

Are we doing good yet?

Assessing value in Oncology

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The Logic of Science

Clinical Trial

$$x\{I(a_1+a_2+a_3 \dots a_n+b)\} \longrightarrow O_1$$

$$y\{I(a_1+a_2+a_3 \dots a_n+b+c)\} \longrightarrow O_2$$

$$y\{I(a_1+a_2+a_3 \dots a_n+b+c)\} \longrightarrow O_2$$

$$-x\{I(a_1+a_2+a_3 \dots a_n+b)\} \longrightarrow O_1$$

$$c \qquad \xrightarrow{P} \qquad O_2-O_1$$

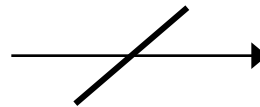
Beyond Science

Subjective Evidence

$$I(a_1 + a_2 + a_3 \dots a_n) + b + c \longrightarrow O_1$$

$$I(a_1 + a_2 + a_3 \dots a_n) + b + d \longrightarrow O_2$$

$$I(a_1 + a_2 + a_3 \dots a_n) + b + e \longrightarrow O_3$$



Value

Value Formula

$$V = O/C$$

Value

Relative Value

$$RV1 = O1/C1$$

$$RV2 = O2/C2$$

$$RV3 = O3/C3$$

Relative value

- ▶ The judge of the relative value of an intervention is first and foremost the patient
- ▶ The determinant of that value depends on both empiric and subjective evidence

Quality

- ▶ Quality is that which distinguishes one process from another by enhancing relative value
- ▶ Reducing costs while maintaining empiric and subjective outcomes improves quality

The Oncology Care System

Discovery of a sign or symptom → self-referral to primary care physician → call for appointment → timely appointment made → physician visit / history and examination → referral to specialist for biopsy → call for appointment → collect or send pertinent history and findings (physical, laboratory and/or imaging) → physician visit → schedule biopsy → technically competent biopsy with adequate tissue → tissue specimen handled and processed appropriately → return appointment with specialist with review of pathology → formulation of plan → treatment scheduled → education regarding treatment initiated → treatment given → follow-up visit with physician to evaluate benefits/toxicities of treatment

The Oncology Care System

Obstacles to Health Care Delivery

- ▶ Wait too long for appointment
- ▶ Wait too long to see physician, get lab, get treated
- ▶ Lost or wrong information
- ▶ Missing information
- ▶ Wrong treatment
- ▶ Complications of treatment
- ▶ Travel distance (geographic access)
- ▶ Insurance coverage (financial access, affordability)
- ▶ Lost work time and income
- ▶ Child care availability and cost
- ▶ Concern for significant others
- ▶ Fear of disfigurement or incapacity
- ▶ Loss of control (dignity)
- ▶ Burden on family
- ▶ Belief system
- ▶ Denial

Delivery Metrics: What would constitute system failure?

- ▶ Wrong treatment
- ▶ Unsafe
- ▶ Don't respect my time, don't respect me
- ▶ Not informed and not participating
- ▶ Poor symptom control
- ▶ Not dying "in place"

Initiatives

- ▶ 2003 Develop a uniform web-based reporting tool for medication occurrences. Reporting available to any practice
- ▶ 2004 Practice Quality and Efficiency (PQE)
- ▶ 2005 QOPI
- ▶ 2005 Level 1 Pathways for Medical Oncology and Hematology: evidence, toxicity, cost to patient
- ▶ 2009 Innovent Oncology: Pathways, telephonic call system with OCN certified nurse for support for self-management with chemotherapy, Advance Care Plans
- ▶ 2010 800+ Medical Oncologists using a single EHR (iKnowMed – iKM)

Specifics

- ▶ PQE – Delivery Metrics
- ▶ Pathways – Performance metrics
- ▶ Interdisciplinary care
- ▶ Patient education and self-management
- ▶ Feedback structure
- ▶ Incentives
- ▶ Tools

Service Metrics: PQE: Lean/Six Sigma

- ▶ Reduction in wait times
- ▶ Reduced lab cycle times
- ▶ Reduced peak flow in infusion rooms
- ▶ Eliminated returns to waiting room after vital signs, port draws
- ▶ New patient appointments within 2 days
- ▶ Re-engineered MD, lab, infusion processes to enhance ideal patient flow
- ▶ MD Comment: The atmosphere in the clinic is so much better.

