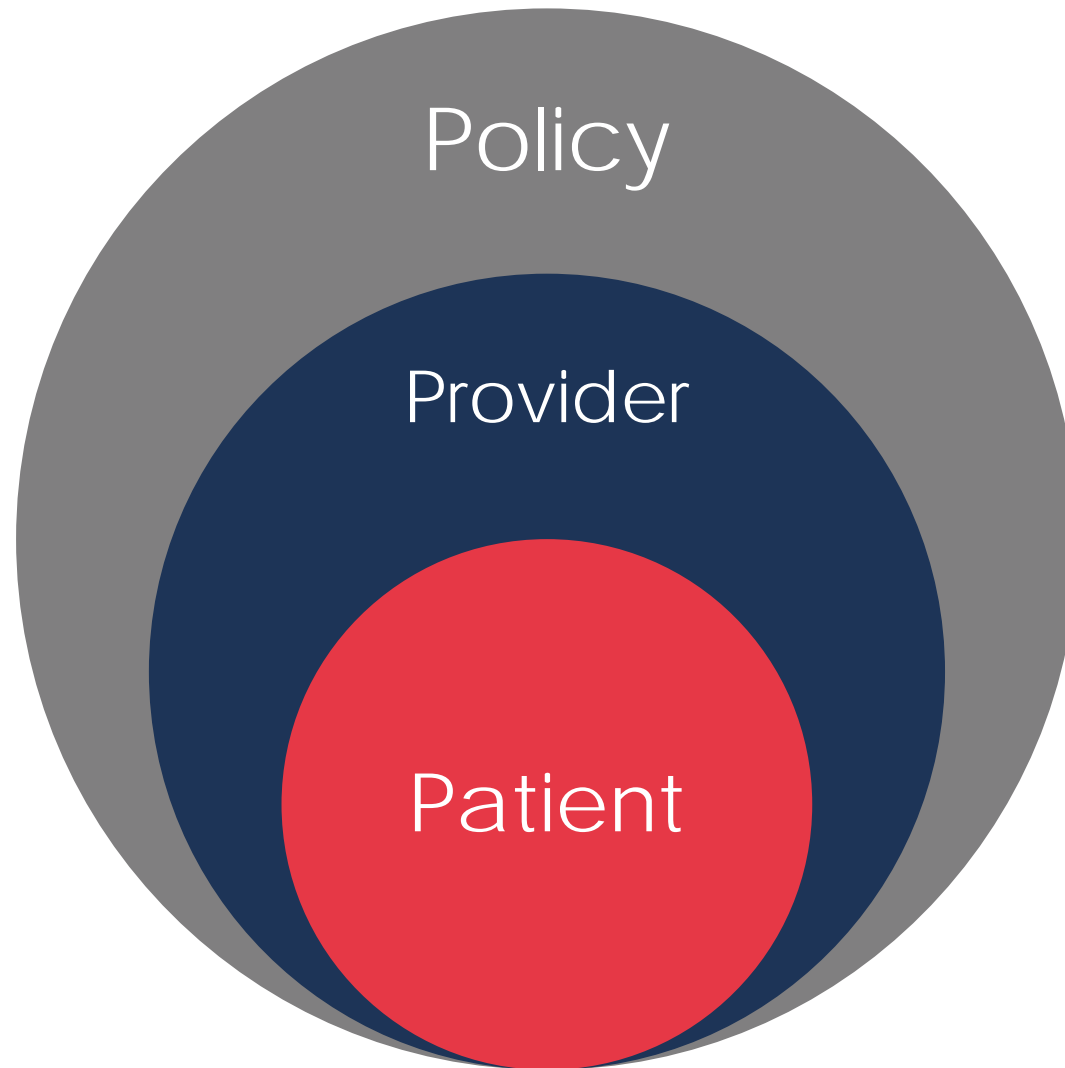
Borrowing from friends or family

Selling property

Replaced prescriptions with over the counter medications

Non-adherence

Delaying care



MANUFACTURERS

GOVERNMENT

INSURERS

HEALTH SYSTEMS

MANUFACTURERS

GOVERNMENT

INSURERS

HEALTH SYSTEMS

OUTCOMES-BASED PRICING



MANUFACTURERS

GOVERNMENT

INSURERS

HEALTH SYSTEMS





In order to promote competition...
the Secretary [of HHS]:

1. may not **interfere with the negotiations** between drug manufacturers and pharmacies and PDP sponsors; and
2. may not require a particular formulary or **institute a price structure** for the reimbursement of covered part D drugs.

