



Best Care at Lower Cost

The Path to Continuously Learning Health Care

J. Michael McGinnis MD MPP

19 February 13

Living Laboratory Roundtable Meeting

Edmonton, Alberta



INSTITUTE OF MEDICINE
OF THE NATIONAL ACADEMIES

Advising the nation/Improving health

BEST CARE AT LOWER COST

The Path to Continuously Learning
Health Care in America

INSTITUTE OF MEDICINE
OF THE NATIONAL ACADEMIES

INSTITUTE OF MEDICINE

OF THE NATIONAL ACADEMIES

Advising the nation / Improving health



Imagine

These sectors operating like health care

- **Banking** – ATM transactions slowed by misplaced records
- **Home building** – carpenters, electricians, and plumbers all working independently and with different blueprints
- **Retail stores** – no product prices posted, and charges varying widely by method of payment
- **Auto manufacturing** – no warranties for defects or product line quality assessment
- **Airline travel** – pilots all designing their own pre-flight safety checks

INSTITUTE OF MEDICINE

OF THE NATIONAL ACADEMIES

Advising the nation / Improving health



Imagine

Health care operating with best sector practices

- **Records** immediately updated and available for use by patients.
- **Care delivered** proven reliable at the core and tailored at the margins.
- **Patient and family needs** and preferences a central part of the decision process.
- **Team members** all fully informed in real time about each others' activities.
- **Prices and costs transparent** to all participants.
- **Payment incentives** structured to reward outcomes and value, not volume.
- **Errors** promptly identified, reported, and corrected.
- **Continuous improvement** based on real-time practices and outcome monitoring.

INSTITUTE OF MEDICINE
OF THE NATIONAL ACADEMIES

Advising the nation / Improving health



The learning health care system

In the learning health care system, **science, informatics, incentives, and culture** are aligned for continuous improvement and innovation—with best practices seamlessly embedded in the delivery process and new knowledge captured as an integral by-product of the delivery experience.

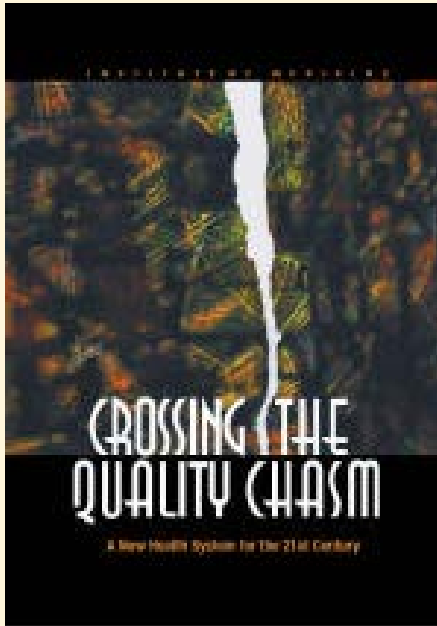
INSTITUTE OF MEDICINE
OF THE NATIONAL ACADEMIES

Advising the nation / Improving health



Broad overview

What's changed since *Quality Chasm*?

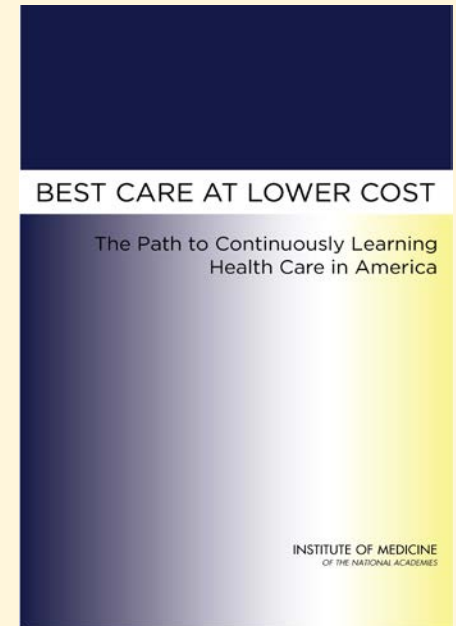


→ Complexity and excess costs

→ New tools and levers

→ Continuous learning capacity

→ IOM implementation focus



INSTITUTE OF MEDICINE
OF THE NATIONAL ACADEMIES

Advising the nation / Improving health



Complexity

Constantly increasing, often exponentially

- **Information** – increasing exponentially
- **Diagnostic considerations** – factors well beyond human cognitive capacity
- **Conditions** – demographics and treatment success driving co-occurring conditions
- **Clinicians** – increasing number of clinicians per individual
- **Treatment choices** – steadily growing, with increased variation by individual

