COSTS OF CANCER CARE

What Clinicians Can Do

Winter Lung, 2017

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Disclosures

Advisory Committee	AstraZeneca Pharmaceuticals LP, Celgene Corporation, Genentech BioOncology
Consulting Agreement	Roche Laboratories Inc
Contracted Research	Celgene Corporation

CANCER CARE IN THE US

1. Costs continue to escalate exponentially
2. There are no mandated quality standards
3. Fee-for-service system rewards overutilization
4. Aggressive end-of-life care is costly, potentially harmful and inconsistent with patients' wishes
5. Drug prices are unsustainable

HIGH CANCER CARE COSTS
What is in the clinicians' control

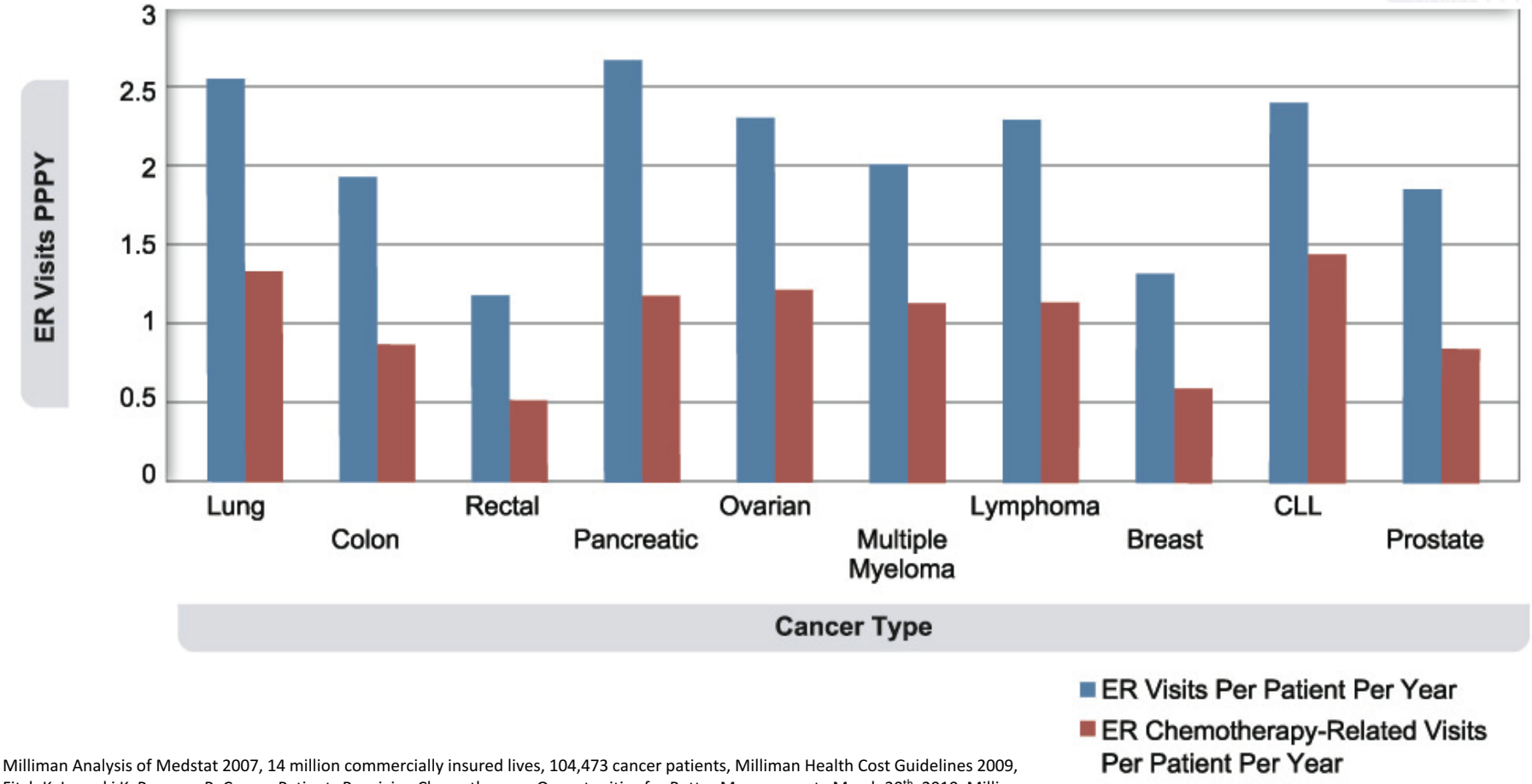
1. Evidence-based Care
2. End of Life Care
3. ED Visits, Admissions and Readmissions
4. Clinical Pathways
5. Care Coordination