Rx

KEEPING OUR PROMISE
TO SENIORS

MANUFACTURERS

GOVERNMENT

INSURERS

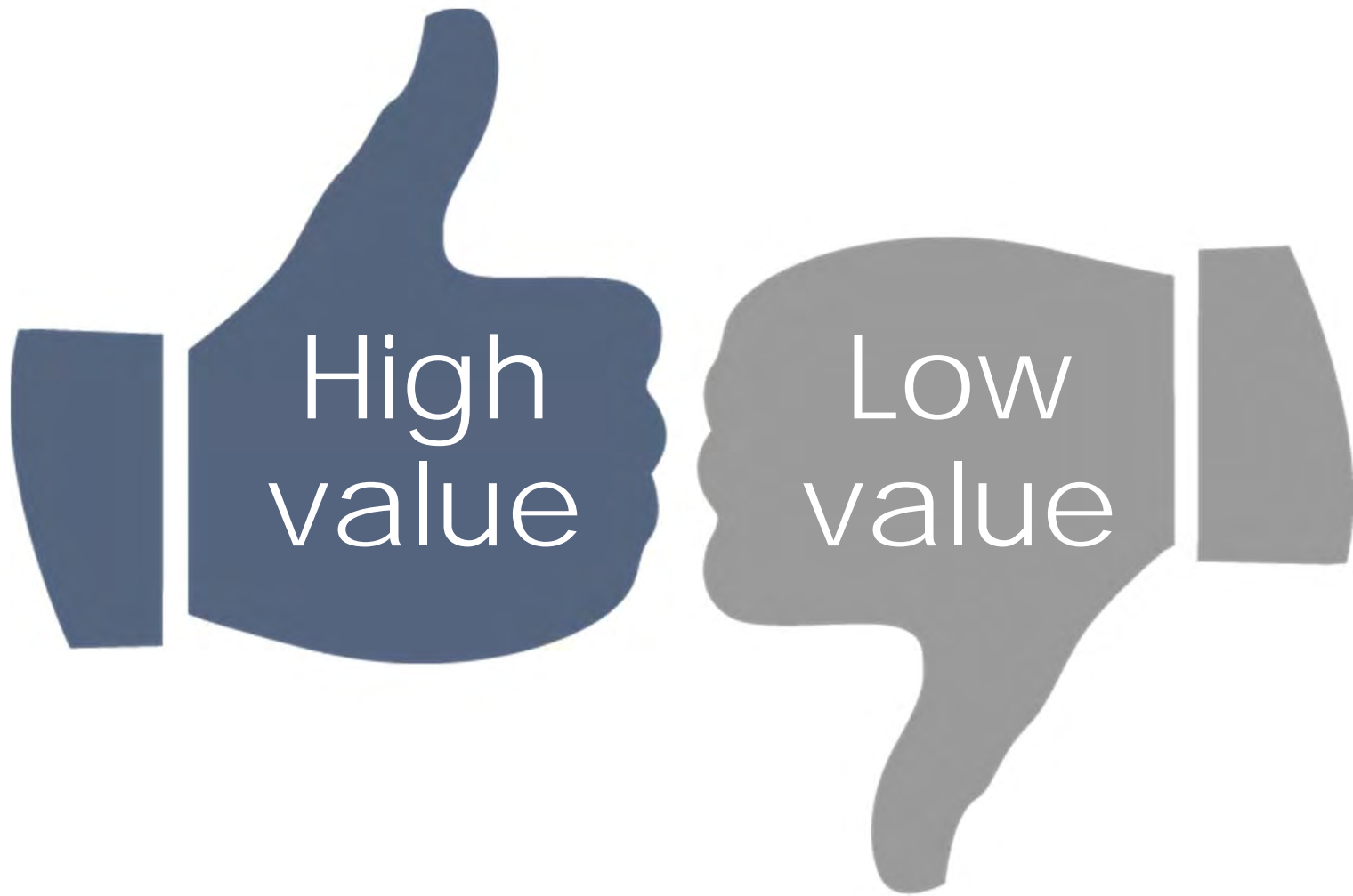
HEALTH SYSTEMS

MANUFACTURERS

GOVERNMENT

INSURERS

HEALTH SYSTEMS



MANUFACTURERS

GOVERNMENT

INSURERS

HEALTH SYSTEMS

MANUFACTURERS

GOVERNMENT

INSURERS

HEALTH SYSTEMS



COST
TRANSPARENCY

Photo: Nick Veasey, TIME, 2013

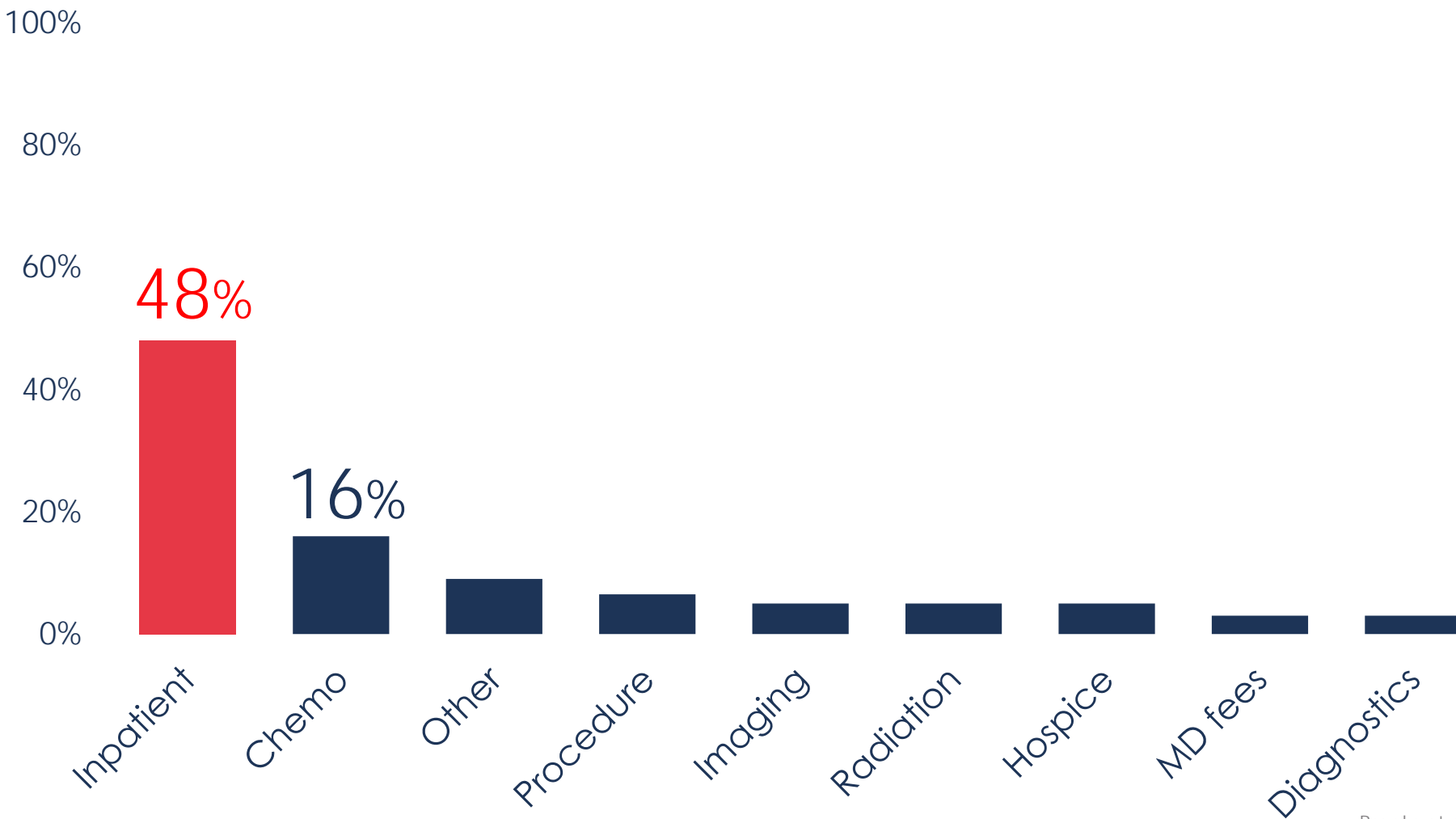
41% - 63%

of oncology symptom-related
ED visits are **avoidable**

57%

of cancer patients
admitted after
presenting to ED

Cancer care costs 6 months from diagnosis

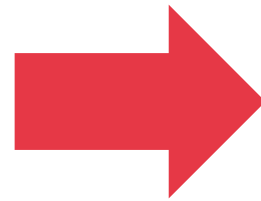


Brooks et al, Health Aff 2014

Extended-hours urgent care

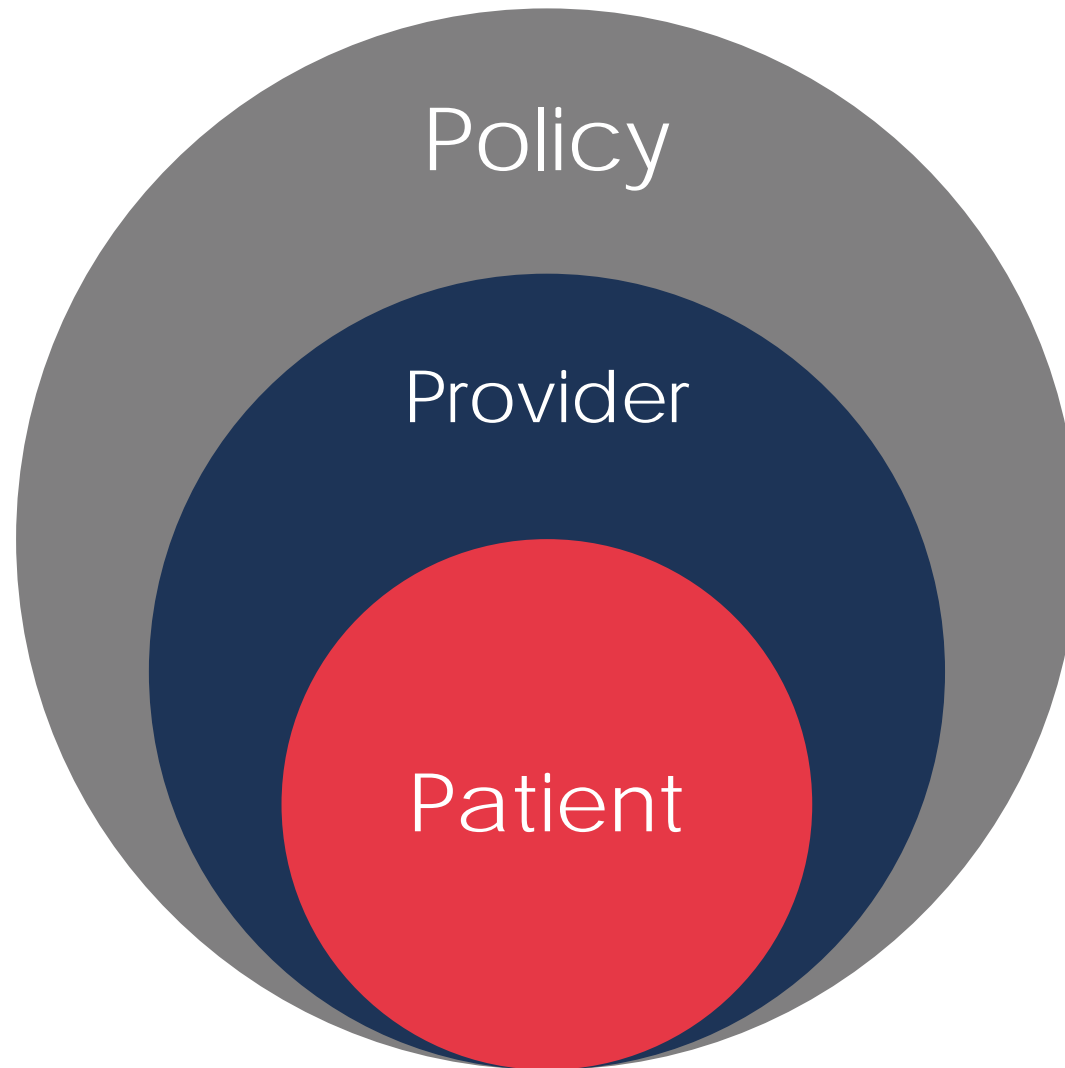
40%

Admissions rate from ED



18%

Admissions rate from
urgent care



Prevent



Assess
fatigue



Reduce
fatigue

Prevent
financial
toxicity

```
graph LR; A[Prevent financial toxicity] --> B[Assess financial toxicity]; B --> C[Reduce financial toxicity]
```

Assess
financial
toxicity

Reduce
financial
toxicity

Prevent
financial
toxicity



Assess
financial
toxicity



Reduce
financial
toxicity

Focus on
high-value
interventions



**Choosing
Wisely[®]**

An initiative of the ABIM Foundation

Don't use cancer-directed therapy for solid tumor patients with:

- low performance status (3 or 4)
- no benefit from prior evidence-based interventions
- not eligible for a clinical trial
- no strong evidence supporting the clinical value of further anti-cancer treatment.



Goals of care

Prevent
financial
toxicity



Assess
financial
toxicity



Reduce
financial
toxicity

“ Any report of the status of a patient's health condition that comes **directly from the patient**, without interpretation of the patient's response by a clinician or anyone else.”



EORTC QLQ-C30 (version 3)

We are interested in some things about you and your health. Please answer all of the questions yourself by circling the number that best applies to you. There are no "right" or "wrong" answers. The information that you provide will remain strictly confidential.

