

**An Introduction to the Institute for
Clinical Economic Review (ICER) and Their
Implications for New Sickle Cell Disease
Treatments: A Primer on the Issues**

January 16, 2019

The Basics

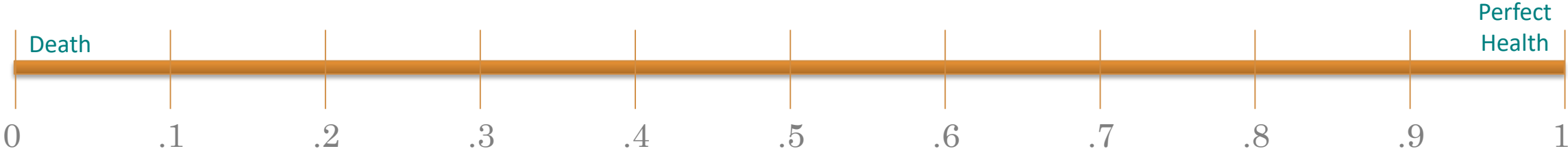
- What Does ICER stand for?
 - Institute for Clinical Economic Review
- What does ICER do?
 - Conducts cost effectiveness analyses of new drugs
 - ICER has begun its engagement for a review of Crizanlizumab (Novartis), a P-selectin inhibitor, that is currently under FDA priority review.
 - ICER is also reviewing Voxelotor (Global Blood Therapeutics), an HbS polymerization inhibitor.
- Is ICER part of government?
 - ICER is not a government entity and is not affiliated with the FDA or CMS.
- For whom does ICER conduct value assessments?
 - ICER's assessments are used by some payers and PBMs to determine whether and how to cover new treatments for patients.

Quality-adjusted life years (QALYs): A description of ICER's methodology



QALYs discriminate against people with disabilities and serious chronic conditions by placing a lower value on their lives

What's the value of your life?



Person with Cancer



Person with Rheumatoid Arthritis



Person with Diabetes

QALYs as a Means of Measuring Health Quality

- Measure of disease or disability burden and treatment efficacy in mitigating it;
- 1 QALY = 1 year in 'perfect health',
- 0 QALY = Death
- $0 < x < 1$ = Disabled or sick life

Concerning Quote from Notable Bioethicist

- Notable Australian Moral Philosopher Peter Singer – advocate for QALYs and care rationing:
 - “If...a year with quadriplegia is valued at only half as much as a year without it, then a treatment that extends the lives of people without disabilities will be seen as providing twice the value of one that extends, for a similar period, the lives of quadriplegics.”
 - Such an approach has disability rights advocates justifiably worried.

Other Experts Disagree

- “We have to ask, ‘Value to whom?’ Because when value assessments based on averages are applied to coverage decisions, we get caught in the middle without access to care.” Tony Coelho, PIPC Chairman, patient with epilepsy.
- “You win or you lose, based on some arbitrary, nontransparent, non-peer-reviewed report,” says Terry Wilcox, executive director and co-founder of Patients Rising.
- “As critical healthcare decisions are made that will have serious repercussions in the lives of patients with cancer, it is vital to consider their needs, preferences, and values. The QALY is not an appropriate measure to help us achieve these goals.” Elizabeth Franklin, Cancer Support Community.
- “There is no inherent reason why life-extension and improved function have to be pitted against each other – the QALY system sets up an arbitrary choice that punishes disabled people for the natural desire to have access to life-sustaining treatment.” Ari Ne’eman, PIPC consultant and long-time disability advocate.
- “One of the most troubling aspects of the QALY system is its potential to quell research into rare disease therapies.” William S. Smith, Ph.D., is a visiting fellow in life sciences at Pioneer Institute.

Challenges with QALY Model

- Under population survey models, the non-disabled population may systematically overestimate the burden of life with disability.
 - Research suggests a majority of American public says they would rather have HIV than be blind (Scott, 2016).
- Common QALY measure (EuroQol-5D) rates inflammatory arthritis as “worse than death” (Harrison, 2009).
 - Significant variation between TTO and VAS quality of life assessments reported under EuroQol-5D
- Under models where PWD self-report quality of life, well supported people with disabilities reporting relatively high levels of quality of life due to access to adequate support find it hard to demonstrate sufficient gains.
 - Why? Because their treatments are working and they are supported.
- Exacerbate disparities by relying on randomized clinical trials (RCTs) that do not reflect subpopulations.