CLINICAL CARE IS INCONSISTENT

- Up to 1 in 3 people treated with chemotherapy do not receive a treatment regimen that is consistent with current medical evidence and best practices
- Patients are often hospitalized because of side-effects which could be avoided by using less toxic treatment regimens and appropriate supportive care
- Patients frequently receive tests and treatment that they do not need, putting them at risk of side-effects, and imposing an additional care burden and cost

J Clin Oncol 2011, 30:142-50; J Clin Oncol 2012, 30:3800-09; J Clin Oncol 2006, 24:626-34; Oncologist 2011;16:378-87; J Clin Oncol 2002 20:4636-42. JACR 2012, 9:33-41; JAMA 2013, 309:2587-95; J Clin Oncol 2013; 31:epub. Barr et al. J Oncol Pract. 2011;7: 2s-15s.

ER use by chemotherapy patients



Milliman Analysis of Medstat 2007, 14 million commercially insured lives, 104,473 cancer patients, Milliman Health Cost Guidelines 2009, Fitch K, Iwasaki K, Pyenson B. Cancer Patients Receiving Chemotherapy: Opportunities for Better Management. March 30th, 2010, Milliman

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Analysis

- 391 oncology patients presented to the ED between 01-01-14 to 05-31-14
  - 90% were admitted
  - 6.74 average length of stay
  - 62% patients arrived btw 9-5P

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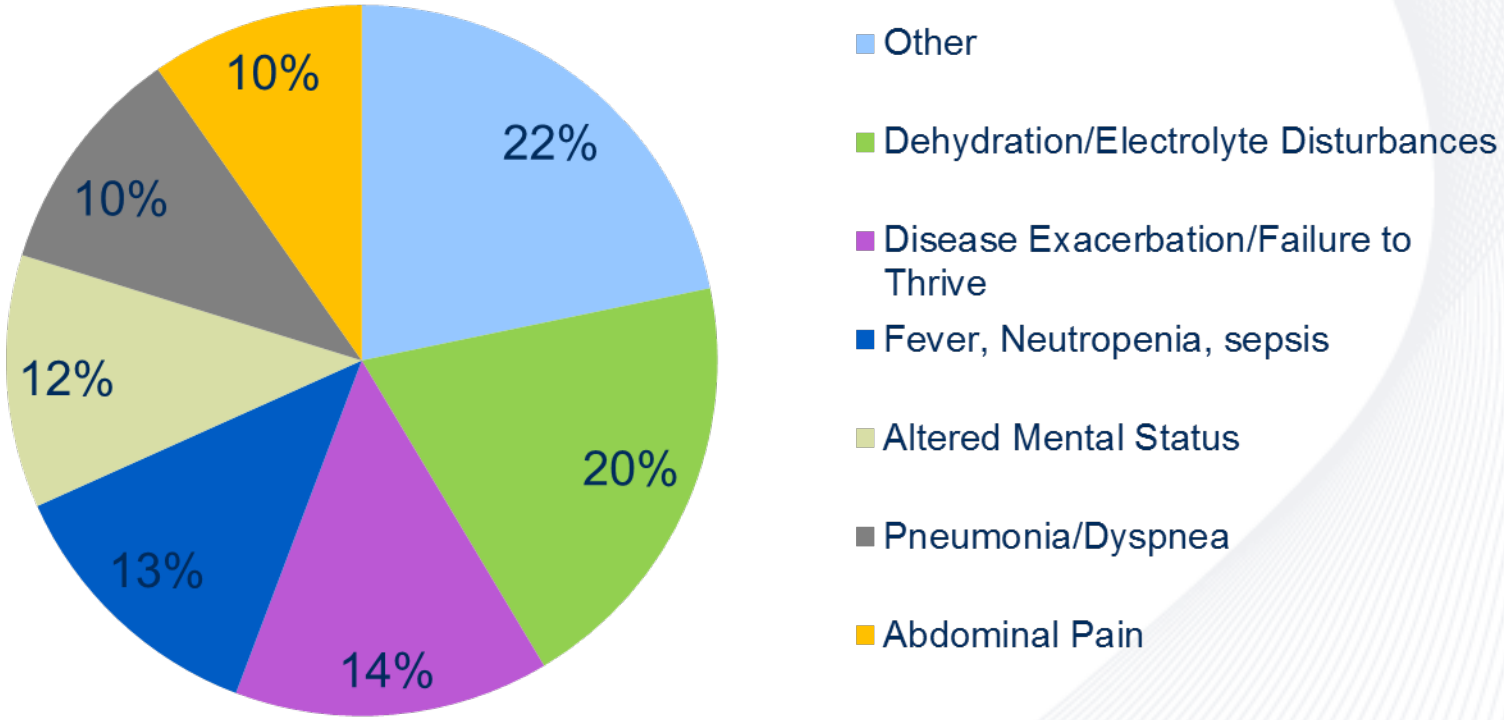
**List of Oncology patients presenting to the ED obtained by YNHH Decision Support*

Oncology Presentation Diagnoses at ED



At least 50% of these presentations could have been addressed in the ambulatory setting including but not limited to dehydration, abdominal pain and failure-to-thrive.