Please fill in your initials:

--	--	--	--	--

Your birthdate (Day, Month, Year):

--	--	--	--	--	--	--	--	--	--

Today's date (Day, Month, Year):

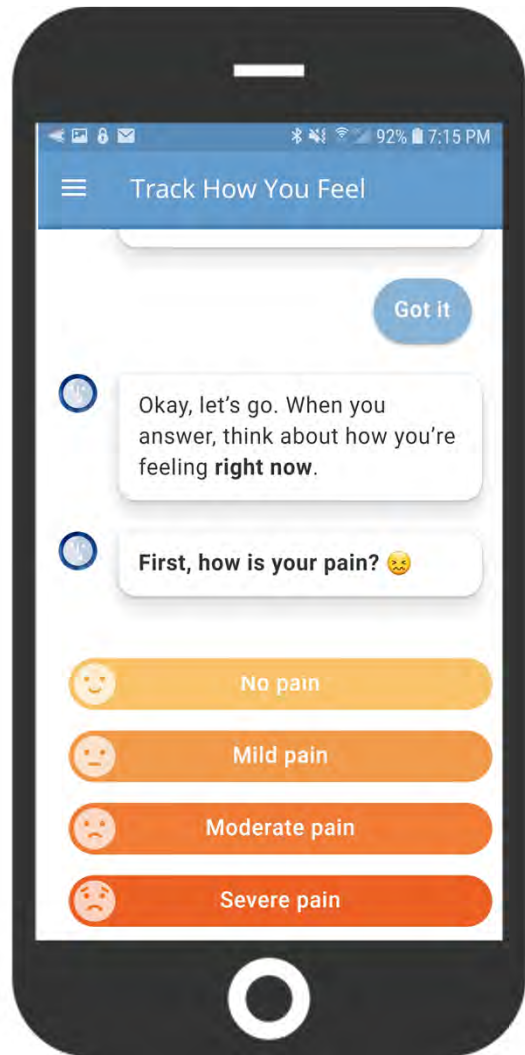
31

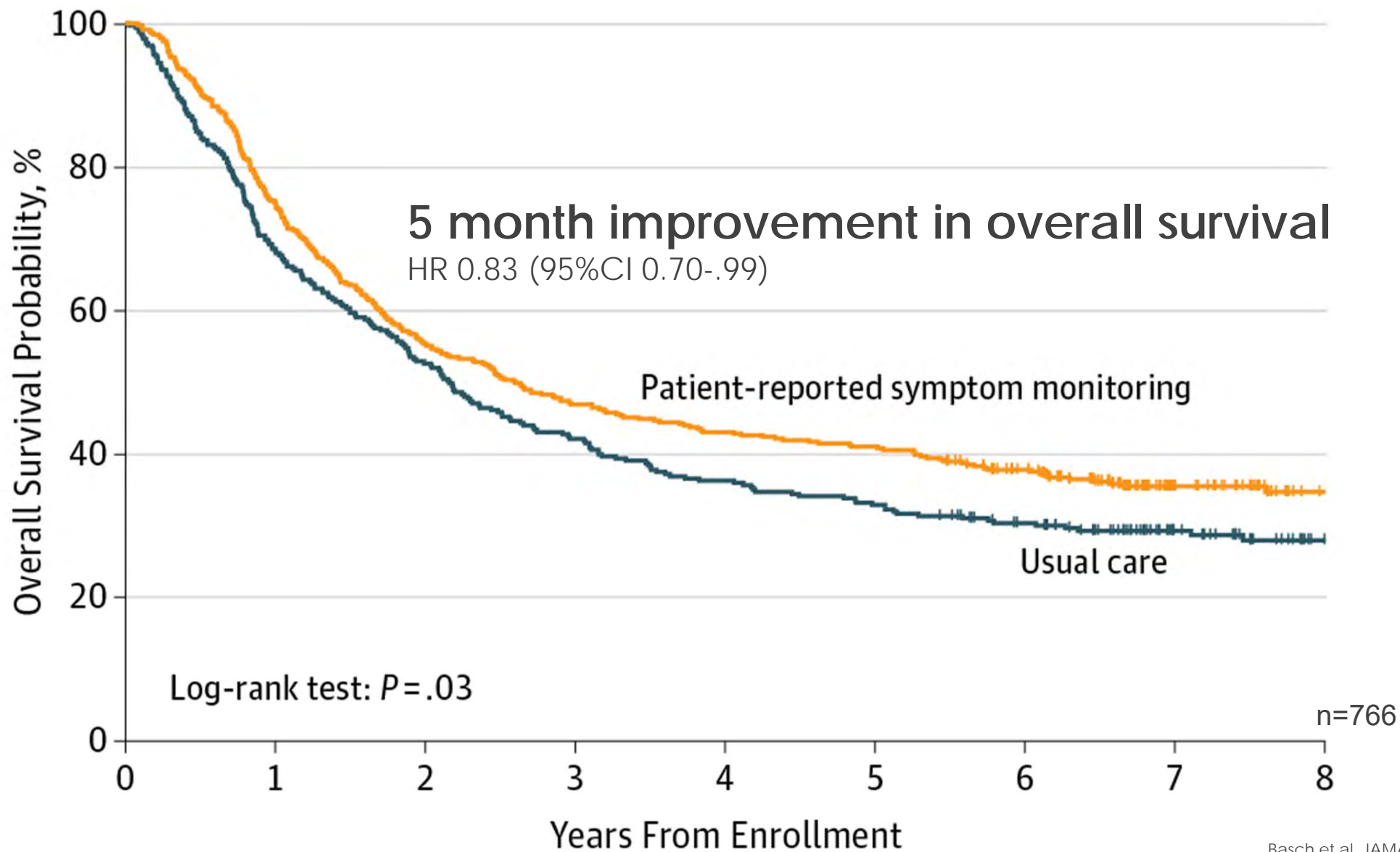
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	Not at All	A Little	Quite a Bit	Very Much
1. Do you have any trouble doing strenuous activities, like carrying a heavy shopping bag or a suitcase?	1	2	3	4
2. Do you have any trouble taking a <u>long</u> walk?	1	2	3	4
3. Do you have any trouble taking a <u>short</u> walk outside of the house?	1	2	3	4
4. Do you need to stay in bed or a chair during the day?	1	2	3	4
5. Do you need help with eating, dressing, washing yourself or using the toilet?	1	2	3	4