QALYs and evLYGs

The evLYG

ICER's future reports will incorporate more prominently a calculation of the Equal Value of Life Years Gained (evLYG), which evenly measures **any** gains in length of life, regardless of the treatment's ability to improve patients' quality of life.

In other words, if a treatment adds a year of life to a vulnerable patient population – whether treating individuals with cancer, multiple sclerosis, diabetes, epilepsy, or a severe lifelong disability – that treatment will receive the same evLYG as a different treatment that adds a year of life for healthier members of the community.

Supplementing the QALY, Not Replacing It

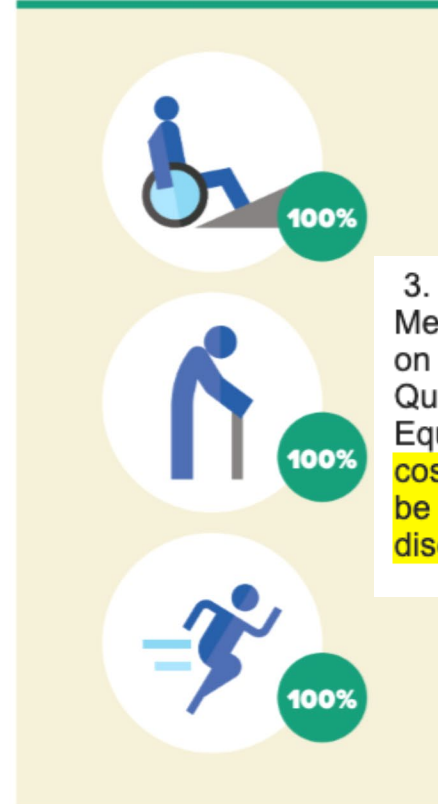
To maintain the ability of cost-effectiveness analyses to reflect the full benefits that treatments may have on quality of life, ICER will continue to calculate each treatment's QALY gained. The cost per QALY gained remains the best way for policymakers to understand how well the price of a treatment lines up with its benefits and risks for patients.

By understanding a treatment's cost per evLYG, as well as its traditional cost per QALY, policymakers can take a broader view of cost-effectiveness and be reassured that they are considering information that poses no risk of discrimination against any patient group. If ICER's analysis finds a major difference in these two measures, we will include specific language in our report describing the underlying characteristics of the treatment and the condition that lead to the difference.

The QALY remains the gold standard in cost-effectiveness analyses for many reasons, and a systematic departure from using the QALY would risk undervaluing treatments that improve the quality of life more than other alternatives for that condition. By drawing greater attention to the analysis of a treatment's evLYG, however, ICER hopes to provide peace of mind to concerned patients and policymakers, while furthering the ability of cost-effectiveness analysis to support explicit, transparent discussions in the U.S. on how best to align a drug's price with its benefits for patients.

life **exactly the same** across all diseases, regardless of the patient population's age, severity of illness, or level of disability.