END OF LIFE CARE

- Patients with metastatic solid tumors admitted to an acute care hospital die on average of 3.4 months after discharge, with 75% of patients deceased by one year (Wisconsin)
- Most patients state that they prefer to die at home and that quality of life is their priority
- Despite this, among 2009 Medicare beneficiaries with cancer:
  - 80% were hospitalized within 90 days of death
  - 27% were admitted to the ICU in the last month of life
  - 20% transitioned to hospice in their last 3 days of life

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Teno J et al, JAMA 309:470-7, 2013

Costs of End-of-Life Cancer Care

Month before death	Mean total cost, $	Mean inpatient cost, $ (%)	Mean hospice cost, $ (%)	Mean outpatient service cost, $ (%)	Mean outpatient chemotherapy cost, $ (%)
6th	7834	1785 (23)	28 (0)	3849 (49)	2172 (28)
5th	9230	3269 (35)	61 (1)	3751 (41)	2149 (23)
4th	10,051	4087 (41)	95 (1)	3762 (37)	2107 (21)
3rd	10,362	4646 (45)	173 (2)	3692 (35)	1852 (18)
2nd	11,469	6356 (55)	435 (4)	3242 (28)	1437 (13)
Last	25,261	20,559 (81)	2464 (10)	1632 (6)	606 (3)

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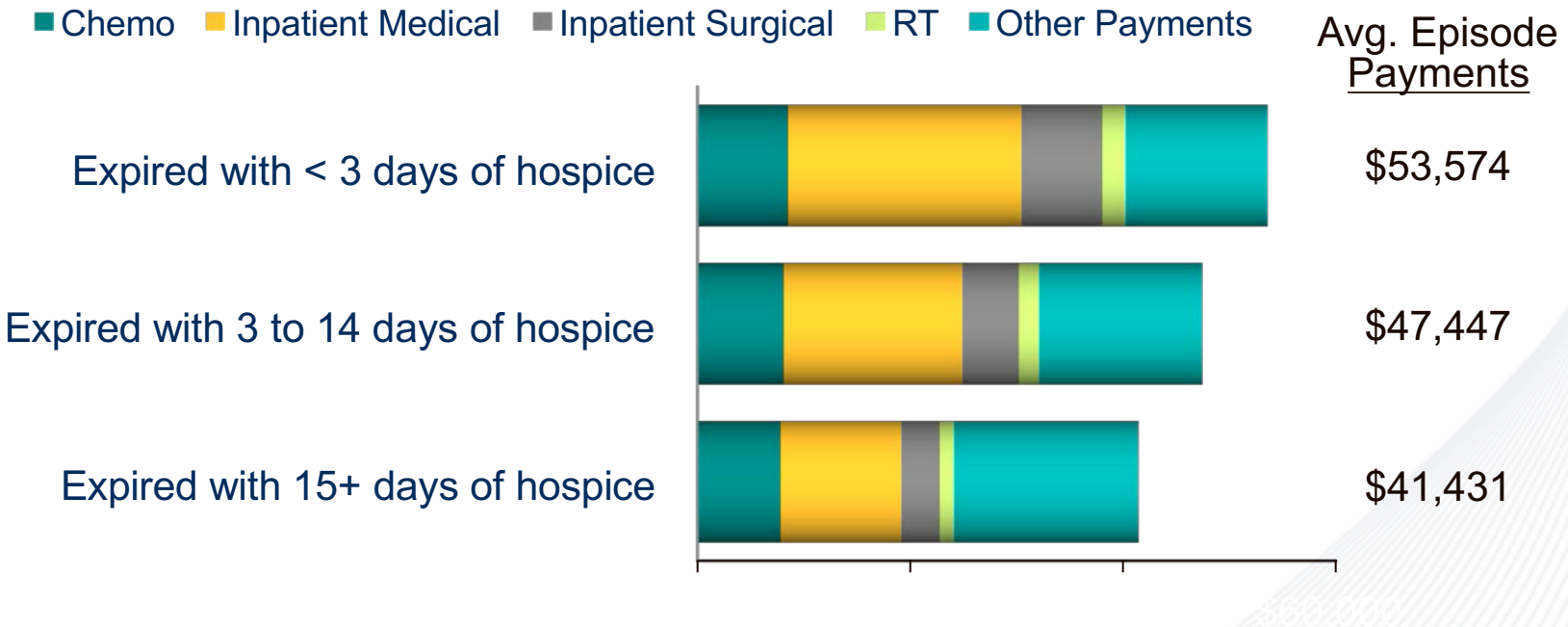
Source: Innovus