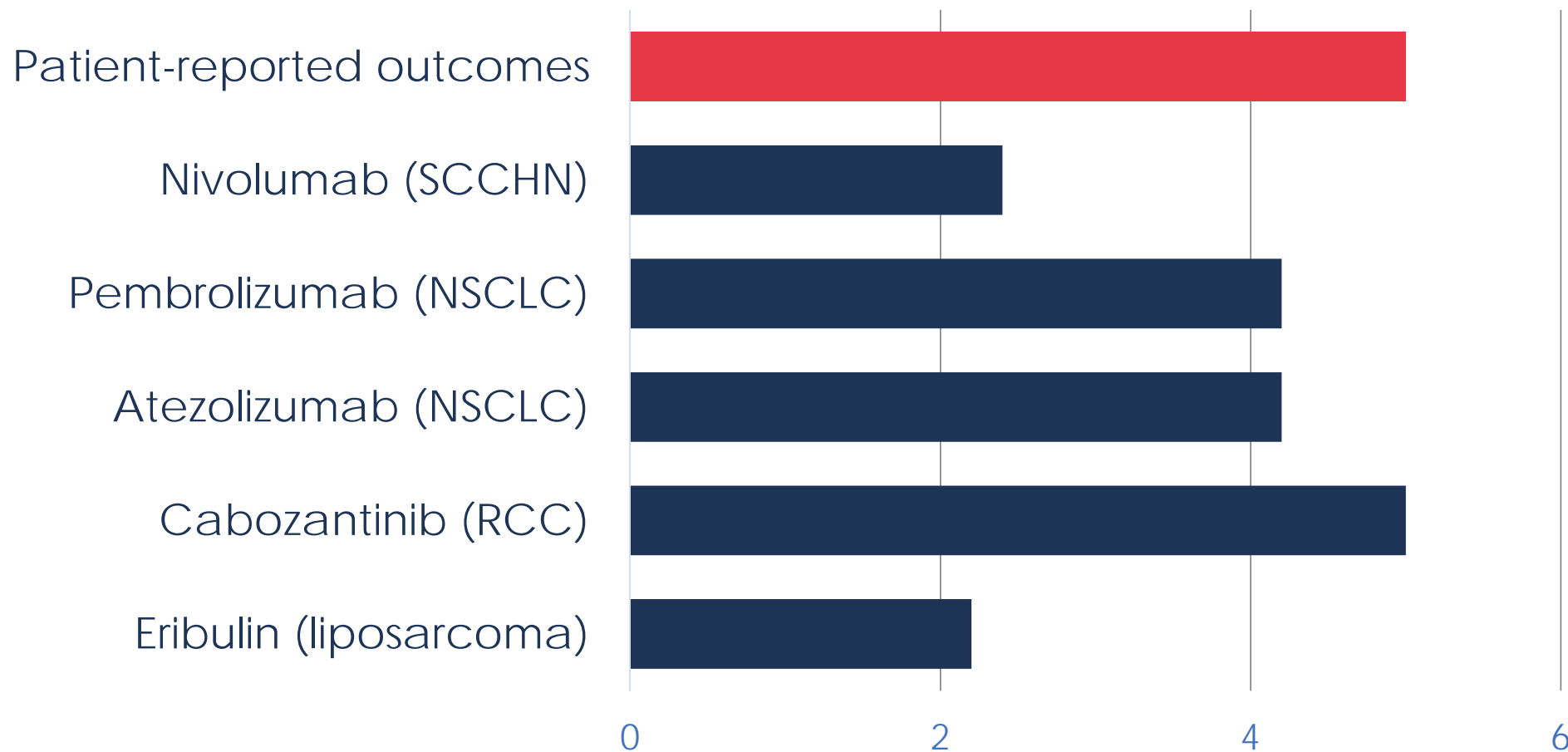
During the past week:

	Not at All	A Little	Quite a Bit	Very Much
6. Were you limited in doing either your work or other daily activities?	1	2	3	4