Level I Pathways Development

Key Guiding Principles

Three Phase Development Approach:

- ▶ Evaluate Strongest Clinical Evidence for comparable drugs
- ▶ Compare Toxicity Profile
- ▶ If drugs are clinical equivalent, least costly drug becomes ON-Pathway option

Apply 80/20 Rule:

- ▶ Recommend therapies that work for the majority of patients

Clinical trials always considered On-Pathway:

- ▶ Current health plan precertification workflows remain unchanged
- ▶ Coverage is subject to employer benefit guidelines/limitations

Generally offer Pathways choices for 1st, 2nd, and 3rd line in advanced setting Point-of-care Pathways clinical decision tools provided:

- ▶ US Oncology Practices - iKnowMed US Oncology's EMR
- ▶ Non-US Oncology Practices - Web Based Portal

Pathways are reviewed on quarterly basis:

- ▶ Participating oncologists are encouraged to provide feedback

Level I Pathways Development

A More Precise Approach

Level I Pathways

Regimens are generally recommended in step-wise sequence by Lines of Therapy

Lines of Therapy are limited

Costs to patients and payers are considered.

Structured with implementation tools and feedback mechanism to ensure consistent quality of care.

Other Guidelines/Labels

General panel of options only. No sequence or preference among options stated.

NO limits in Lines of Therapy

Costs to patients and payers are NOT considered.

General document WITHOUT support framework to ensure quality care.

VS.

Level I Pathways – Physician Performance

Level I Pathways-Physician Performance

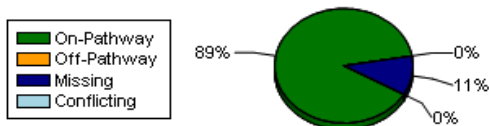
10/01/2010 - 12/31/2010

Physician: [Redacted]