**WITH evLYG, ONE ADDED YEAR
= ONE ADDED YEAR**



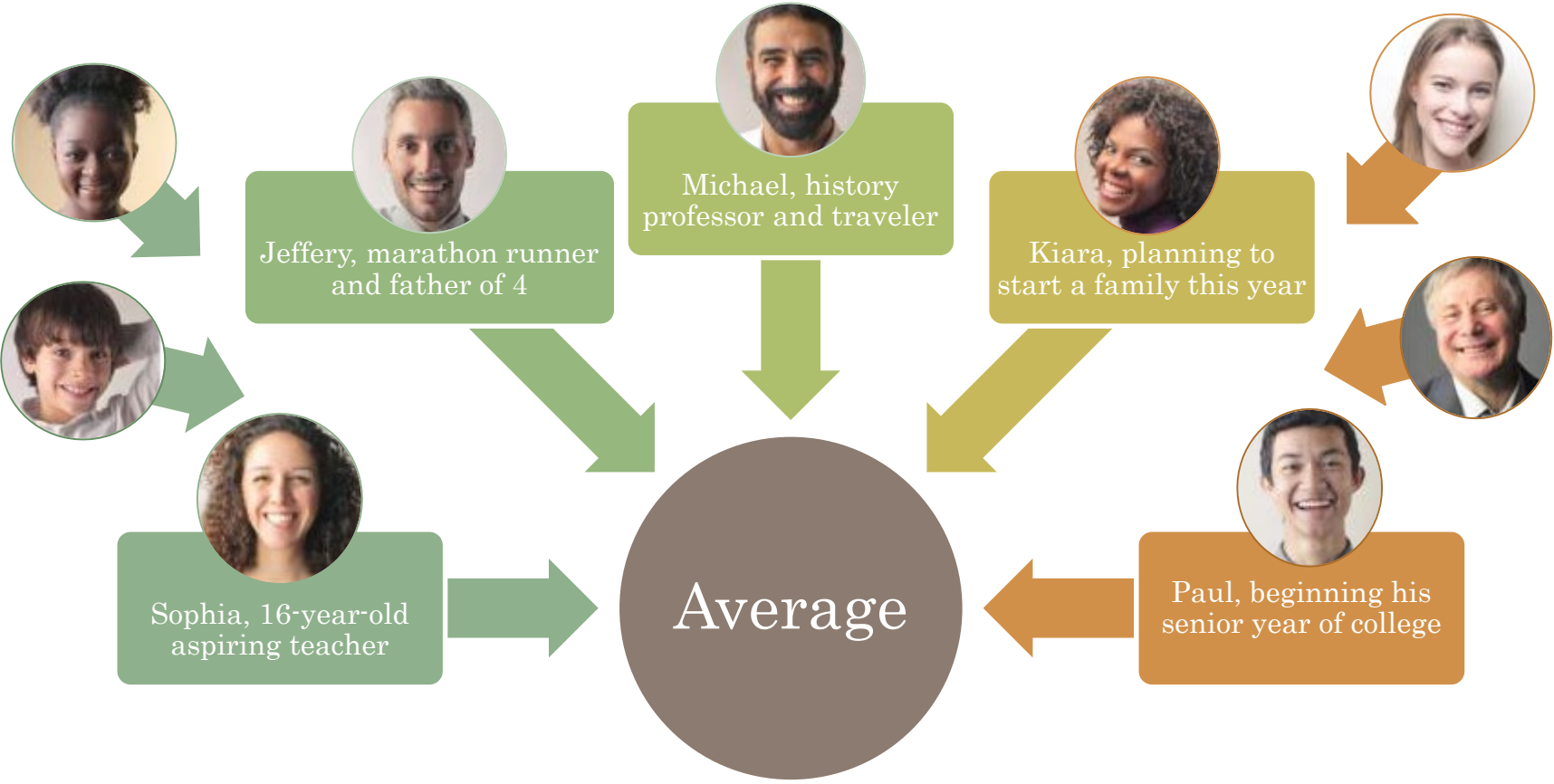
3. Reaffirming Commitment to Multiple Cost-effectiveness Outcome Measures: ICER reaffirms our **commitment** to include a broad perspective on cost-effectiveness in all assessments, measuring both a treatment's Quality-Adjusted Life Years (QALY) gained, as well as the complementary Equal Value of Life Years Gained (evLYG). **By understanding a treatment's cost per evLYG, as well as its traditional cost per QALY, policymakers can be reassured that they are considering information that poses no risk of discrimination against any patient group.**

ICER welcomes broad stakeholder input on the QALY and the evLYG as we update our value assessment framework in 2019.

Why the evLYG Does NOT Fix the Problem

- The evLYG **partially** mitigates the life-extension problem – if insurers use it.
- But it still offers payers a means of refusing access to an effective and beneficial drug
- The evLYG doesn't address the undervaluing of quality of life improvements or ignoring clinical knowledge.
- QALY-based systems are less effective than condition-specific means of assessment

QALYs ignore differences in patient needs and preferences because they are based on averages



