Informatics Process and Standardization – Why now?

Prof. Robert C. Miller, MD, MBA
Department of Radiation Oncology
Mayo Clinic, Rochester, MN
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Unsustainable growth in healthcare costs in the US

Healthcare spending and outcomes
Healthcare spending and outcomes

Macroeconomic issues impacting radiation oncology

1. Shifting Payer/Case Mix
   a) Most demand in oncology from publicly insured patients
   b) Demographic shift into Medicare
   c) Competition from chronic disease management with oncology increased

2. Decelerating Price Growth
   a) Public budgets will not meet demand at current prices
   b) Growth in costs outpacing inflation – Unsustainable in the long term
   c) Risk based payments – quality/safety
   d) Commercial cost shifting limited

Adapted from the Advisory Board, 2014.

Major Milestones in the PPACA (“Obamacare”) Implementation

- Payment model shifts from Fee for Service → Population Health Management
- Payment metrics shift from Volume → Value

Changing Physician Incentives for Affordable, Quality Cancer Care: Results of an Episode Payment Model

By Lee N. Newcomer, MD, Bruce Gould, MD, Roy D. Pog, DO, PhD, Sheila A. Dowden, MS, and Monica Perkoff, PhD

UnitedHealthcare, Minneapolis, MN; Northeast Georgia Oncology Center, Masters. +

Abstract: The source of the cost savings is enigmatic; subset analyses confirmed statistically valid decreases in hospitalizations and usage of therapeutic radiology.

Adapted from the Advisory Board, 2014.
Outcomes databases: What is different now?

Risk based contracting requires excellence at population health management.

Robust analytics based on an outcomes database are a necessity.

Part of a bigger trend:

- “Advanced analytics is likely to become a decisive competitive asset... and a core element in companies' efforts to improve performance.”
- “It's a mistake to assume that acquiring the right kind of big data is all that matters... (It) requires transforming your organization's culture and capabilities, not in a rush to action but in a deliberative effort to weave big data into the fabric of daily operations.”


Adapted from the Advisory Board, “Six imperatives for success under accountable care,” 2014.

Outcomes databases will support the transition to accountable care

1. Increase adherence to evidence-based guidelines.
2. Focus investments on services that drive value.
3. Improve patient-clinician communication.
4. Leverage networks to advance quality and reduce costs.

Adapted from the Advisory Board, “Six imperatives for success under accountable care,” 2014.

Problems: Outcomes databases and evidence based medicine

- Clinical trials and meta-analyses of clinical trials generate level 1 evidence
- However:
  - RCT's very expensive
  - Limited in scope and length (5-10 years)
  - Focused on relatively narrow criteria
  - Very difficult (and expensive) to use to answer questions not prospectively identified
- An Outcomes database can permit evidence generation in a structured, prospective fashion.
Problems: Structure & consistency in evidence collection

Problems: How to measure patient outcomes

- Patient reported outcomes may be superior to provider assessed outcomes, depending on the situation
- An example: N05C5 Prevention of capecitabine induced hand-foot syndrome: urea cream vs. placebo

Problems: How to measure patient outcomes
Problems: How to measure patient outcomes

Problems: Selective perception of toxicity and interventions

- Anchoring biases – Tendency to tie future perceptions to the reference point of first observations

- Confirmation biases – Selectively process information that confirms prior beliefs

- Availability biases – If you can remember it, it must be important

N09C6 Primary Endpoint
Mean Mouth & Throat Pain Over Time (N=140)

P=0.0003
Outcomes Data in Radiation Oncology – Conclusions

1. **Choose the right data**
   - **Multiple sources**
     - Utilize both internal and external data
     - Match IT infrastructure to project needs

2. **Construct models that predict and then allow optimization of outcomes**
   - **Standard disease outcomes**
   - **Resource utilization**
   - **Toxicity**
     - $\rightarrow$ ED visits/Hospitalization

3. **Organizational Transformation**
   - **Integrate analytical tools in the electronic practice environment**
   - **Change work processes to encourage usage**