Hospice use and end-of-life spending

Distribution of Medicare spending for AMC chemotherapy episodes



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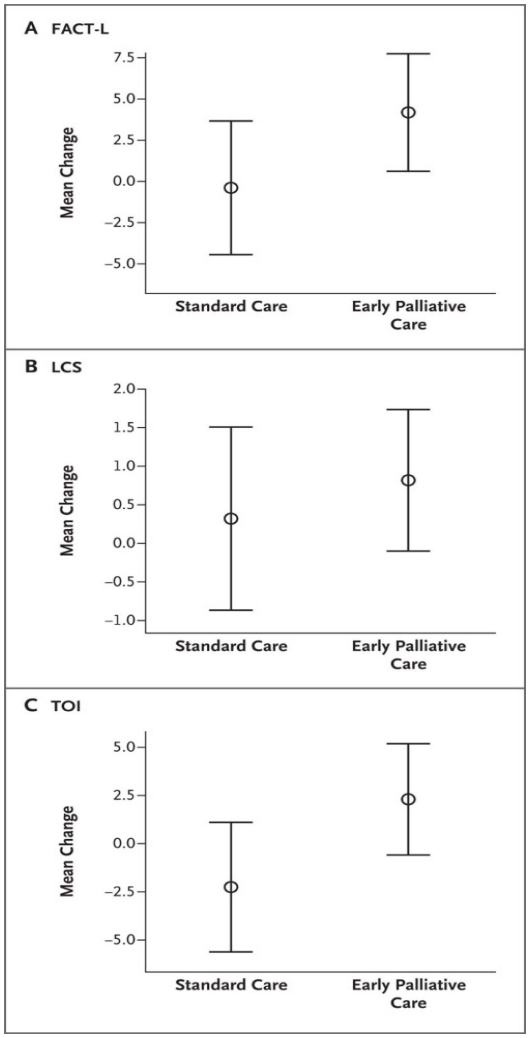
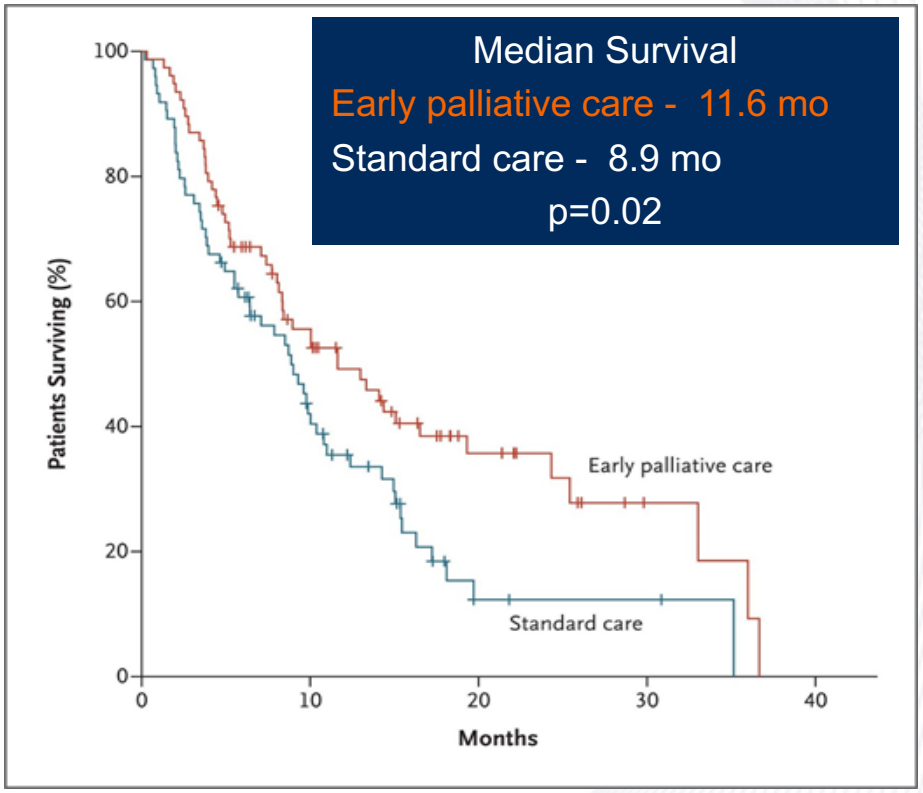
AGGRESSIVE INTERVENTIONS WITHIN 30 DAYS OF DEATH AMONG SMILOW LUNG CANCER PATIENTS

	No. of patients	% All patients
Advanced Lung Study Population	118	
At least one aggressive intervention	67	57%
Chemo	29	25%
ICU Stay	25	21%
Aggressive Surgery	5	4%
Aggressive Radiation	32	27%
Hospitalization	79	67%
Readmission	26	22%
Palliative Care (PC) Consult		29%
	No. of patients	% Hospitalized patients
Hospitalized Patients	79	
Average LOS	12 d	N/A
Died in hospital	47	59%
Admitted to hospice before death	18	23%
RI that dropped <40	68	92%

Zhang B., Adelson K., Velji S., Rimar J., Longley P., Keane B., Chiang A., Lilenbaum R. ASCO Quality Care Symposium 2014

EARLY PALLIATIVE CARE





- Patients receiving early palliative care had less aggressive care at the end of life but longer survival.