INSTITUTE OF MEDICINE

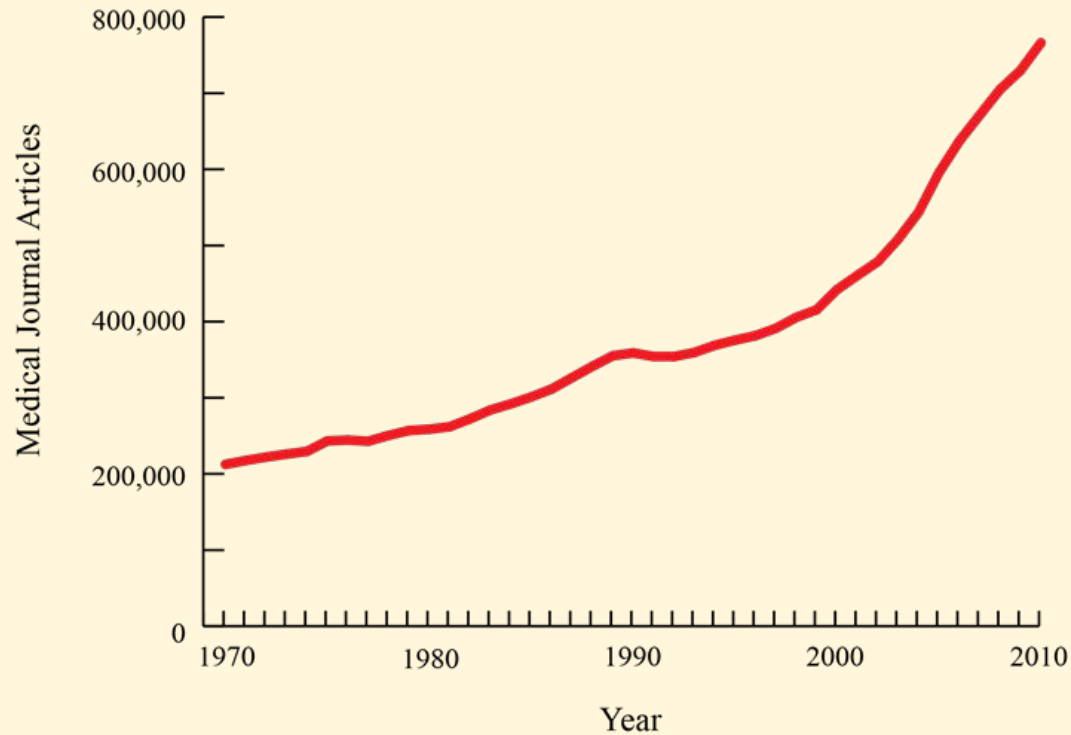
OF THE NATIONAL ACADEMIES

Advising the nation / Improving health



Complexity

Information volume and complexity



INSTITUTE OF MEDICINE

OF THE NATIONAL ACADEMIES

Advising the nation / Improving health



Complexity

Diagnostic complexity (factors in play)

WW Stead (IOM 2007)

