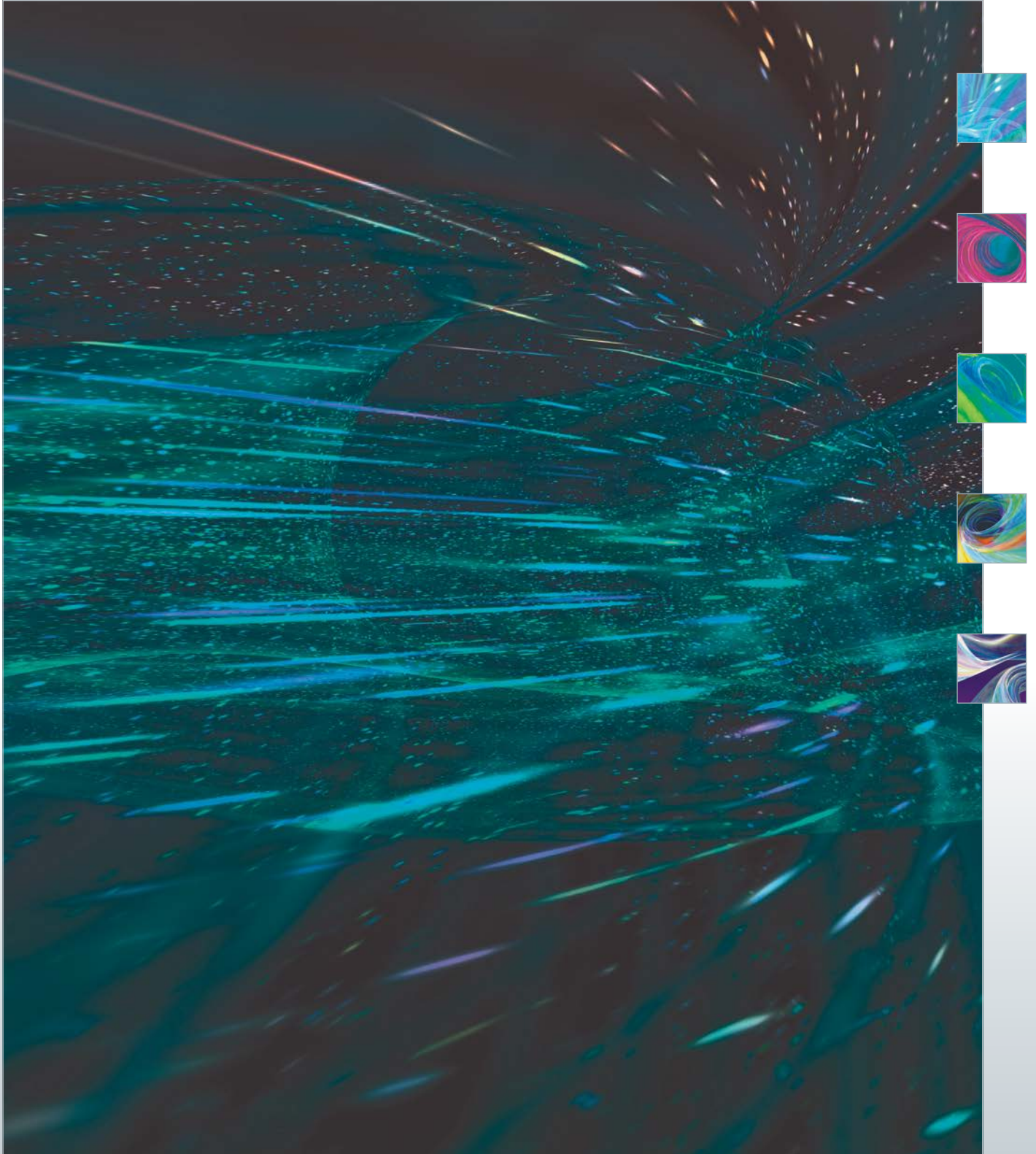


*Chronic Disease and Medical Innovation in an Aging Nation*

# The Silver Book<sup>®</sup>: Cancer

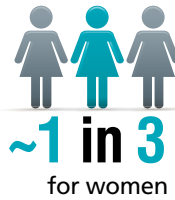


# The Silver Book<sup>®</sup>: Cancer

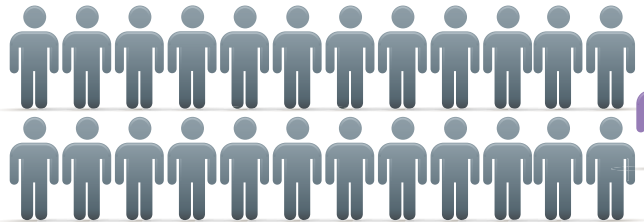
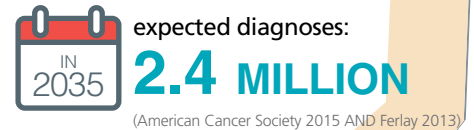
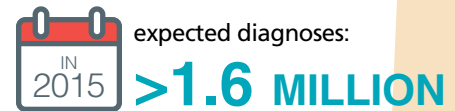
This year 1.6 million new cases of cancer are expected to be diagnosed, and 78 percent of those cases will be in Americans age 55 and older. Thankfully tremendous breakthroughs in personalized medicine and immunology offer much hope for those currently suffering, and for the 1 in 2 men and 1 in 3 women who will get cancer in their lifetime.

