

From Hope to Cures: The Value of Biopharmaceutical Innovation

**National Foundation for Women Legislators Annual Meeting
September 12, 2015**

Tara Ryan Vice President, State Government Advocacy



HIV/AIDS: Then & Now

Then:
1980's

HIV / AIDS PATIENTS WERE SUFFERING AND DYING

In the early years of the AIDS epidemic before ART was available, the median **survival after an AIDS diagnosis was measured in weeks to months** and patient care was confined to diagnosing and treating a complex array of opportunistic infections and AIDS-related types of cancer.

The New York Times

September 15, 1989

AIDS TREATMENT COSTS PUT AT \$5 BILLION A YEAR

"We have got to get our act together now because the medical system is going to be crushed in two years"

Daniel Hoth

Director of the Division of AIDS
National Institute for Allergy and Infectious Diseases

The Washington Post

June 13, 1988

THE BIG DEAL ABOUT AIDS

*public health experts estimate the AIDS deal will **reach total annual costs of \$66.5 billion by 1991** - a figure that could bankrupt our health care system.*

NOW

ONGOING INNOVATION HAS BROUGHT DOWN THE DEATH RATE BY 83%. LIVES ARE DRAMATICALLY LONGER AND BETTER

In stark contrast to the early and mid-1980s, if a **person aged 20 years is newly infected with HIV today** and guideline recommended therapy is initiated, researchers can predict by using mathematical modeling that this person **will live at least an additional 50 years**—that is, a close-to-normal life expectancy.

Remember HIV?.... thanks to a wave of new discoveries that came both from academic centers and the pharmaceutical industry, the HIV crisis was transformed into a stable condition which is managed very differently by society where good drugs are available. They are controlling the disease, and society has been saving an enormous amount of money as a result of these innovative drugs by providing better care out of hospitals.

Hervé Hoppenot
CEO, Incyte

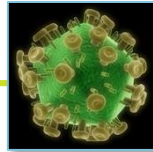
We used to think HIV costs would overwhelm us....but we figured it out and let drug development progress.

Ira Klein, M.D.
M.B.A., FACP, Aetna

Medicines Are Transforming the Treatment of Many Diseases

HIV/AIDS

In the last 2 decades, advances in treatment have contributed to a nearly 85% decline in death rates and transformed the disease from an acute, fatal illness to a chronic condition.



Cystic Fibrosis

New treatments targeting both the symptoms and root cause of the disease have contributed to improvements in quality of life for patients as well as increases in life expectancy.