INSTITUTE OF MEDICINE

OF THE NATIONAL ACADEMIES

Advising the nation / Improving health



Complexity

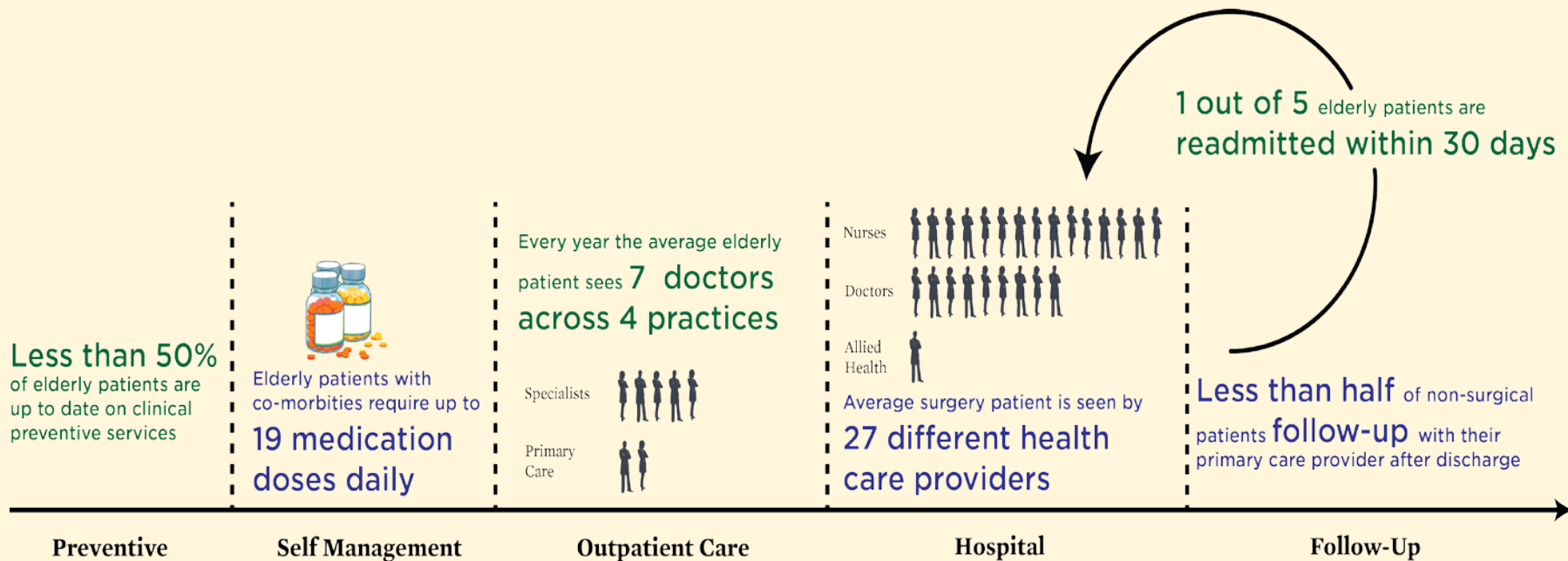
Treatment complexity (issues in play)

- **More conditions** – e.g. 79 year old patient with 19 meds per day for osteoporosis, diabetes, hypertension, and COPD
- **More coordination** – e.g. over 200 other doctors are also providing treatment to the Medicare patients of an average primary care doctor
- **More choices** – e.g. for prostate cancer: watchful waiting, laparoscopic or robotic assisted surgery, brachytherapy, IMRT, proton beam therapy, cryotherapy, androgen deprivation therapy
- **More activities** – e.g. ICU clinicians with 180 activities per person, per day



An all-too-typical experience

Representative timeline of a patient's experience
in the U.S. health care system



INSTITUTE OF MEDICINE

OF THE NATIONAL ACADEMIES

Advising the nation / Improving health

Costs

Absolute, relative, excessive, opportunity

- **Absolute expenditures** – \$2.6 trillion 18% GDP
- **Relative expenditures** – 76% increase health costs in past 10 years, overwhelming the 30% gain in personal income
- **Excessive expenditures** – \$750 billion (2009): unneeded services, delivery inefficiencies, excess administrative costs, prices too high, missed prevention opportunities, fraud.
- **Opportunity costs** – e.g. total waste could pay salaries of all first response personnel for 12 years – **or fund a great deal of programs in closing the health gaps that exist.**



Cost

Sources of unnecessary health spending

TABLE S-1 Estimated Sources of Excess Costs in Health Care (2009)

Category	Estimate of Excess Costs
Unnecessary Services	\$210 billion
Inefficiently Delivered Services	\$130 billion
Excess Administrative Costs	\$190 billion
Prices That Are Too High	\$105 billion
Missed Prevention Opportunities	\$55 billion
Fraud	\$75 billion

INSTITUTE OF MEDICINE

OF THE NATIONAL ACADEMIES

Advising the nation / Improving health



Quality

Persistent missed opportunities, waste, and harm

- **Patient harm** – One-fifth to one-third of hospital patients harmed during their stay, largely preventable.
- **Recommended care** – Only about half of recommended preventive, acute, and chronic care actually delivered.
- **Outcome shortfalls** – If care quality matched highest statewide performance, there would have been 75,000 fewer deaths nationally.