## Prevalence & Incidence

LIFETIME CHANCE OF GETTING CANCER: (Howlader et. al 2013)



NEW ANNUAL CANCER CASES:



Around  
**1 out of 25**  
U.S. citizens is a  
cancer survivor  
(American Cancer Society 2014)

PEOPLE AGE 55+ ACCOUNT FOR

**~78%**  
of all cancers cases

(American Cancer Society 2015)

## The Human Burden

In the U.S., **CANCER** accounts for:

**1 out of every 4 DEATHS**  
est. **589,430 DEATHS** expected in 2015

(Centers for Disease Control & Prevention 2013 AND American Cancer Society 2015)

Close to **1/3** of cancer survivors experience **LIMITATIONS IN THEIR ABILITY TO PERFORM ACTIVITIES** of daily living (Ekwueme et al. 2014)

Those that **experience pain**:

**59%** of cancer patients in active treatment

**33%** of survivors

**64%** with advanced/metastatic/terminal disease

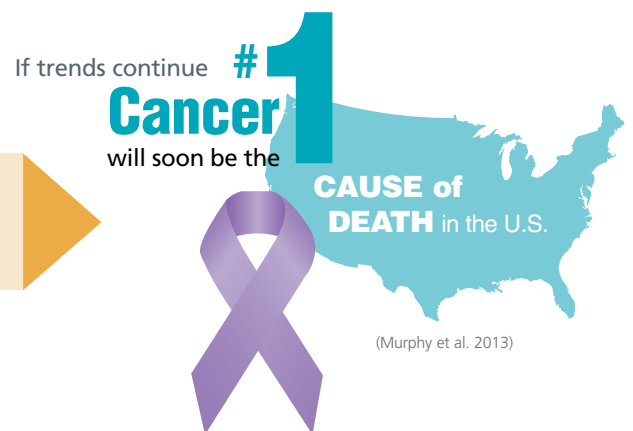
(Van den Beuken-van Everdingen 2007)

**Depression affects:**

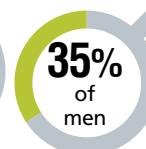
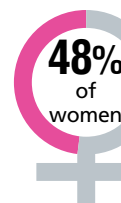


**15-25%**  
of cancer patients

(National Cancer Institute 2014)



Of those survivors employed at any time since their diagnosis,



**made changes in their work** because of their cancer

(Ekwueme et al. 2014)

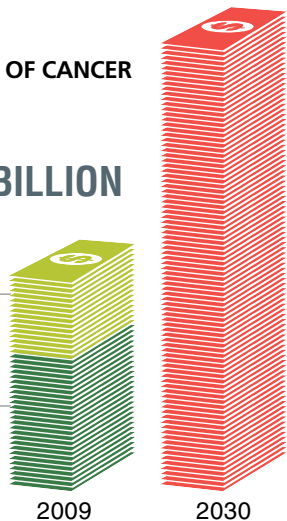
# The Economic Burden

## THE TOTAL COST OF CANCER

**\$216.6 BILLION**  
TOTAL

**\$86.6 BILLION**  
Direct medical costs

**\$130 BILLION**  
Indirect mortality costs



2009

2030

EXPECTED TO REACH  
**\$458 BILLION**

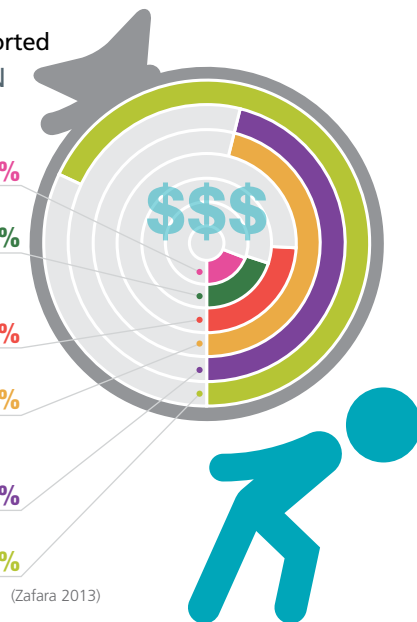
(National Heart, Lung, and Blood Institute 2013)

**1 in 12** Medicare fee-for-service dollars is **SPENT ON CANCER CARE** (Stockdale & Guillory 2013)

In one study, **42%** of participants reported a **SIGNIFICANT FINANCIAL BURDEN**