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Temel JS et al. NEJM2010

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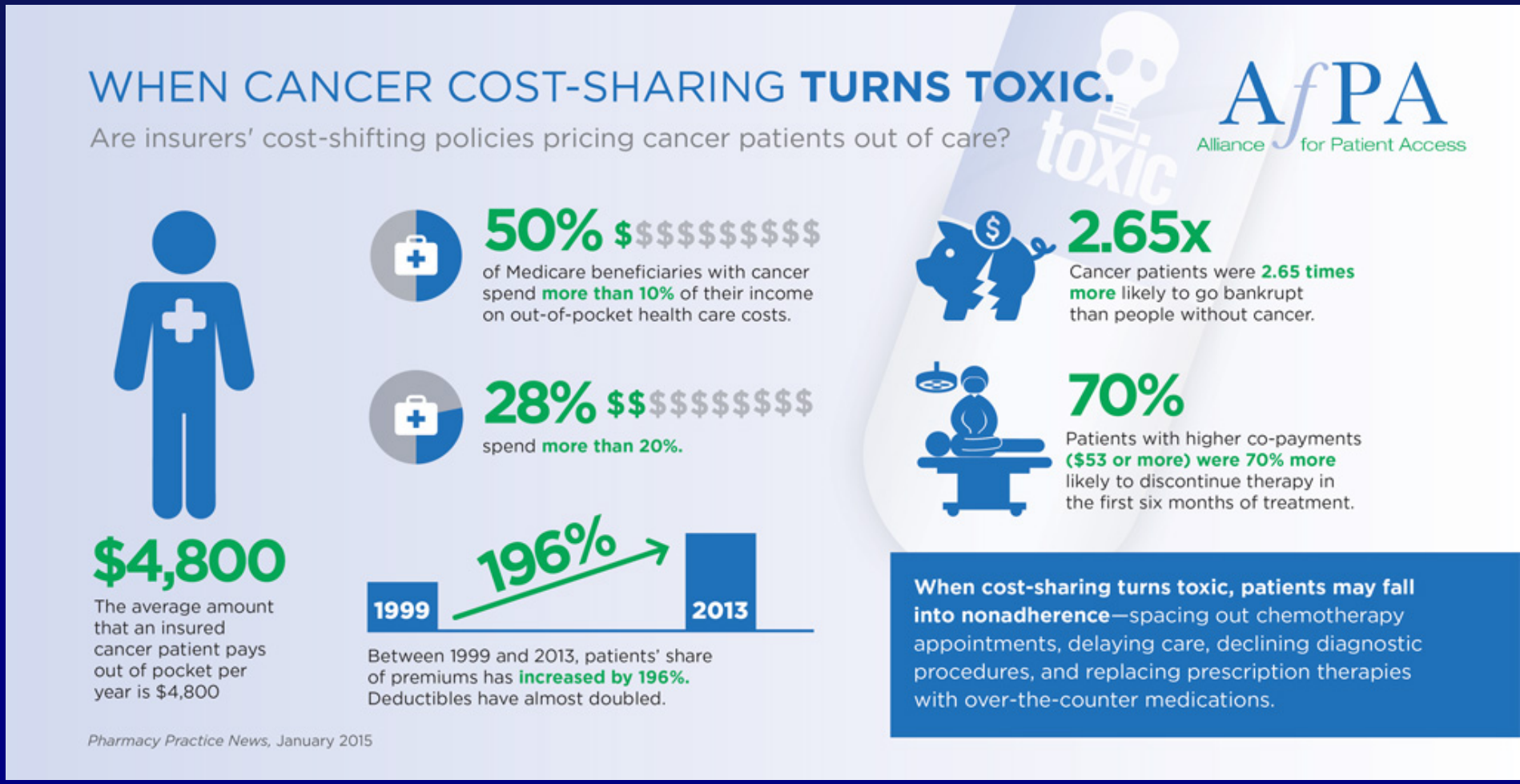
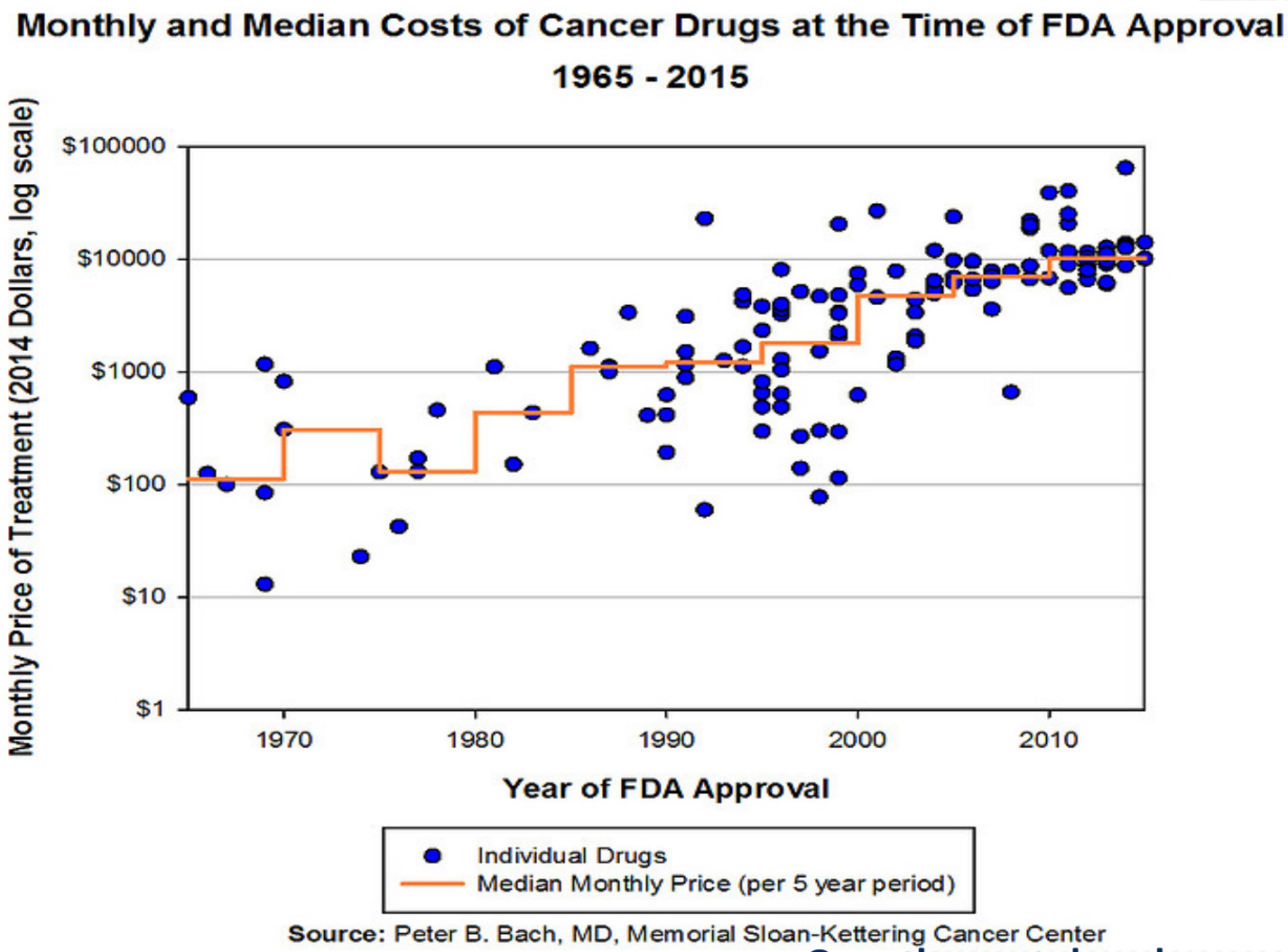