INSTITUTE OF MEDICINE

OF THE NATIONAL ACADEMIES

Advising the nation / Improving health



New tools and levers

Capacity changes since 2000

- **Computing**
 - **Better connectivity** to information and among participants
 - **Stronger processing capacity** for new knowledge
- **Systems/process improvement strategies** spreading with increasing success
- **Patient-clinician culture** change strategies in play
- **Policy levers** for incentives, transparency, accountability, engagement



The vision

Moving from the linear



INSTITUTE OF MEDICINE

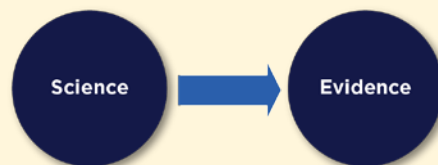
OF THE NATIONAL ACADEMIES

Advising the nation / Improving health



The vision

Moving from the linear



INSTITUTE OF MEDICINE

OF THE NATIONAL ACADEMIES

Advising the nation / Improving health



The vision

Moving from the linear



INSTITUTE OF MEDICINE

OF THE NATIONAL ACADEMIES

Advising the nation / Improving health



The vision

From missed opportunities, waste, and harm

INSTITUTE OF MEDICINE

OF THE NATIONAL ACADEMIES

Advising the nation / Improving health



The vision

From missed opportunities, waste, and harm



INSTITUTE OF MEDICINE

OF THE NATIONAL ACADEMIES

Advising the nation / Improving health



The vision

From missed opportunities, waste, and harm



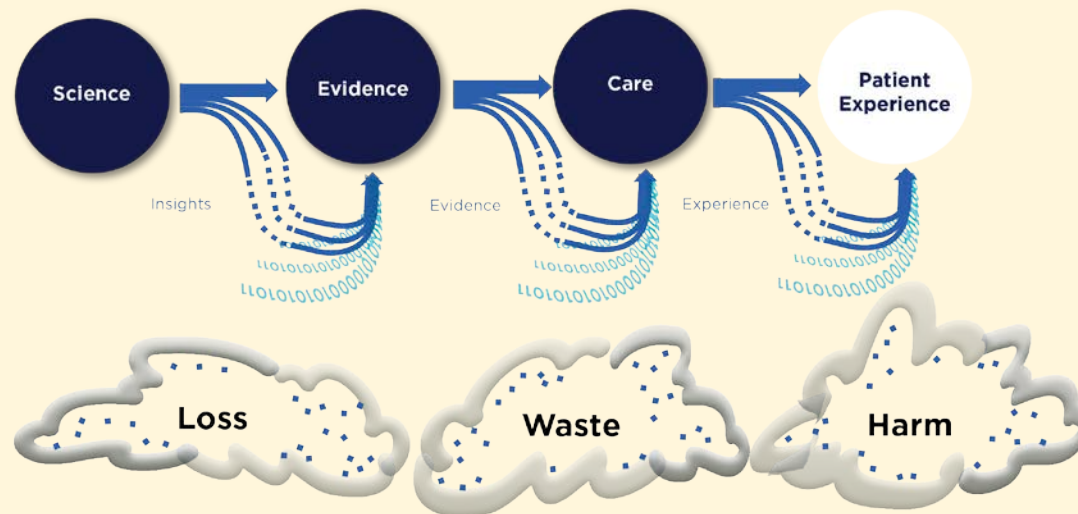
INSTITUTE OF MEDICINE
OF THE NATIONAL ACADEMIES