Different People Respond Differently to the Same Drugs

**For many conditions, such disparities
are reflected in clinical knowledge –
but not yet in research literature**

ICER: Additional Methodological Challenges

ICER Value Assessments

- Conducts cost effectiveness studies for insurers using the cost-per-QALY methodology, with a new emphasis on first-in-class therapies.
- Scheduled studies:
 - Cystic Fibrosis
 - Ulcerative Colitis
 - Cardiovascular Disease
 - Rheumatoid Arthritis
 - Sickle cell disease
- Studies slated for 2020
 - **Beta thalassemia**
 - **Breast cancer**
 - **Cystic fibrosis**
 - **Hemophilia A**
 - **High LDL-cholesterol**
 - **HIV and pre-exposure prophylaxis (PrEP)**
 - **Lymphoma**
 - **Multiple sclerosis**
 - **Non-alcoholic steatohepatitis (NASH)**
 - **Osteoarthritis-associated pain**
 - **Postpartum depression**
 - **Rheumatoid arthritis**
 - **Sickle cell disease**
 - **Ulcerative colitis**
 - **Wet age-related macular degeneration**

ICER's Evolution

ICER Founded

2006

ICER Reference
in Medicare Part
B Payment
Demonstration

Mar 2016

ICER /
Department of
Veterans Affairs
Collaboration

Jun 2017

ICER Receives
\$13.9M Grant
from the Arnold
Foundation

Oct 2017

ICER
Collaboration
with New York
Drug Utilization
Review Board

March 2018

CVS/Caremark
announces
reliance on ICER
reports

May 2018

Flaws in ICER's Methods

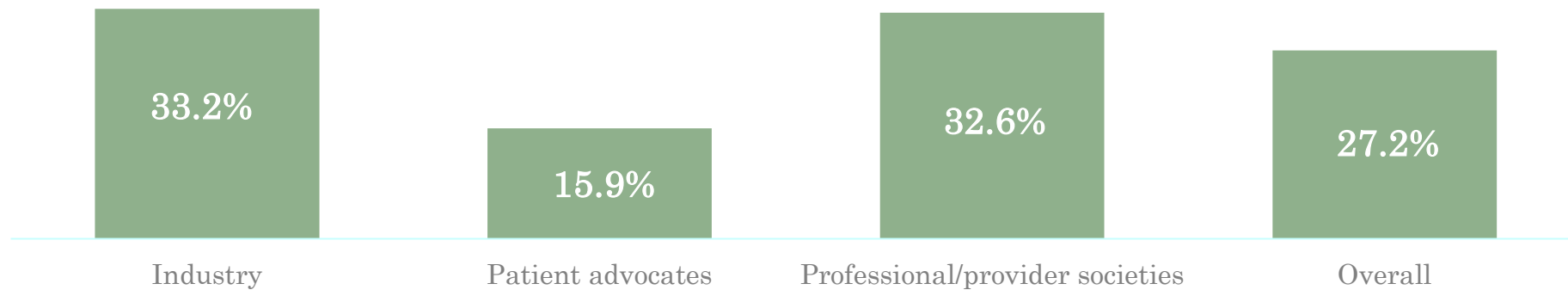
- **Reliance on Discriminatory Methods**
 - Use QALYs and similar one-size-fits-all summary metrics.
 - Place a lower value on people with disabilities and serious chronic conditions
 - Sidesteps ethical problems related to using QALYs in health care decision-making.
- **Failure to Meaningfully Engage Expert Stakeholders**
 - Leaves patients, caregivers and clinicians who have firsthand experience with the condition under review out of the deliberation and voting process.
- **Failure to Consider Outcomes that Matter to Patients and People with Disabilities**
 - Values a treatment strictly from the health system and insurer perspectives. This can lead to situations where it is more “valuable” not to provide care for some patients because to do so would not be “cost-effective.”
- **Premature Assessments**
 - Rush to deliver payers and policymakers value assessments immediately upon FDA approval has led to hasty reviews based on early assumptions, oversimplified models, and incomplete data.
- **Lack of Transparency to Patients and People with Disabilities**
 - Assessment process is a black box, leaving patients and people with disabilities in the dark on the assumptions used and important limitations that may have impacted the results.

Lack of *Meaningful* Patient Engagement in Development of ICER Studies

Despite ICER acknowledging a majority of comments, only 27 percent were incorporated into final reports.

Comments from patient advocates were half as likely to be incorporated compared to other stakeholder groups.