DRUG PRICES



Source: Peter B. Bach, MD, Memorial Sloan-Kettering Cancer Center

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Over the past decade, monthly costs for new anticancer drugs have more than doubled, from $4,500 to$10,000

FINANCIAL BURDEN TO PATIENTS

- An increasing proportion of the financial burden of cancer-care has shifted to patients.
- Out of pocket expenses can reach 20% to 30% which may result in $20-30,000 a year for one drug

2.65 x risk of bankruptcy

45% are non-adherent

Ramsey et al, Health Affairs 2013

“At Memorial, we are not going to…”

SECTIONS HOME SEARCH

The New York Times

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In Cancer Care, Cost Matters

By PETER B. BACH, LEONARD B. SALTZ and ROBERT E. WITTES OCT. 14, 2012

“At Memorial Sloan-Kettering Cancer Center, we recently made a decision that should have been a no-brainer: we are not going to give a phenomenally expensive new cancer drug to our patients. The reasons are simple: The drug, ziv-aflibercept, has proved to be no better than a similar medicine we already have for advanced colorectal cancer, while its price — at $11,063 on average for a month of treatment — is more than twice as high.”

The Clinical Pathways Value Proposition

Pathways Offer Multiple Benefits

Ensures Adherence to Guidelines

Pathways built on guidelines, therefore adherence establishes baseline for care quality

Accounts for Cost

Pathways developed through an evaluation of guidelines to determine which regimen is most effective, least toxic, and – all else equal – least costly for a particular diagnosis

Reduces Care Variation

Target compliance rate ensures majority of patients receive care on optimal pathway

Enables Comparative Outcomes Assessment

Allows benchmarking of outcomes over time to identify optimal pathway

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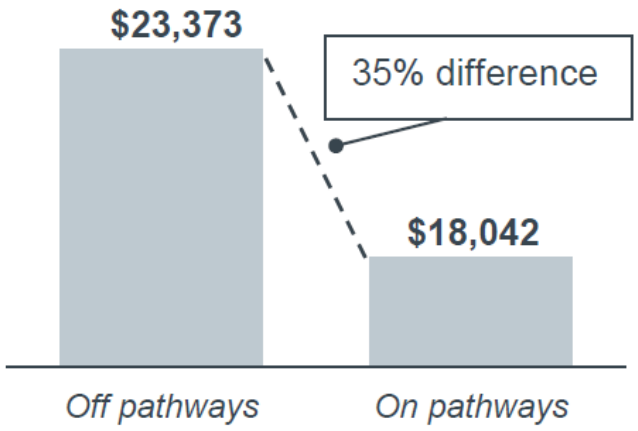
Source: Oncology Roundtable interviews and analysis.

Significant Cost Savings in Multiple Categories

Majority of Savings Accrued Through Lower Drug Costs

Savings per Patient

Annual Outpatient costs for Non-Small-Cell Lung Cancer



12-Month Average Costs By Category

Charge Category	On Pathway (n = 1,095)	Off Pathway (n = 314)
Acute Care Visits	$1,124	$1,060
Chemotherapy	$11,839	$18,762
ESAs[1]	$1,011	$1,867
CSFs[2]	$1,867	$2,951

Study in Brief: Level I Pathways[3] and Aetna

- Annual outpatient cost savings
- Non-small-lung cancer patients treated with a level I pathways model

1) Erythroposis-stimulating agents.
2) Colony Stimulating Factors.
3) Now known as Value Pathways.

Source: Neubauer M, et al., "Cost Effectiveness of Evidence-Based Treatment Guidelines for the Treatment of Non-Small-Cell Lung Cancer in the Community Setting," *Journal of Oncology Practice*, 2010, 6:12-18.

New Payment Models

Confronting a Changing Paradigm: The Evolution of Incentives for Providers

	Fee for Service	DRG/Quality Cost Incentives	Accountable Care
Patient Volume	▲	▲	▼
Length of Stay	▲	▼	▼
Ancillary Testing	▲	▼	▼
Health Care Environmental Paradigm	• System formation and expansion, market consolidation • Volume driven primary and specialty care	• Continued expansion • Emergence of quality and safety processes and metrics • Increased transparency on pricing and outcomes	• Improve the individual experience of care • Improve the health of populations • Reduce the per capita costs of health care • Appropriate utilization