Improvement in overall survival



Prevent
financial
toxicity



Assess
financial
toxicity

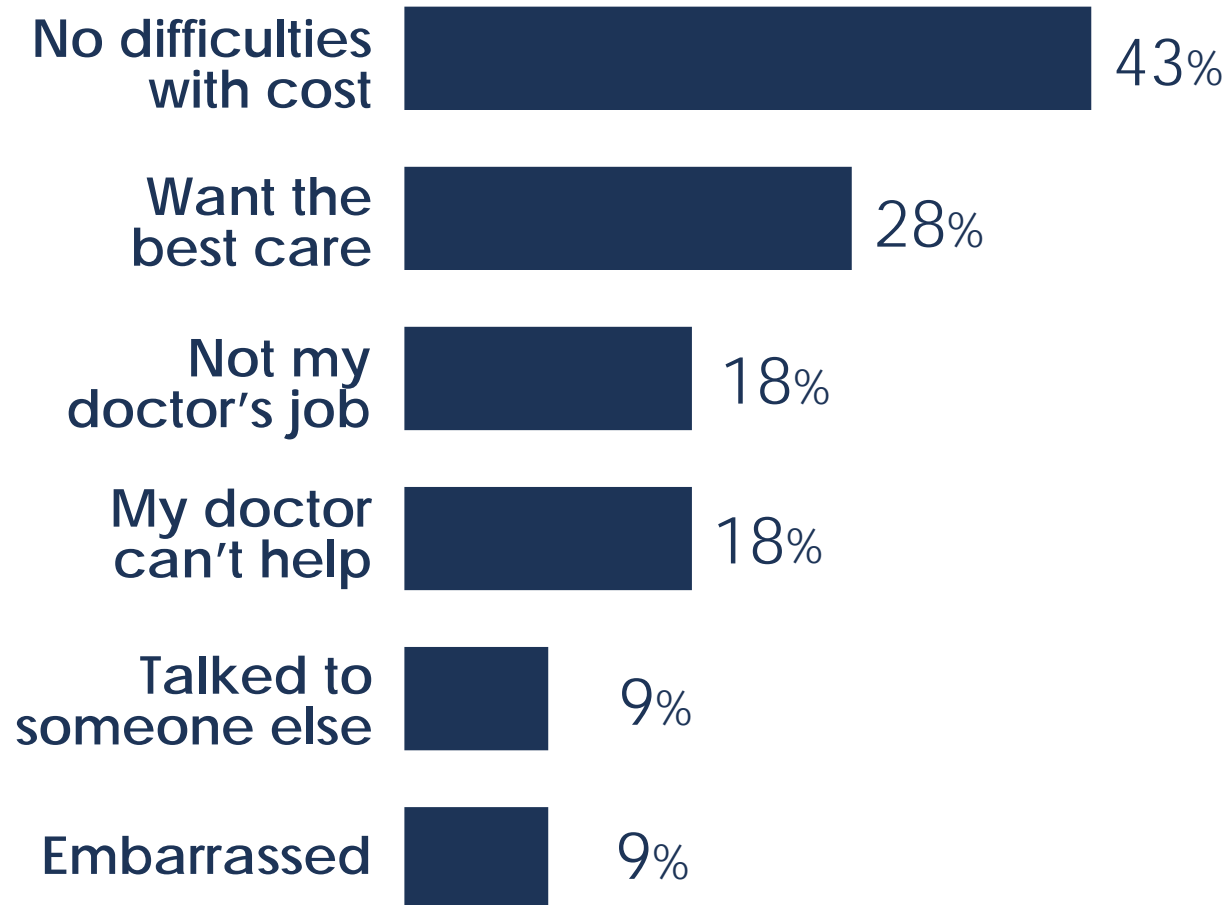


Reduce
financial
toxicity

52% desire a cost discussion
with oncologists

19% actually have a
cost discussion

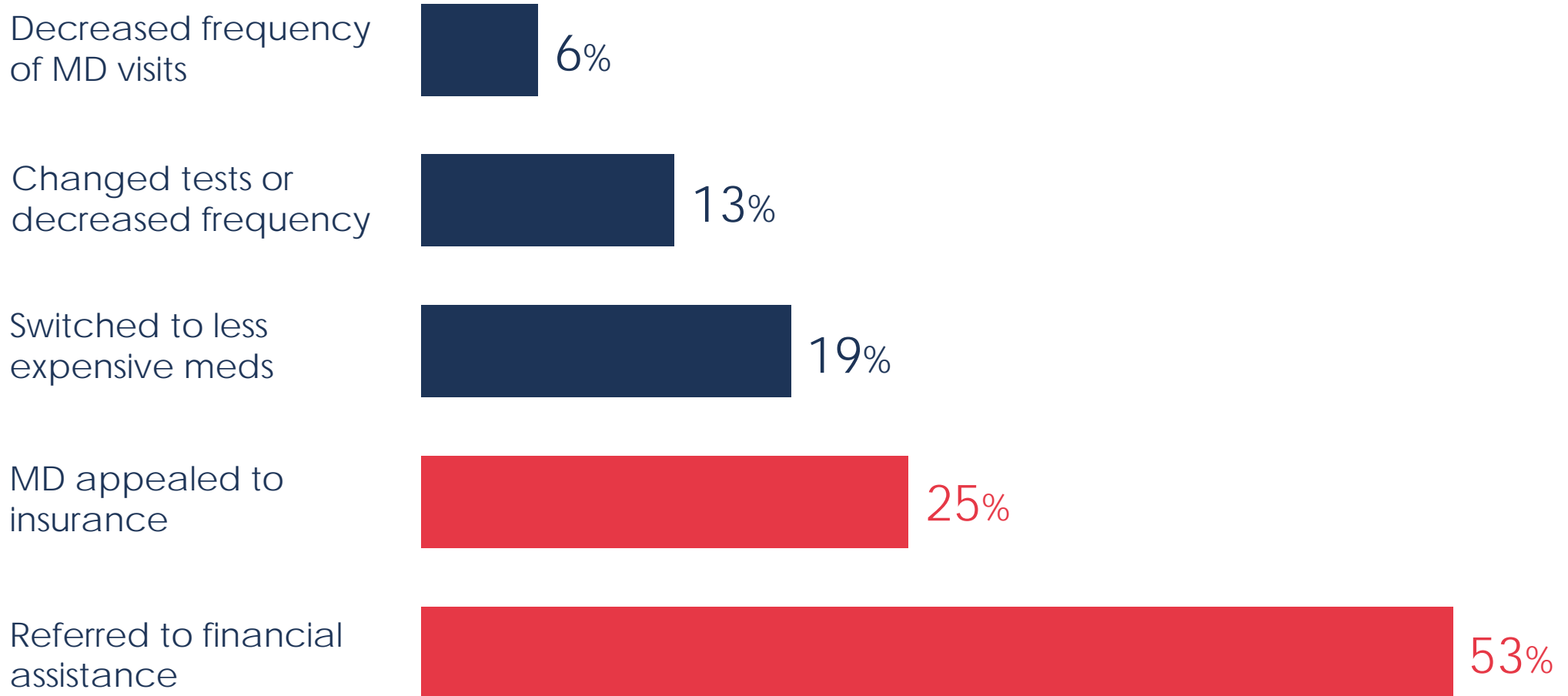
Why didn't you discuss costs?



57%

reported lower costs
due to a cost discussion
with their oncologist

How were costs decreased?