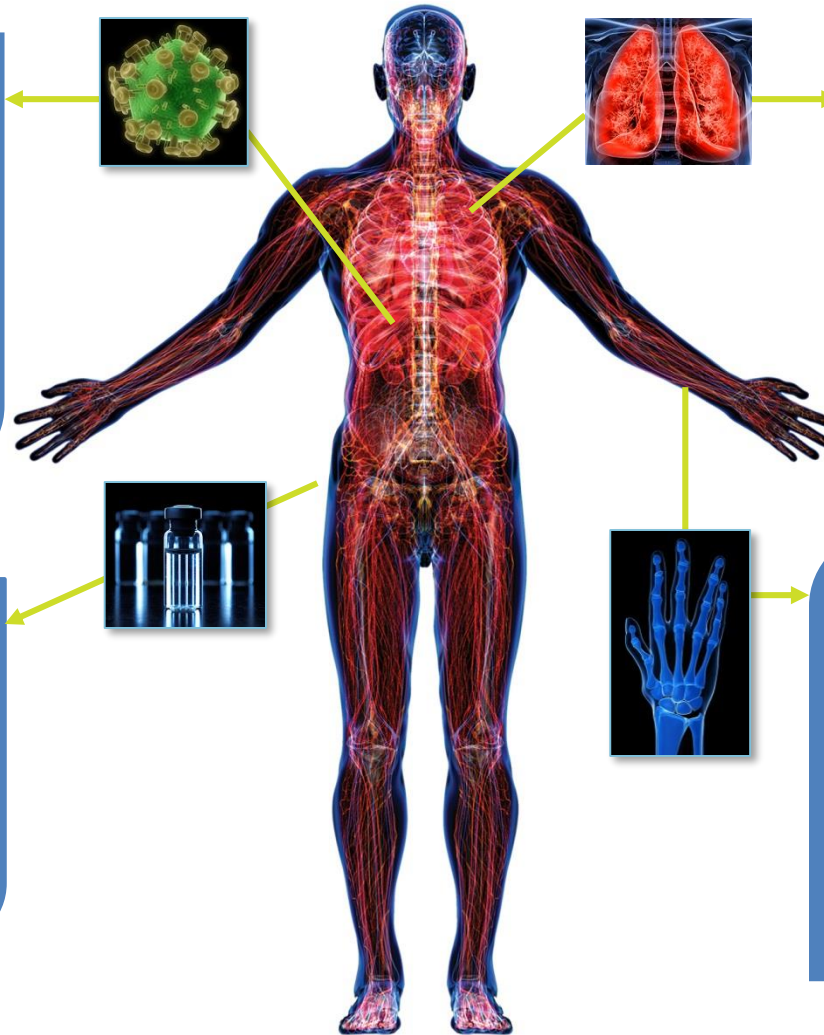
Cancer

New therapies have contributed to a nearly 22% decline in cancer deaths since the 1990s. Today, 2 out of 3 people diagnosed with cancer survive at least 5 years.



Rheumatoid Arthritis (RA)

Therapeutic advances have transformed the RA treatment paradigm over the last 20 years, shifting from a focus on symptom management to now aiming for slowed disease progression and even disease remission.



The Challenge of Developing New Treatments & Cures



On average, it takes more than

10 Years

for a new medicine to go through the entire research and development process.

ONLY **12%**

of drug candidates that enter clinical testing are **APPROVED FOR USE BY PATIENTS.**



AND THE AVERAGE COST

to develop a new medicine has increased to

\$2.6 Billion

MORE THAN

500

new medicines have been approved by the FDA since 2000.



7,000

medicines are in clinical development around the world today.

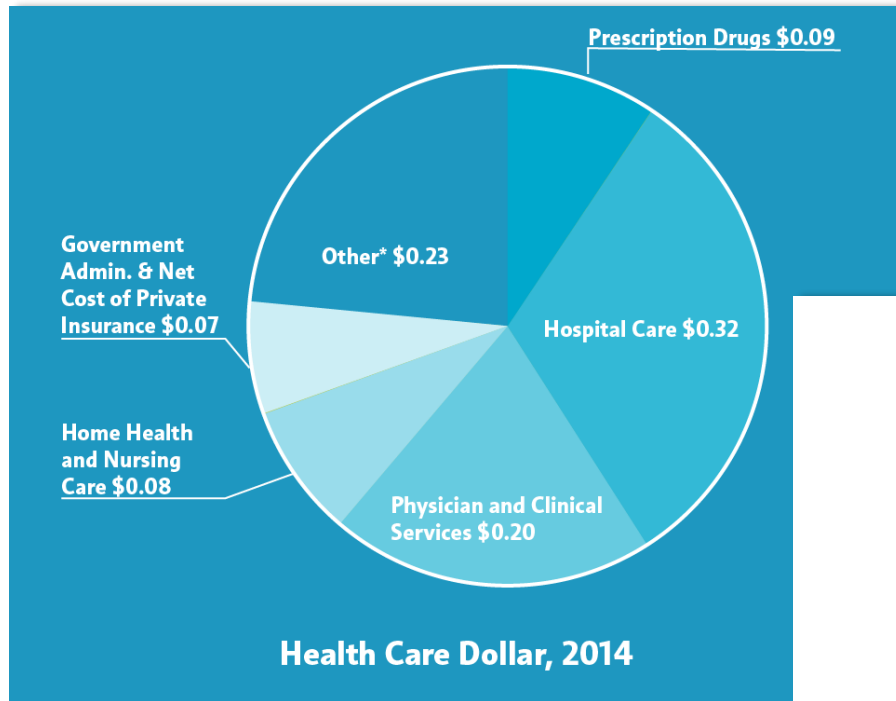


Yet spending on retail prescription medicines accounts for just

10%

OF U.S. HEALTH CARE SPENDING.