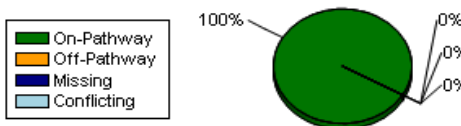


Regimens: 30

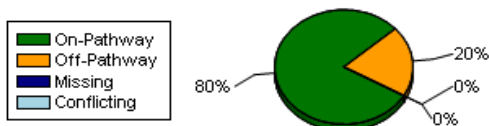
Breast Cancer Pathway



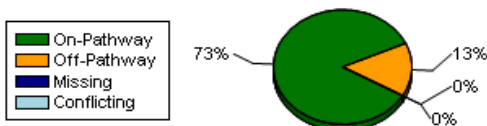
Colon Cancer Pathway



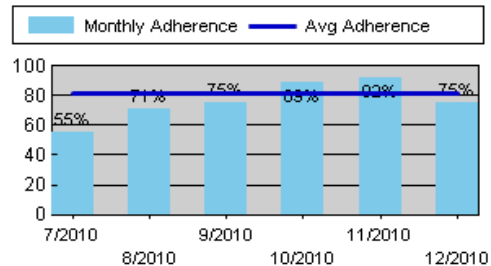
Non Small Cell Lung Cancer Pathway



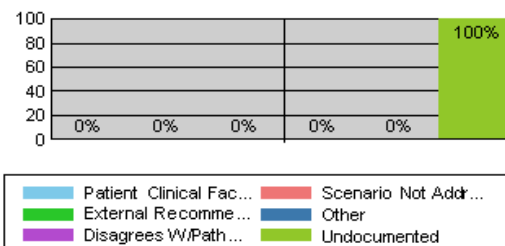
Other Pathways



% Pathway Adherence - All Pathways Rolling 6 Months



Off-Pathway Exception Reasons For All Pathways Number of Off Pathway cases:3



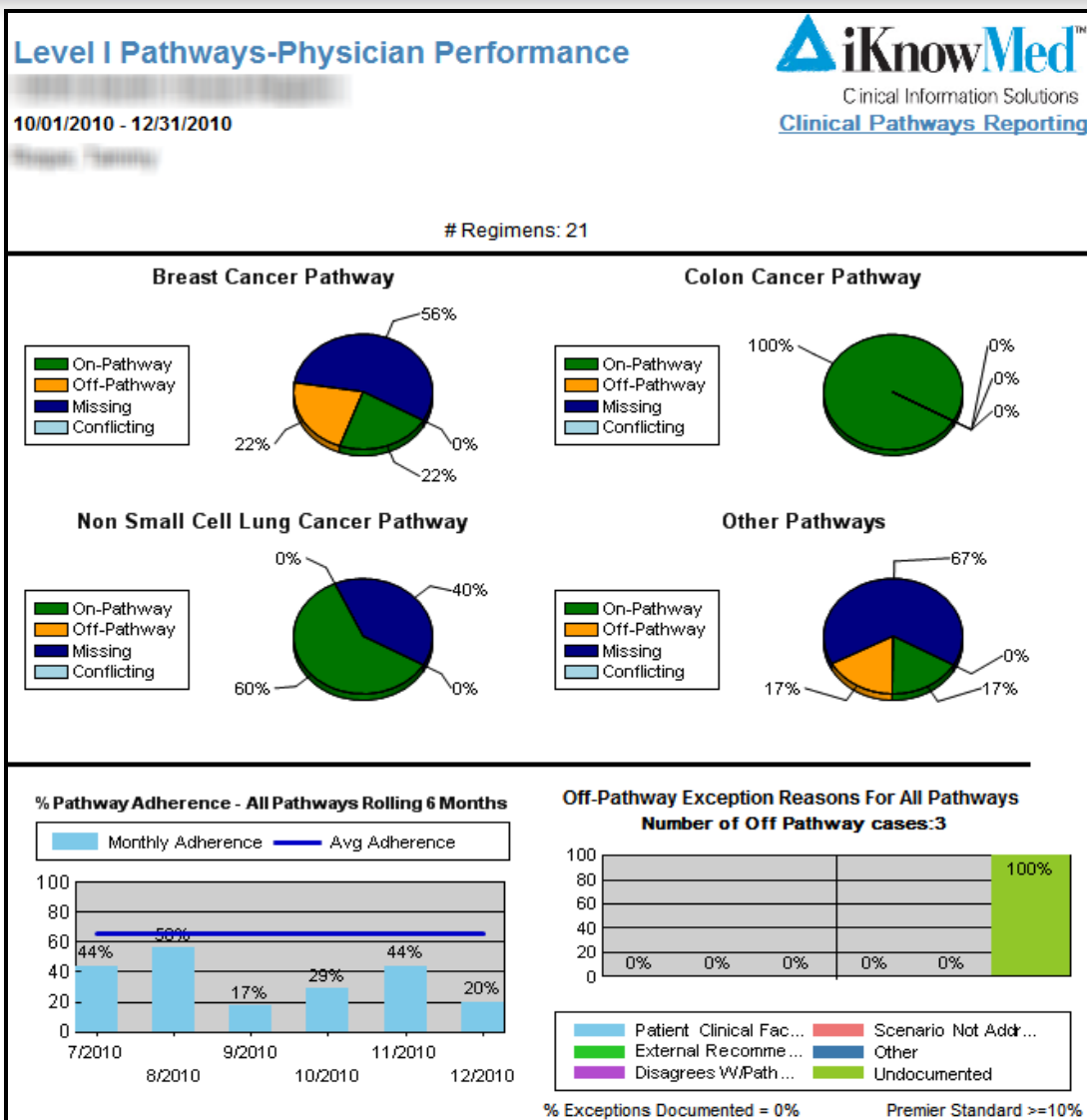
% Exceptions Documented = 0%

Premier Standard >=10%



More breakthroughs. More victories.

Level I Pathways – Physician Performance



Pathways Potential

- ▶ Include consultation recommendations on Pathways, including Advance Care Planning
- ▶ Integrate Medical, Radiation and Surgical Oncology Pathways
- ▶ Retrospective review of multidisciplinary treatment of specific diseases
- ▶ Patient portal
- ▶ Virtual tumor board
- ▶ Defines the role of a patient navigator/support nurse

Multidisciplinary metrics

- Appropriate radiation for breast cancer (UHC)
- Drug compliance with hormonal therapy >70% (UHC)
- Appropriate pre-op imaging for lung cancer (UHC)
- Colon pre-op evaluation including imaging, CEA, colonoscopy (UHC)
- Appropriate XRT for rectal cancer (UHC)
- Radiation therapy for Stage 1 lung cancer – lower is better (QOPI)