Medicare Bad Debt

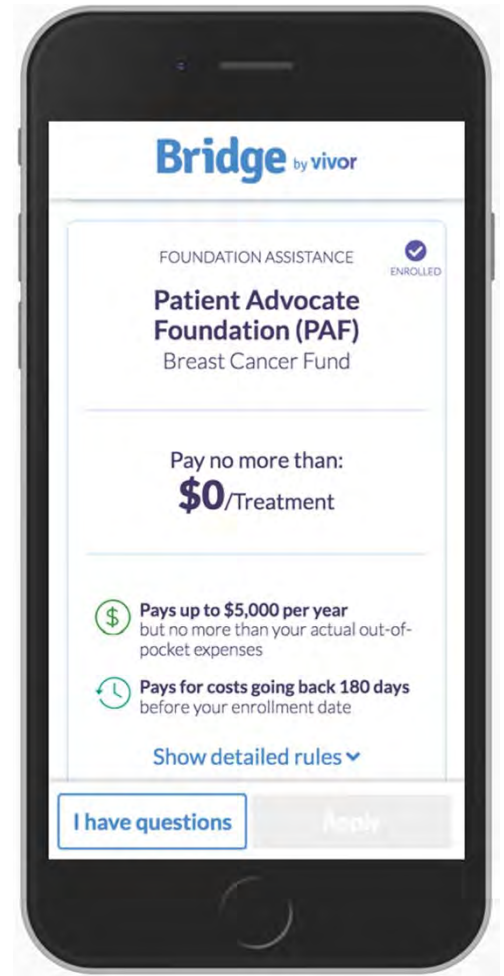
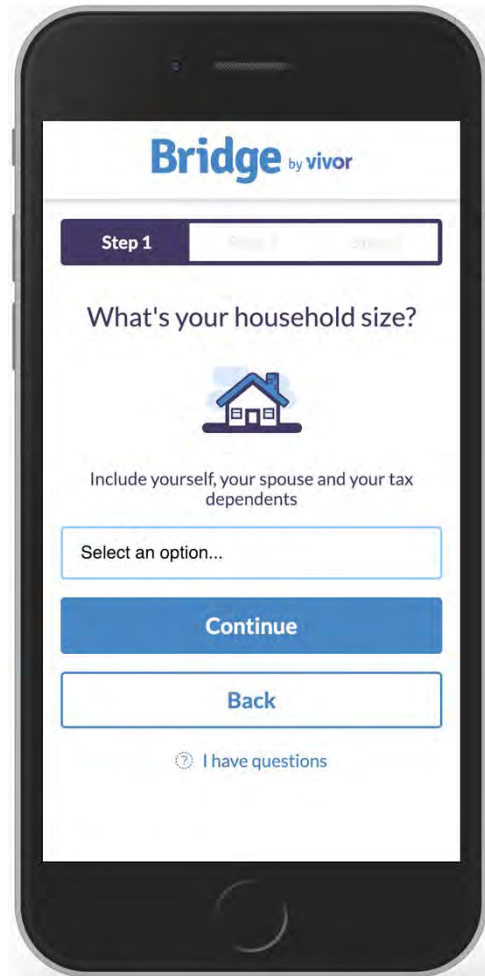
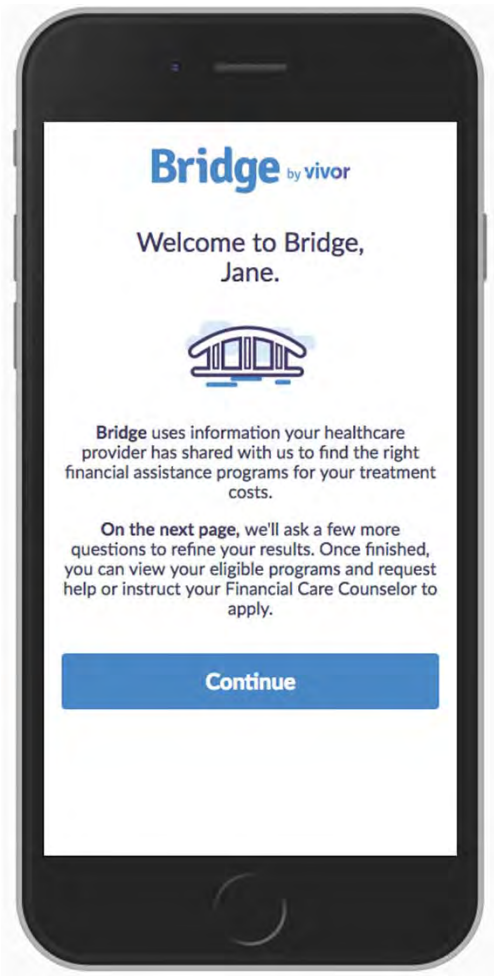
\$3.14 billion