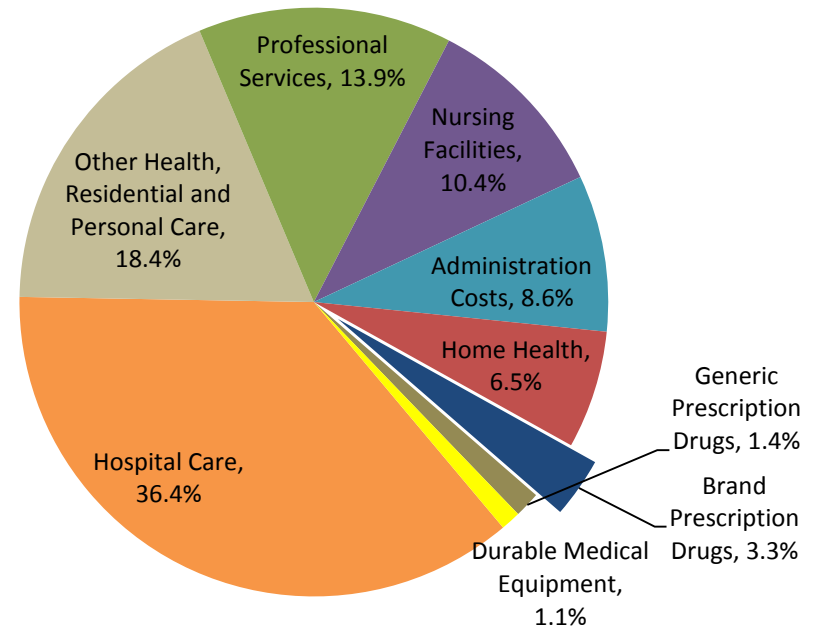
Retail Spending on Prescription Medicines Is a Small Share of Health Care Spending



US Health Care Spending

US Medicaid Spending

Medicaid Spending, 2013



Curbing Health Care Costs

If all non-adherent patients with diabetes were to become adherent,

341,000

hospitalizations



699,000

emergency room visits

COULD BE AVOIDED ANNUALLY, RESULTING IN
NEARLY \$5 BILLION OF MEDICAL SAVINGS.



As more hepatitis C patients receive the newest generation of medicines with
cure rates of more than 90%,
WE CAN EXPECT TO SEE A DECLINE IN THE COST OF TREATING PATIENTS.

Average health care costs for a patient
battling liver cancer

\$112K
PER YEAR



Average cost for a patient who may
need a liver transplant

\$500K

THE NEED FOR CONTINUED DEVELOPMENT OF NEW TREATMENTS IS CRITICAL.

In the fight against Alzheimer's disease, a new medicine that
DELAYS THE ONSET OF THE DISEASE BY FIVE YEARS WOULD SAVE
\$367 billion in health services.