Patient Education and Self-management

- Standard education packet including
 - red/yellow/green for symptom management.
 - ACP discussion
 - Questions to ask
 - Chemo teaching by RN/ML
- Supplemental disease and community relevant information
- Innovent: PSS OCN call, ESAS each call,
 - ACP/AD info, reporting into EHR
- Metrics – enrollment, ACP discussions, hospice enrollment, hospital, ER, symptom management

Feedback

- Cancer Center Specific Quality Committees
- Committed nurse + physician – jackpot!
- Metrics: Pathways
Service
Patient-centered: communication,
symptom control
Resource use
- Incentives – internal reward for high performance

Metrics in an EHR World

- ▶ The EHR is a yes/no environment
- ▶ Text search is expensive with uncertain validity
- ▶ Metrics data points have to be recorded on every patient
- ▶ Every physician needs performance reporting
- ▶ EHR primary function is not patient metric documentation nor reporting
- ▶ Extra clicks take time
- ▶ This means that clinic processes will have to change

Do we have the right tools?



QOPI Patient Centered Metrics

- 11. Chemotherapy intent discussion with patient documented.
- 18. Chemotherapy treatment summary provided to patients.
- 24. Patient emotional well-being assessed within one month of first office visit.
- 35. Pain assessed and addressed appropriately in the last 2 visits before death.
- 39. Dyspnea assessed and addressed.
- 42. Hospice enrollment.

Nurse Note – ESAS SOB result with comment

ZzTest, ASCO Allergies / Adverse Reactions Today: 02/07/2011

Medical: zztestasc... DOB: 06/05/1960 ? None entered

ZzTest, ASCO

Nurse Note	*
January Key iKnowMed Updates	1) First Data Bank drug changes...
▼ Patient status alerts	
Shortness of breath rating is 8	
Primary Charting	
Clinic note	
Anticoagulation program note	
▶ Patient assessment	
Karnofsky performance status	
▶ NCI toxicities	
▼ Edmonton Symptom Assessment...	*
Tiredness (Fatigue)	
Nausea	
Depression	
Anxiety	
Drowsiness	
Appetite	
Shortness of breath	<input checked="" type="checkbox"/> 8, comment here
Well-being	
Other problem	
▶ Nursing procedures	
Patient education	
Discharge note	
Other Charting	
Phone note	
Message	
▶ Vital signs	
▶ Other notes	
▶ Adverse events	
▶ Directives & considerations	
▶ Consents	
▶ Established patient, minimal off...	
PQE Complete & timely order m...	

Shortness of breath Result

Shortness of breath
✓ Result

Shortness of breath with level 8 and comment creates a message at the top of nurse note in red font.

1:
2:
3:
4:
5:
6:
7:
8:

Text Entry

comment here

iKnowMed Dictation

idle 0 0

Save Note Discard Previous Next

Nurse Note – Patient Assessment with Dyspnea

ZzTest, ASCO
Medical: zztestasc... DOB: 06/05/1960 Allergies / Adverse Reactions ? None entered Today: 02/10/2011

ZzTest, ASCO

Nurse Note *
January Key iKnowMed Updates 1) First Data Bank drug changes...

Primary Charting

Clinic note
Anticoagulation program note

☒ **Patient assessment** *

<input type="checkbox"/> Hematologic	<input type="checkbox"/> Labs verified
<input type="checkbox"/> Constitutional	<input type="checkbox"/> Full ADL, No fever, No fatigue, N...
<input type="checkbox"/> Oral	<input type="checkbox"/> No soreness, No dryness, No re...
<input type="checkbox"/> Eye	<input type="checkbox"/> No impaired vision
<input type="checkbox"/> Ears/nose	<input type="checkbox"/> No nasal congestion, No compl...
<input type="checkbox"/> Cardiovascular	<input type="checkbox"/> Skin warm and dry, Regular pul...
<input type="checkbox"/> Lymphatics	<input type="checkbox"/> No lymphedema, No adenopathy
<input checked="" type="checkbox"/> Respiratory	<input checked="" type="checkbox"/> No cough, Positives: Dyspnea
<input type="checkbox"/> Dyspnea	<input type="checkbox"/> Onset: Within the past several d...
<input type="checkbox"/> Gastrointestinal	<input type="checkbox"/> No nausea, No vomiting, No dia...
<input type="checkbox"/> Genitourinary	<input type="checkbox"/> No complaints voiced
<input type="checkbox"/> Musculoskeletal	<input type="checkbox"/> Steady gait
<input type="checkbox"/> Skin	<input type="checkbox"/> Skin intact
<input type="checkbox"/> Neurologic	<input type="checkbox"/> Alert and oriented, Understands ...
<input type="checkbox"/> Psychosocial	<input type="checkbox"/> Behavior appropriate, Cooperati...
<input type="checkbox"/> Sleep	<input type="checkbox"/> No complaints voiced
<input type="checkbox"/> Pain	<input type="checkbox"/> No pain