Advising the nation / Improving health



The vision

From missed opportunities, waste, and harm



INSTITUTE OF MEDICINE

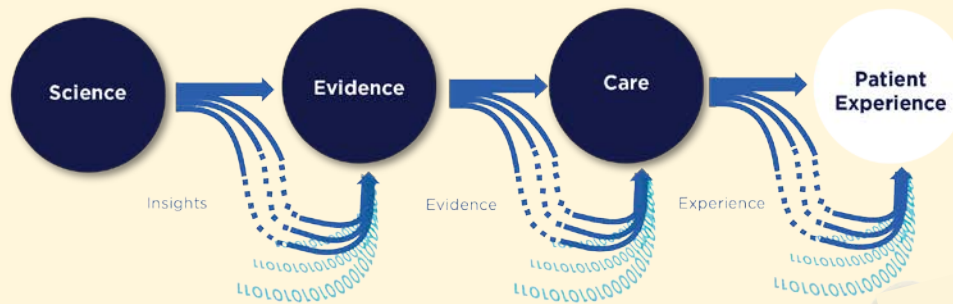
OF THE NATIONAL ACADEMIES

Advising the nation / Improving health



The vision

Transforming culture, incentives, and leadership



INSTITUTE OF MEDICINE

OF THE NATIONAL ACADEMIES

Advising the nation / Improving health



The vision

For continuous learning



INSTITUTE OF MEDICINE

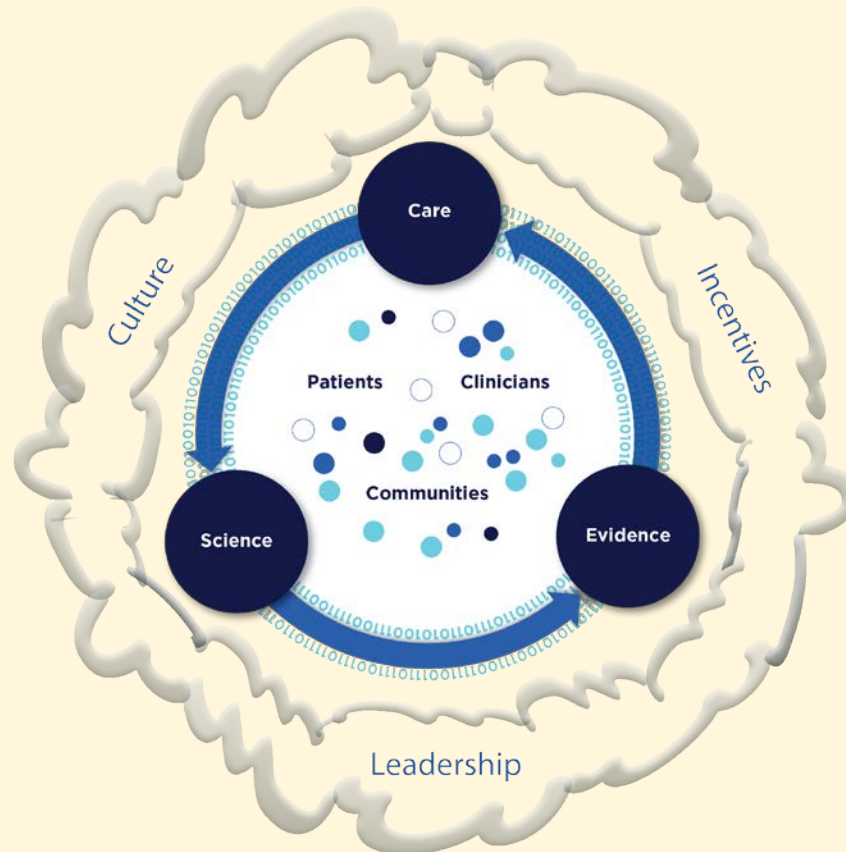
OF THE NATIONAL ACADEMIES

Advising the nation / Improving health



The vision

And best care at lower cost



INSTITUTE OF MEDICINE

OF THE NATIONAL ACADEMIES

Advising the nation / Improving health



The vision

A continuously learning health care system

In the learning health care system, **science, informatics, incentives, and culture** are aligned for continuous improvement and innovation—with best practices seamlessly embedded in the delivery process and new knowledge captured as an integral by-product of the delivery experience.

INSTITUTE OF MEDICINE

OF THE NATIONAL ACADEMIES

Advising the nation / Improving health



Committee recommendations

Foundational elements

- **The digital infrastructure** – Improve the capacity to capture clinical, delivery process, and financial data for better care, system improvement, and creating new knowledge.
- **The data utility** – Streamline and revise research regulations to improve care, promote the capture of clinical data, and generate knowledge.