National Foundation for Women Legislators Conference

Oklahoma City, OK
September 12, 2015

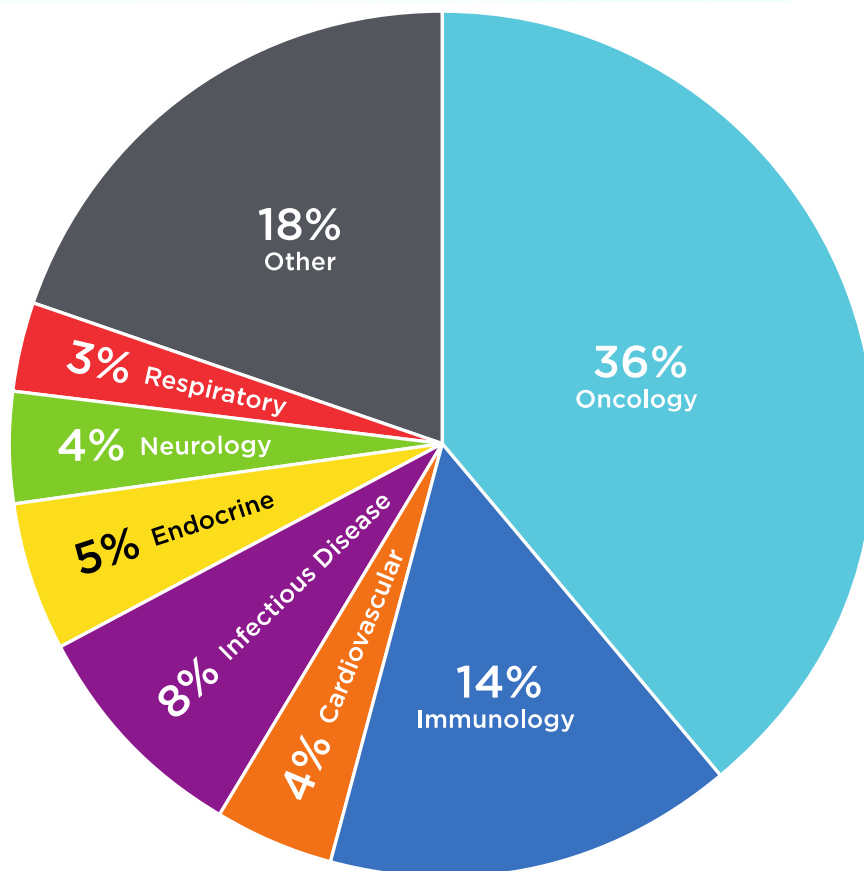
BIOPHARMACEUTICAL RESEARCH CONTINUUM



The entire continuum is interconnected and any policy change to one segment will inevitably impact the entire continuum

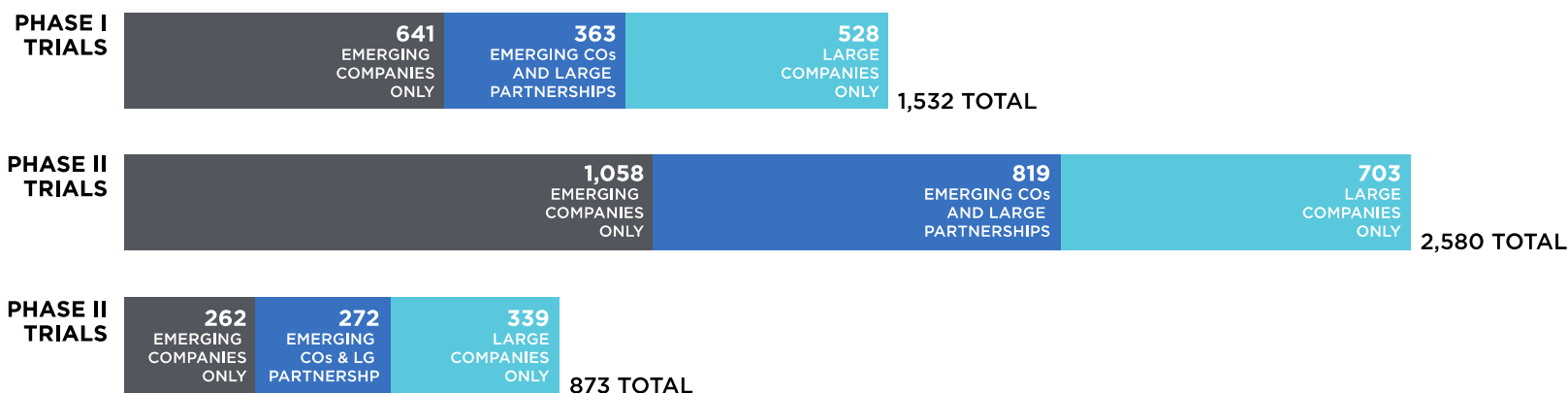
EMERGING COMPANY CLINICAL PIPELINE

- Oncology accounts for the highest percentage of clinical pipeline and accounts for the highest level of funding from VCS, IPOS & FOPOS.
- The pipeline for orphan (rare diseases) in emerging companies contains 484 clinical trials programs, of that 44% are in partnership with other companies.



Source: *Emerging Therapeutic Company Investment and Deal Trends 2005-2014*, Biotechnology Industry Organization (BIO), June 2015