Percentage of Stakeholder Comments Incorporated Into ICER Final Evidence Reports



All comments: Industry, N=208; patient advocates, N=157; professional/provider societies, N=95

Research supported by Xcenda



ICER's Methods Exacerbates Disparities

- Largely reliant on RCTs that do not reflect subpopulations
 - The risk profile of an average person is likely to be a proxy closely aligned to someone white, middle aged and male.
- Uses a population perspective (averages) for its cost-effectiveness modeling framework
 - No consideration of genetic background, demographics, risk and co-morbidities.
- The weights of health states for translation into QALYs are undertaken in predominantly white populations
- The selection and construction of the 'domains' that make up quality of life tools were constructed by a small group of elderly white men twenty years ago in Switzerland

QALYs and Public Policy Implications

QALYs Have Historically Been Rejected by Policymakers

- The ACA explicitly prohibits PCORI from using the cost-per-QALY to determine effectiveness, and further restricts use in Medicare to determine coverage, reimbursement, or incentive programs.
- In 1992, HHS rejected Oregon's prioritized list of covered services for Medicaid citing the potential for violating the ADA due to use of QALYs and cost effectiveness.

Oregon Health Plan

“Oregon's plan in substantial part values the life of a person with a disability less than the life of a person without a disability. This premise is discriminatory and inconsistent with the Americans with Disabilities Act.

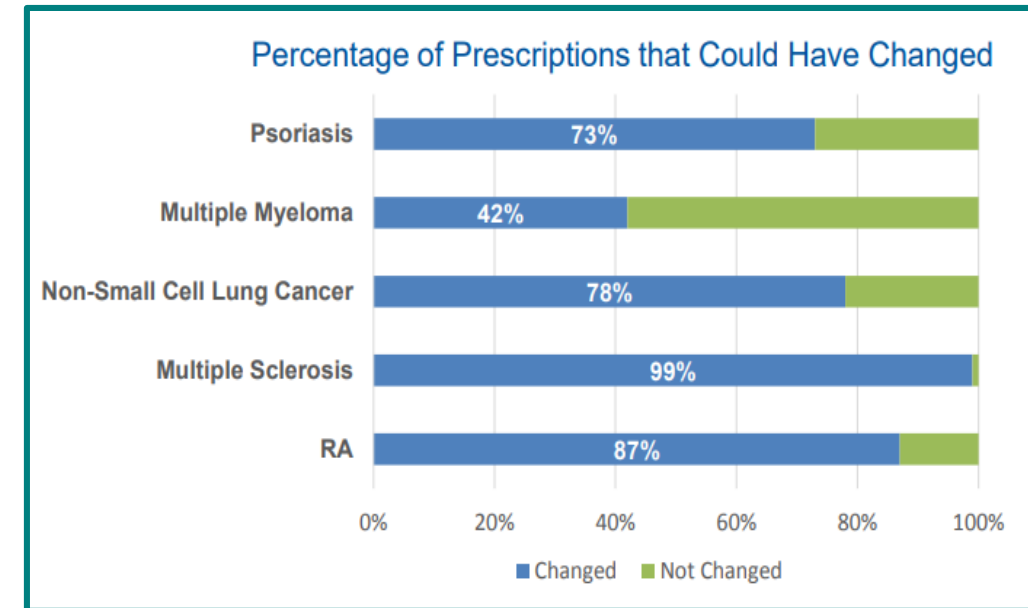
Given the outpouring of comments received by this department and the White House on this issue, I am confident in saying Oregon would have been sued if we had approved the waiver, preventing Oregon from implementing the plan for years. Accordingly, we requested revision of the proposal to remove factors impermissible under the Americans with Disabilities Act.”

– Louis Sullivan, HHS Secretary, Letter in the New York Times, Aug 13, 1992

Why do QALYs Matter? Medicaid Access to Care!

A significant number of patients in five disease areas would lose access to treatments they are currently on, which their doctors deemed best for them, if Medicaid began utilizing an ICER-based formulary.

- Between 42% and 99% of patients across five disease areas would be required to switch treatments if Medicaid used ICER's judgement to determine patient access.
- Essentially all Medicaid patients with MS would be forced to switch treatments, since ICER has deemed only one medication "high value" for MS, and it accounts for only .04% of prescriptions.
- 87% of Rheumatoid Arthritis prescriptions would change if Medicaid used an ICER-based formulary.