### As a result:

- partially filled a **19%** prescription
- took less than the **20%** prescribed amount of medication
- avoided filling **24%** prescriptions
- used their savings **46%** to help cover out-of-pocket expenses
- reduced spending **46%** on food & clothing
- cut back on **68%** leisure activities



(Zafara 2013)

# The Value of Innovation

THE 5-YEAR SURVIVAL RATE FOR **CANCER** has gone: **UP 40%** in the last **40 YEARS**  
(American Cancer Society 2014)



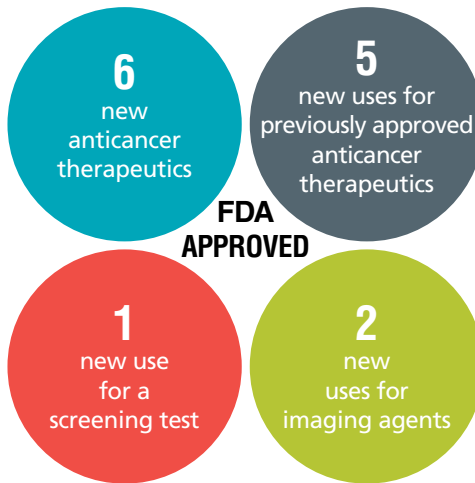
Since 1980, **83%** of **gains in life expectancy** for cancer patients have been attributable to new treatments (Sun et al. 2008)



Between 1998 and 2000, investments in **CANCER RESEARCH and DEVELOPMENT** has generated **23 million additional healthy years of life** and **\$1.9 trillion of additional social value** (Lakdawala 2010)



Close to **one-third** of all drugs in the biopharmaceutical pipeline **are for cancer**, with around **5,500 potential first-in-class cancer medicines in development** (Long & Works 2013)



(American Association for Cancer Research 2014)

## THE POTENTIAL VALUE TO U.S. SOCIETY FROM REDUCTION IN CANCER-RELATED DEATHS (Murphy & Topel 2006 and 2003)

**1%** reduction = **~\$500 BILLION** from **INCREASED QUALITY OF LIFE & PRODUCTIVITY** from longer lives  
cancer-related deaths

**10%** reduction = **~\$4.4 TRILLION** to current and future generations  
cancer-related deaths

# Policy

*In order to sustain medical innovation in the face of rising pressure for cost-containment, we need policies that encourage scientific progress that aligns with the evolving ways that research is conducted and care is delivered*

## Investing in Research & Development

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**Our nation must support basic and translational science that will lead to life-changing research advances by:**

- Increasing our investment in biomedical research at the National Institutes of Health
- Supporting public-private partnerships that facilitate innovative clinical trial designs and promote efficiency in drug development
- Improving clinical trial recruitment, selection, and retention best practices
- Accelerating development of improved diagnostic and drug development tools like validated biomarkers, patient-reported outcome measures, and next generation sequencing technology
- Developing better standards for data collection, sharing, and utilization by the research community that respect privacy and intellectual property

## Advancing Regulatory Science & Policy

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**The Food & Drug Administration must continue facilitating innovative approaches to drug development and review by:**

- Supporting the implementation of novel trial designs, and new mechanisms for analytical and clinical performance assessment such as adaptive trials, single-arm trials, master protocols, and the use of curated databases
- Promoting patient involvement in defining endpoints, outcomes, and benefit-risk assessments
- Employing expedited review pathways and coordinating review for companion diagnostics
- Preserving access to innovative high-quality diagnostic tests through appropriate review and approval
- Improving utilization of observational data generated through real-world use of interventions in supplemental indication applications, drug label revisions, and other pre- and post-market decision-making

## Transforming Reimbursement & Coverage

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**National reimbursement and coverage policies should incentivize high-quality, patient-centered, and coordinated care by:**

- Determining value and payment in cancer care by long-term benefits identified through engagement of relevant stakeholders that capture the complexity of targeted cancer tests and services
- Updating quality and performance measures through transparent procedures and multi-stakeholder engagement, taking into account clinical and patient-reported outcomes
- Applying comparative effectiveness research and health information technology to capture real-time outcomes that matter to patients
- Supporting innovative value-based payment and delivery models that incentivize patient-centeredness and care coordination
- Shifting cost-sharing away from the patient to reduce socioeconomic health disparities

## Providing Access to Quality Care

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**All patients should have access to patient-centered quality cancer care ensured by:**

- Using clinical decision-making tools developed through a transparent physician-driven process with patient input, that support individualized treatment decisions, and are incorporated into EHRs
- Requiring affordable coverage of clinically meaningful services and treatments and an adequate provider network in state health exchanges
- Providing cancer care planning, coordination services, and palliative care
- Assuring timely access to diagnostic tests
- Creating a universal HIT system that captures meaningful patient-reported outcomes, reports data in real time, and supports effective care transitions

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This volume of *The Silver Book*<sup>®</sup> supported by an educational grant from:



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