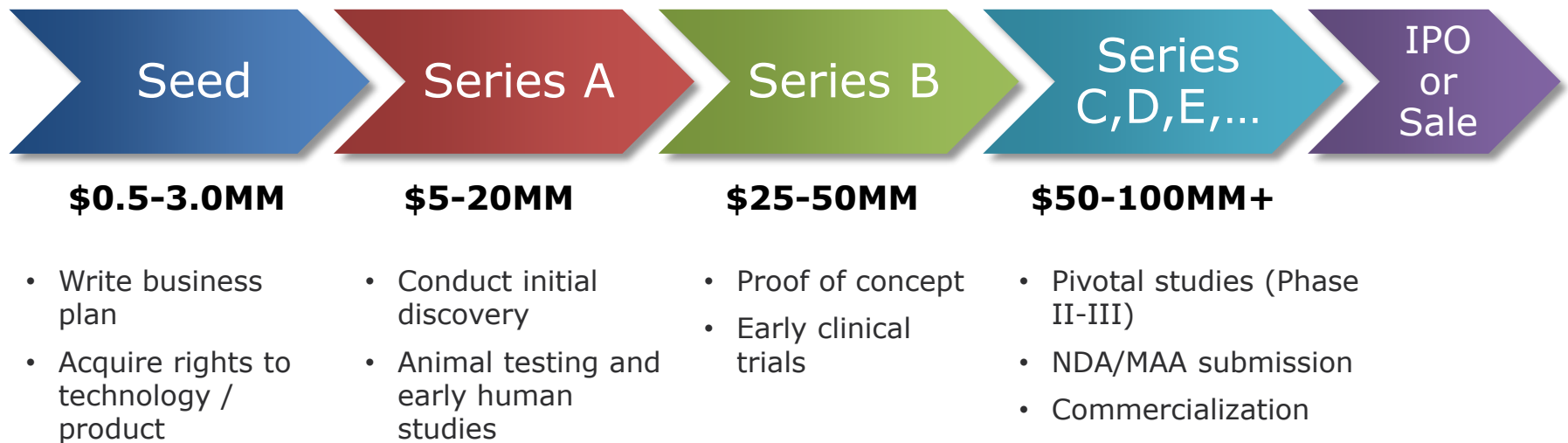
EMERGING COMPANY CLINICAL PIPELINE



- 69% of global pharmaceutical pipeline are with emerging companies
- 43% of that pipeline is in partnerships with other biopharmaceutical companies

Source: *Emerging Therapeutic Company Investment and Deal Trends 2005-2014*, Biotechnology Industry Organization (BIO), June 2015

EMERGING COMPANIES: NEED FOR FINANCING

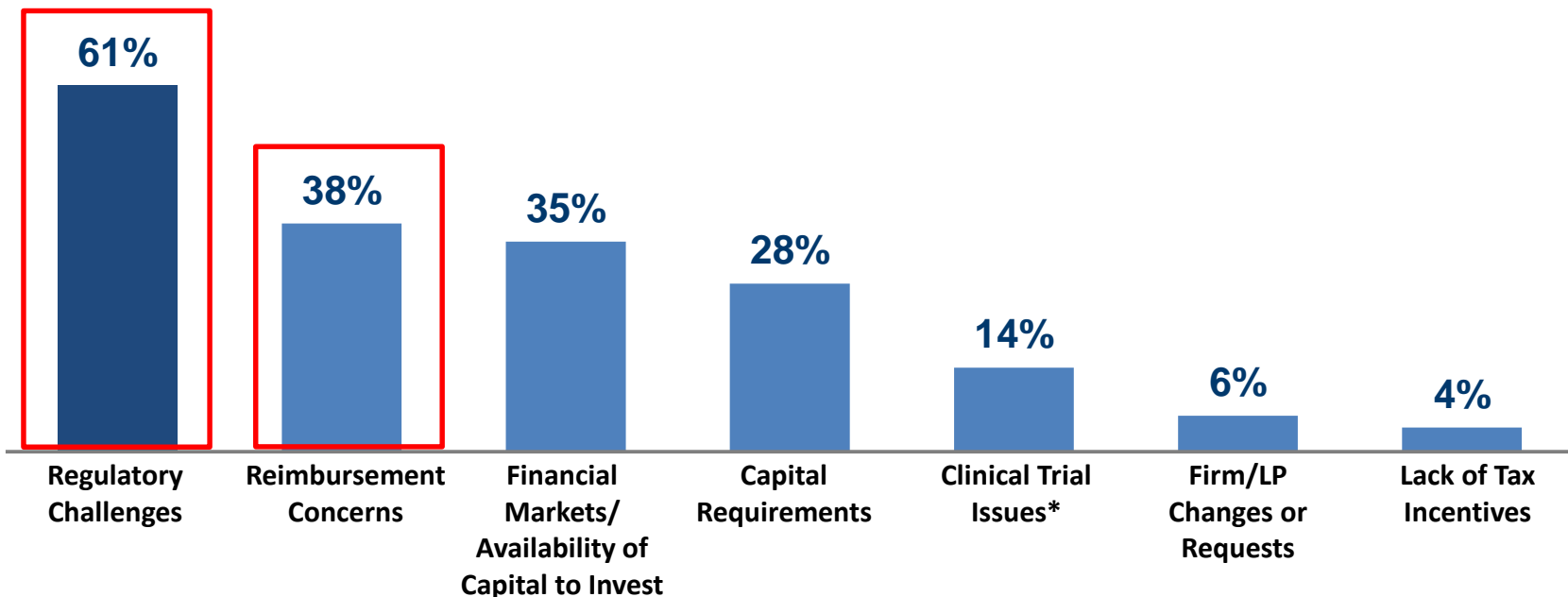


Must Demonstrate Progress To Raise Next Round Of Money

VENTURE CAPITALISTS: REASONS FOR NOT INVESTING

NVCA Survey of Life Sciences Venture Capital Investors

% of Respondents **Factors Cited as Having Highest Impact**



* Unrelated to Regulatory Challenges.