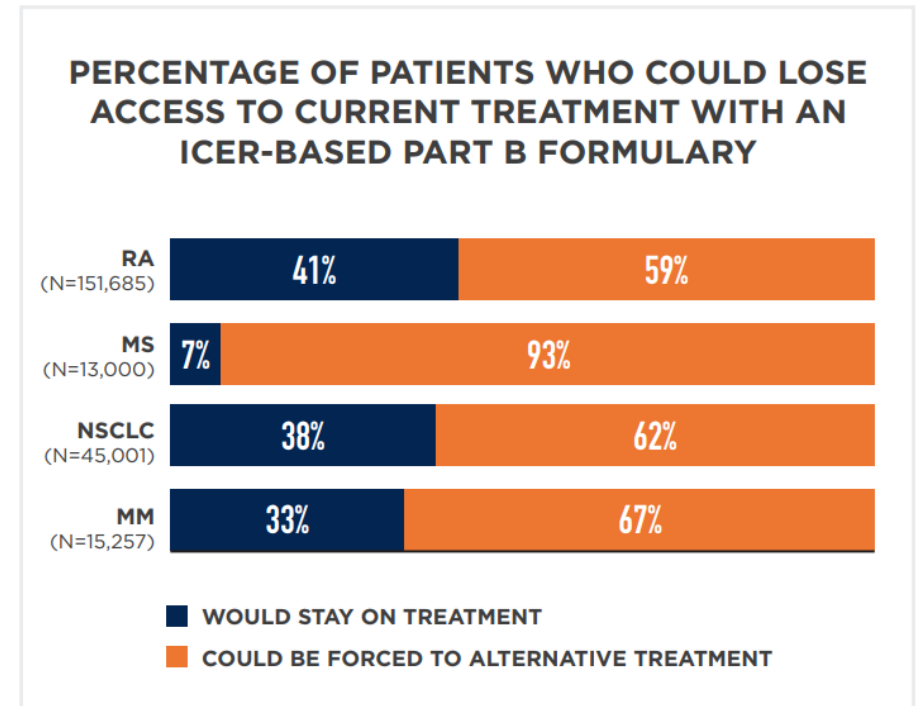


Why do QALYs Matter?

Medicare Part B Access to Care!

More than half of Medicare Part B beneficiaries in the selected disease areas would lose access to needed care if ICER's judgments were used as a government value standard.

- Between 55% and 62% of patients across four disease areas would be required to switch treatments if Medicare used ICER's judgement to determine patient access in Medicare Part B.
- The switch would most impact MS patients most significantly – nearly 93% of patients would lose access to the treatment their physician prescribed.



IPI: Experience in Other Countries

Worse Outcomes

For breast, colon, lung and prostate cancers, 5-year survival rates are higher in U.S. than those in Canada, France, Germany, Italy, Japan and the U.K.

Fewer Options

Almost 80% of cancer medicines reviewed by U.K. health officials between 2007 and 2014 had some form of access restriction.

Slower Access

U.S. patients have access to cancer medicines on average 2 years earlier than patients in other developed countries

News ▶ Health ▶ NHS

Miracle drug that could prolong this four-year-old's life 'too costly' for NHS

The one medication that could slow down Francesca's degenerative condition has been rejected as 'not cost effective' by drugs regulator

Cystic fibrosis sufferers denied life-prolonging drug by NHS

The maker of a costly treatment now licensed for sufferers as young as six is trying to strike a deal with the health service

See www.pipcpatients.org/access to learn more about other countries.



Developments in States

- The President’s budget invites states to “make drug coverage decisions that meet state needs.”
- CMS opened door to restricted coverage in their response to MA proposed waiver.
- New York has already endorsed using QALYs and ICER
- Massachusetts is considering policies to use QALYs and ICER
- California’s Legislative Analyst Office provided recommendations to consider New York’s model, which uses ICER.
- Oklahoma has referenced ICER’s QALY-based studies to impose prior authorization requirements
- Tennessee has a waiver proposal use use “cost effectiveness” to limit formularies, which could be based on ICER.

Federal Activities

- H.R. 3 references international prices from 6 countries and authorizes use of studies from groups like ICER to determine comparative effectiveness of treatments.
- The Senate has discussed how to “pay for value.”
- The administration supports an international pricing index.