2012

\$3.69 billion

2016

17% increase



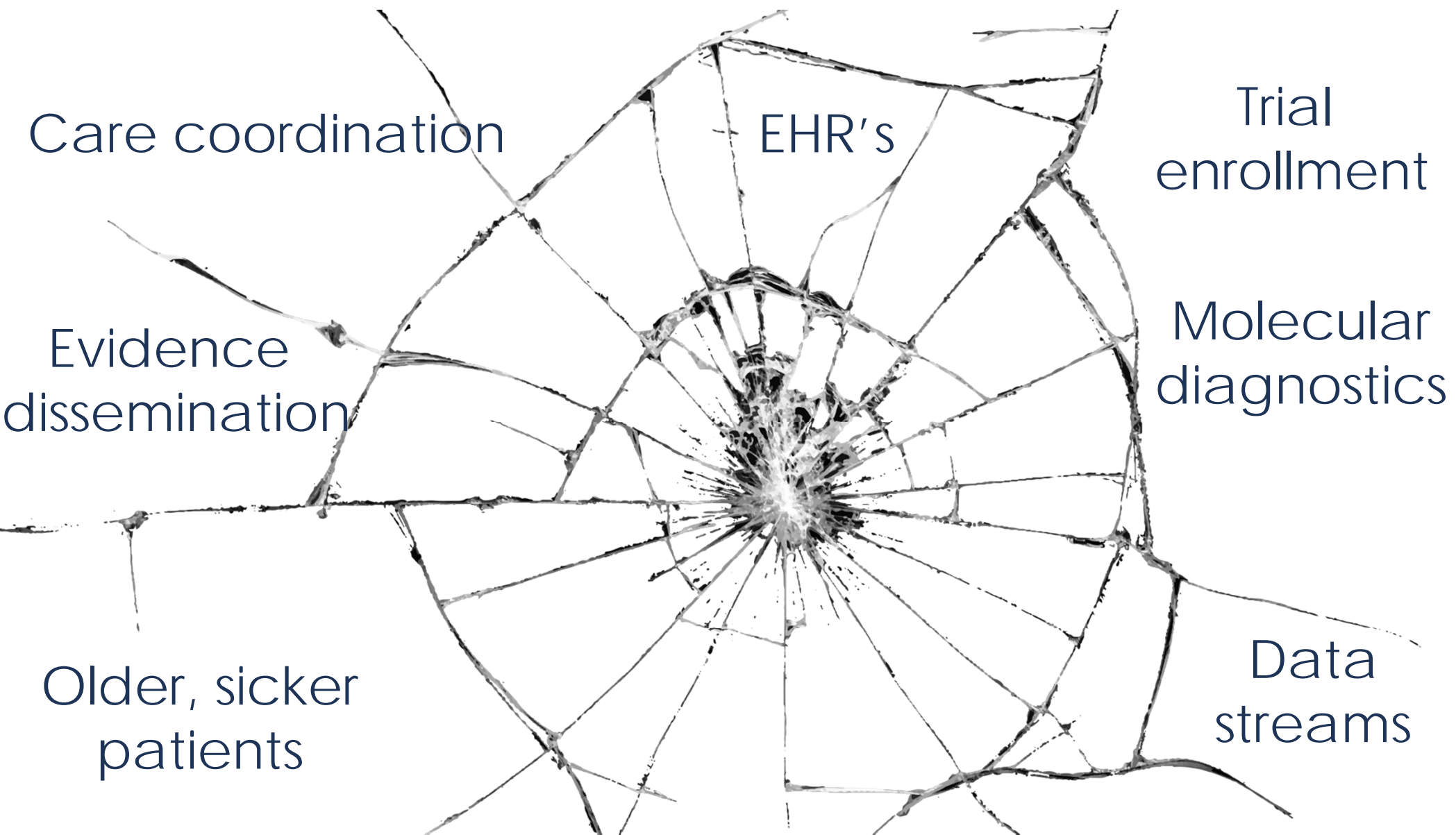
Phase I - Results

30-patient feasibility study

83% agreed/strongly agreed that Bridge improved knowledge of the financial aspects of cancer care

72% matched to at least one financial assistance program

Mean of **4** financial assistance program matches per patient



Care coordination

EHR's

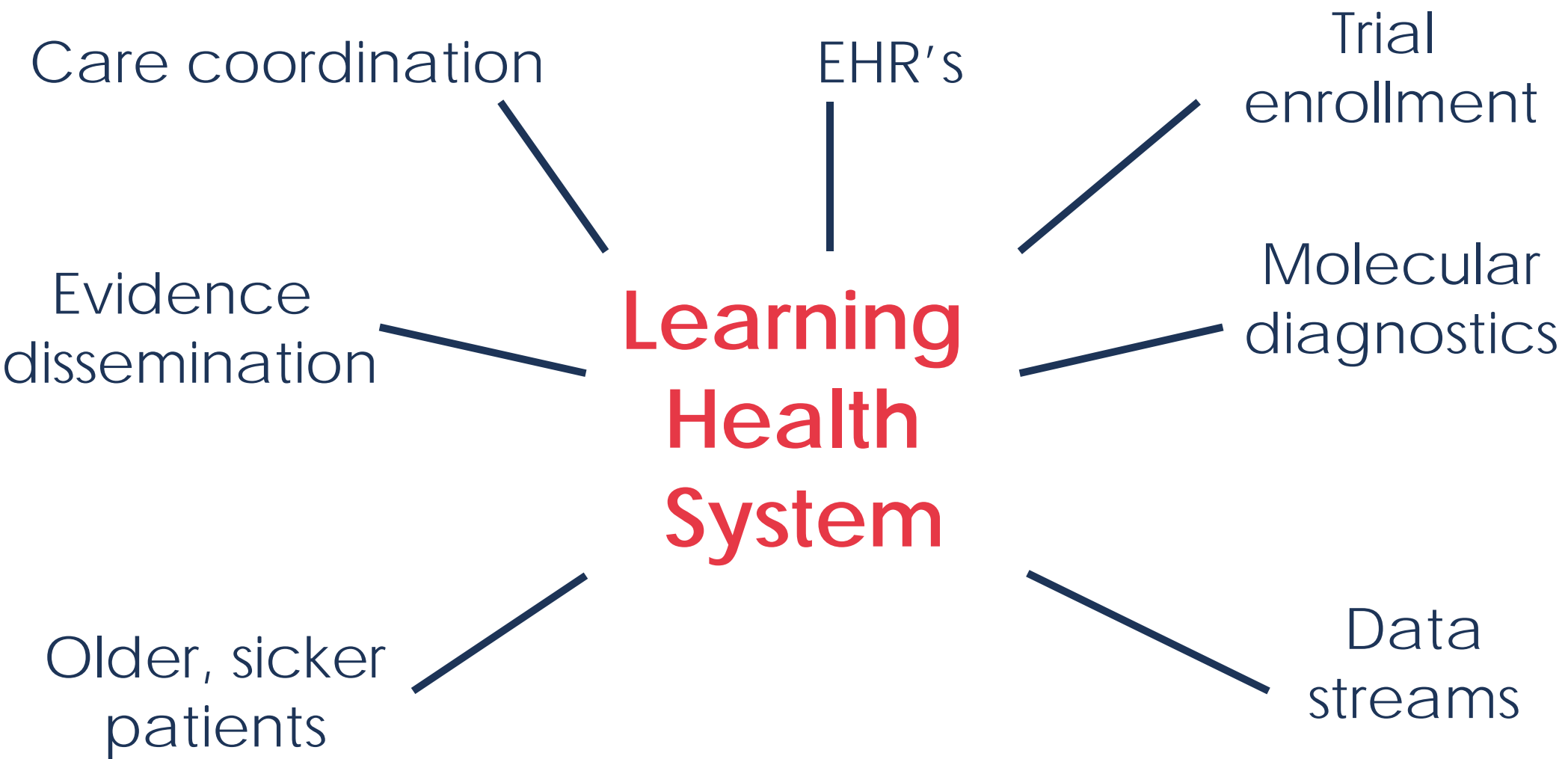
Trial
enrollment

Evidence
dissemination

Molecular
diagnostics

Older, sicker
patients

Data
streams





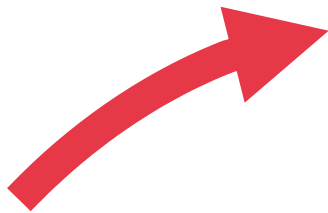


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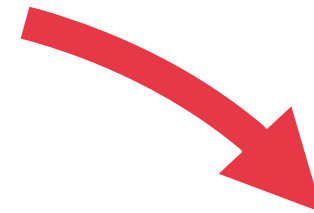




Collect
data



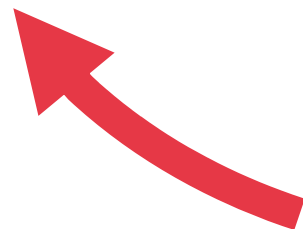
Analyze
data



Create
knowledge



Change
practice



GENOMIC FINDINGS DETECTED**KRAS** wildtype (codons 12 & 13)**KRAS/NRAS**

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