Committee recommendations

Care improvement targets

- **Clinical decision support** – Accelerate integration of the best clinical knowledge into care decisions.
- **Patient-centered care** – Involve patients and families in decisions regarding health and health care, tailored to fit individual preference.
- **Community links** – Promote community-clinical partnerships and services aimed at managing and improving health at the community level.
- **Care continuity** – Improve coordination and communication within and across organizations.
- **Optimized operations** – Continuously improve health care operations to reduce waste, streamline care delivery, and focus on activities that improve patient health.

INSTITUTE OF MEDICINE

OF THE NATIONAL ACADEMIES

Advising the nation / Improving health



Committee recommendations

Supportive policy environment

- **Financial incentives** – Structure payment to reward continuous learning and improvement in the provision of better care at lower cost.
- **Performance transparency** – Increase transparency on health system performance.
- **Broad leadership** – Expand commitment to the goals of a continuously learning health care system.



Priorities for progress

Priority needs in moving to continuous learning health care

- **Informatics**
 - Seamless patient & family electronic portals
 - Real-time access to updated best practices
 - Digital capture, storage, and analysis of the care experience
- **Science**
 - Alternative study designs tailored to observational data and large simple trials
 - New science of mega-database structure and analysis
 - Regulatory science reform based on real-time tools and phased introduction protocols
 - Strategy for evolution from registries and distributed data to global clinical data trust
- **Incentives**
 - Core metrics on care quality, costs, and health status (at HCO, city, regional levels)
 - Advances in the science of transparency (reliable reporting on care, costs, outcomes)
 - Economic and professional incentives aligned for improving effectiveness/efficiency
- **Culture**
 - Democratization (patient/family control) of care decisions, value, care improvement
 - Leadership-instilled culture of continuous learning
 - Supportive system competencies



Imagine

Inter-institutional collaboration to advance best sector practices

- **Infrastructure for continuous learning** – growing an interoperable digital infrastructure for seamless patient and family care, real-time digital capture of the care experience for new knowledge, and systems approaches to care optimization.
- **Democratization of the care process** – developing, testing, applying, and improving strategies for successful patient, family, and clinician partnerships in care decisions, care improvement, and value returned.
- **Science of transparency** – developing, testing, applying, and improving measures that reliably assess care quality, outcomes, cost, value, and improvement.
- **Leadership skills and strategies** – identifying characteristics, approaches, models, and results of leadership for transforming organizational culture and performance.



Roundtable on Value & Science-driven Health Care

Sectors working together to transform effectiveness and efficiency

- Patients and the public
- Clinicians
- Health care delivery systems
- Insurance
- Research
- Product innovators (pharmaceuticals, devices, biologics)
- Regulators
- Information technology
- Public health
- Employers

INSTITUTE OF MEDICINE
OF THE NATIONAL ACADEMIES

Advising the nation / Improving health



IOM synergy — Innovation Collaboratives

IOM Roundtable on Value & Science-Driven Health Care

- **Health professionals** – Best Practices Innovation Collaborative
- **Public communicators**– Evidence Communication Innovation Collaborative
- **Digital innovators** – Digital Learning Collaborative
- **Clinical researchers** – Clinical Effectiveness Research Innovation Collaborative
- **Care purchasers** – Value Incentives Learning Collaborative
- **Systems scientists** – Systems Engineering for Health Innovation Collaborative



Imagine

Each health care organization operating with best sector practices

- **Records** immediately updated and available for use by patients.
- **Care delivered** proven reliable at the core and tailored at the margins.
- **Patient and family needs** and preferences a central part of the decision process.
- **Team members** all fully informed in real time about each others' activities.
- **Prices and costs transparent** to all participants.
- **Payment incentives** structured to reward outcomes and value, not volume.
- **Errors** promptly identified, reported, and corrected.
- **Continuous improvement** based on real-time practices and outcome monitoring.



Imagine

The path to continuously learning care

iom.edu/bestcare

INSTITUTE OF MEDICINE

OF THE NATIONAL ACADEMIES

Advising the nation / Improving health