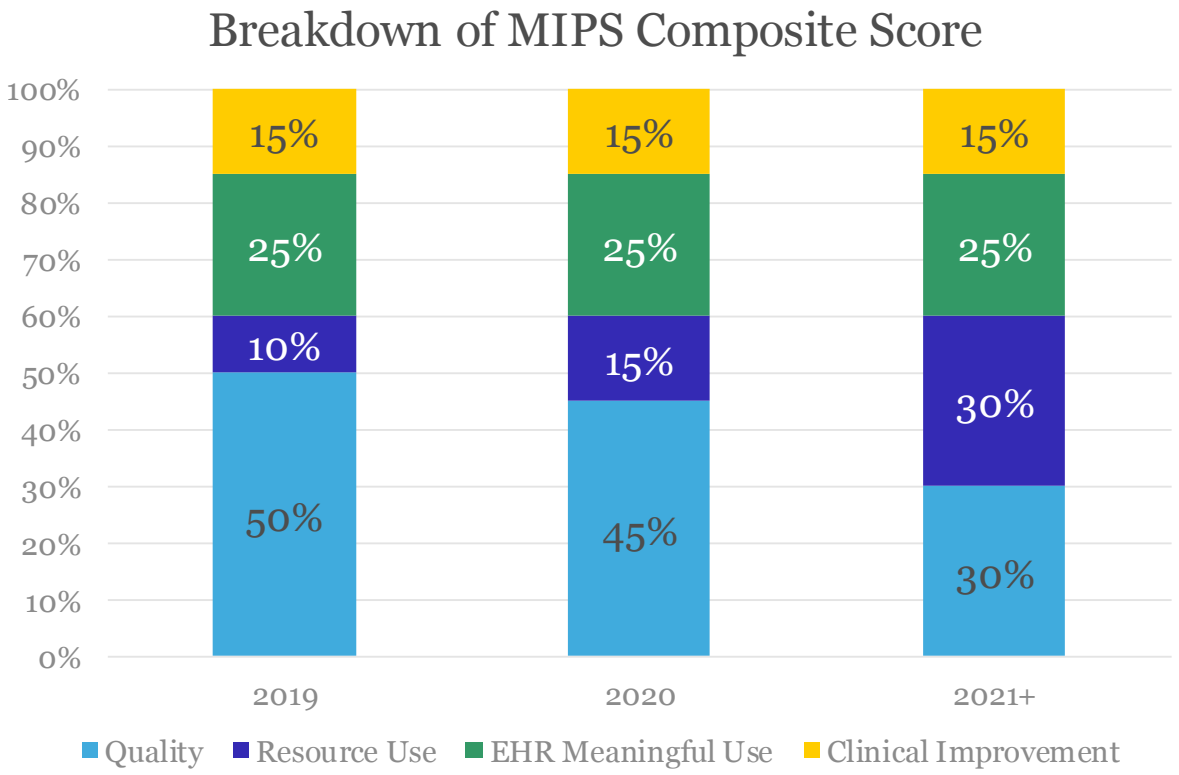
▲ Up
▼ Down

Source: http://www.dartmouth-hitchcock.org/about_dh/new_reimbursement_models.html

In MIPS, Payment Adjustments Based on Composite Score including Quality, Resource Use, EHR & Clinical Improvement Activities

Physician payment adjustments are based on composite scores derived from 4 categories; weighting changes over time

Year	% of Payment at Risk
2019	4%
2020	5%
2021	7%
2022+	9%



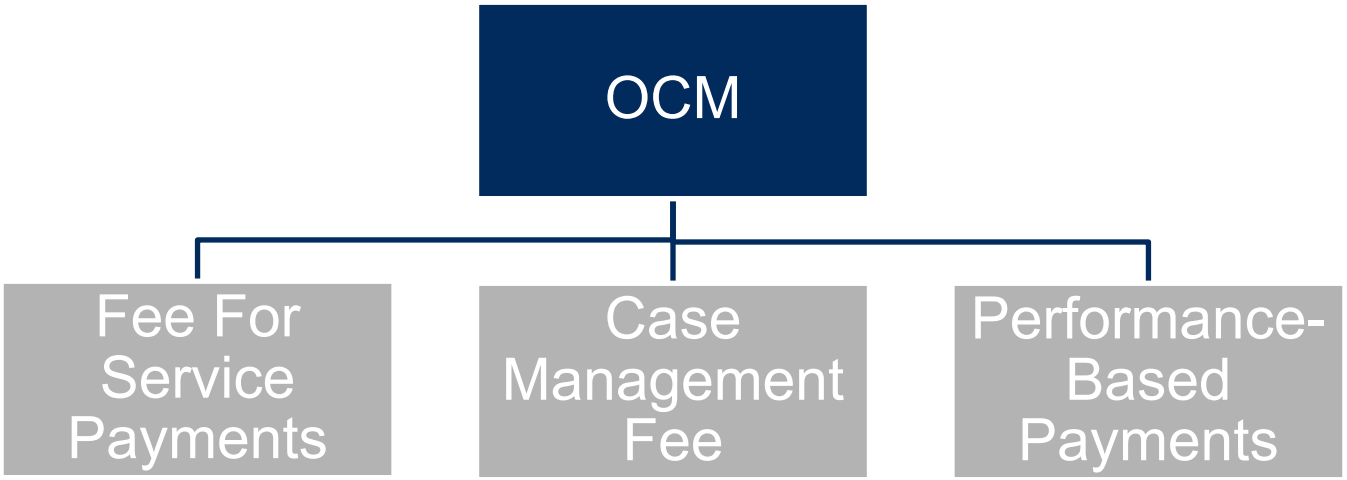
Resource use component evolves from 10% in 2019 to 30% in 2021 and beyond, unclear if the resource component will influence physician prescribing behavior.

CMMI - OCM

- The Oncology Care Model (OCM) is a new payment model, which encourages practices to improve care and lower costs through an episode-based payment model that incentivizes high-quality, coordinated care

- OCM incorporates a two-part payment system, including a monthly per-beneficiary-per-month (PBPM) payment for the duration of the episode and the potential for a performance-based payment for episodes of chemotherapy care

OCM is a value-based program that maintains FFS payments, while also rewarding quality improvement



Infrastructure for Value Care

- Robust outpatient Palliative Care presence
- Dedicated urgent care clinic with extended hours
- Clinical Pathways
- Communication training in goals of care
- Care Management