From Hope to Cures: The Value of Biopharmaceutical Innovation

Patient Engagement

Identify When to Engage



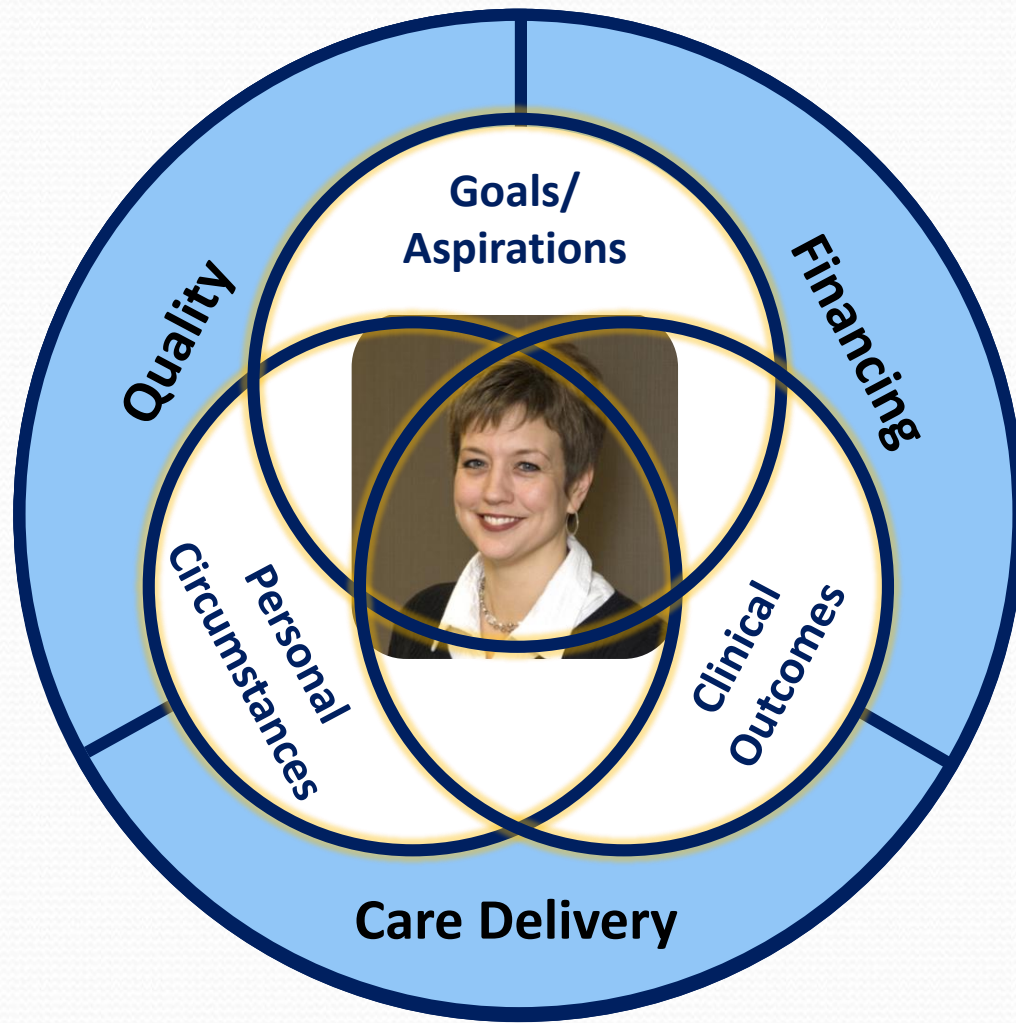
Determine Purpose for Engagement



Consider Who to Engage



Decide on Method(s) for Engagement





Marc Boutin
Chief Executive Officer
National Health Council

mboutin@nhcouncil.org