ICER: Assessment of Sickle Cell Disease Treatments

Description of Prior ICER Activities on Sickle Cell Disease

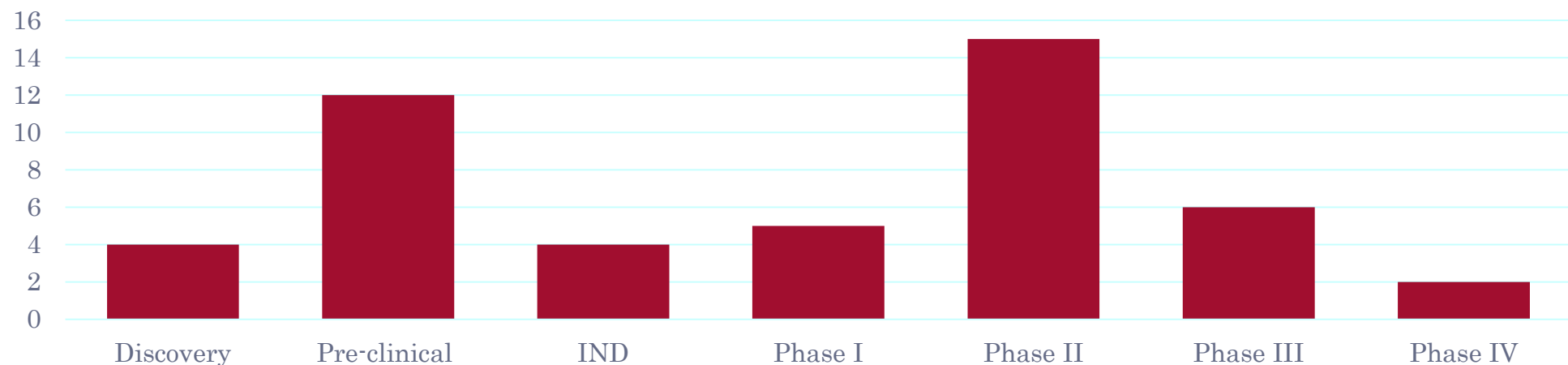
- ICER has developed a list of “key stakeholders”
 - See <https://icer-review.org/topic/sickle-cell-disease/>
- ICER has developed a scoping document and timeline to guide its assessment

Anticipated Points of Engagement on Sickle Cell Disease Assessment in Future

- Jan. 22-Feb. 19, 2020: Draft evidence report and comment period
- March 26, 2020: In-person meeting with stakeholders and voting members in Boston, MA
 - ICER’s voting panels will vote on “long-term value for money”
 - The voting panels do NOT include treating physicians or sickle cell disease patients
- April 16, 2020: Final report
 - ICER will provide a final assessment of the cost per quality-adjusted life year (QALY) of sickle cell treatments
 - ICER will use a \$100,000-\$150,000 per QALY benchmark for what is “cost effective”
- Stakeholder response

Sickle Cell Disease: Limited Therapeutic Options

- There are 4 FDA Approved Therapies for SCD
- There is potential for more therapeutics in the future
 - Rich Sickle Cell Disease Therapeutic Pipeline
 - There are 40+ therapeutics in development for SCD



Sick Cells: Elevating the Patient's Voice during the ICER Review



What We've Done:

- Engaged with ICER as a “Key Stakeholder”
- Submitted 95 letters from patients and community members during the initial Public Comment Period
- Led a four-part webinar series on value assessments and drug pricing
- Initiated the ICER Task Force in partnership with the SCDAA

Sick Cells: Call to Action

1. Take the “My Life with Sickle Cell Disease”: Patient and Caregiver Survey opening **TODAY** (January 16th)

<https://www.surveymonkey.com/r/mylifewithSCD>

2. Submit your story to ICER during the **Public Comment Period** (January 22nd through February 19th)



What Can You Do?

- Follow valueourhealth.org/sicklecell
- Take the “My Life with Sickle Cell Disease” Survey
- Share your story
 - Submit opinions to local newspapers
 - Write it down to share with ICER in next comment period
- Our next webinar will be on “Patient Group Interactions with ICER: Updates and Lessons Learned” led by engaged sickle cell disease stakeholders