Karnofsky performance status
NCI toxicities
Edmonton Symptom Assessme...
Nursing procedures
Patient education
Discharge note
Other Charting
Phone note
Message
Vital signs
Other notes
Adverse events

Save Note **Discard**

Patient assessment Respiratory

Positives

☒ **Positives** **Dyspnea** [Onset: Within the past several days; Severity: Severe; Associated with: Normal activity; Status: Unchanged;] [remove service](#)

☒ **Normal negatives** No cough; [remove](#)

☐ Cough
☐ Decreased breath sounds
☒ **Dyspnea**
☐ Hemoptysis
☐ Tachypnea
☐ Uses accessory muscles
☐ Wheezing

Text Entry

iKnowMed Dictation

idle 0 0

[Previous](#) [Next](#)

Dyspnea showing under Patient Assessment in Nurse Note with full set of possible attributes to elect. Positive attributes are shown in nurse note with red mark in corner of box. Attributes shown in line below .

Nurse Note – Chart Message to MD

ZzTest, ASCO Allergies / Adverse Reactions Today: 02/10/2011

Medical: zztestasc... DOB: 06/05/1960 ? None entered

ZzTest, ASCO

Nurse Note	*
January Key iKnowMed Updates	1) First Data Bank drug changes...
<input checked="" type="checkbox"/> Patient status alerts	
Shortness of breath rating is 8	
Primary Charting	
Clinic note	
Anticoagulation program note	
<input checked="" type="checkbox"/> Patient assessment	
Karnofsky performance status	
<input checked="" type="checkbox"/> NCI toxicities	
<input checked="" type="checkbox"/> Edmonton Symptom Assessme...	<input checked="" type="checkbox"/> *
<input checked="" type="checkbox"/> Nursing procedures	
Patient education	
Discharge note	
Other Charting	
Phone note	
Message	
<input checked="" type="checkbox"/> Vital signs	
<input checked="" type="checkbox"/> Other notes	
<input checked="" type="checkbox"/> Adverse events	
<input checked="" type="checkbox"/> Directives & considerations	
<input checked="" type="checkbox"/> Consents	
<input checked="" type="checkbox"/> Established patient, minimal offi...	
PQE Comple	

Message

Route to

Service History
Prior Observations
My Preferences

Message

Route to *

Message type

Subject

Priority

Message body

☐ Automated, Ivana B., A123

☐ doctor, doctor1

☐ fillmore, seth

☐ Harrison, Peter

☐ Lombar, Molly, RN

☐ Lombard, Molly, RN

☐ Lombarn, Molly, RN

☐ Planchard, Cindy, EHR

☒ Current Practice

☐ All Practices

Save Note Discard Previous Next

View Chart

The nurse has the option of sending a chart message to the MD regarding the "Positive" of shortness of breath while still in the nurse note, however, the standard should be to notify the MD by phone or in person of any significant positives during a patient visit.

End of Life/Death Detail iKnowMed

iKnowMed - Sarah ZZ Giessinger - East Bay Oncology - East Bay Cancer Care - Chart - Windows Internet Explorer

File View Chart Regimen Window Help

ZzTest, ASCO Medical: zztestasc... DOB: 06/05/1960 Allergies / Adverse Reactions ? None entered Today: 02/03/2011

ZzTest, ASCO

- Death Details
 - Date of Death *
 - Major cause of death *
 - Treatments within last 2 weeks
 - Hospice care
 - Time from when last seen by o...
 - Location at time of death
 - Death Reported to coroner
 - Autopsy
 - Patient's family contacted ☐ Yes
 - Sympathy card sent ☐ Yes

Hospice care

Comment

Hospice care

Comment

Date referred

Date enrolled

Hospice name

Total # of days enrolled

☐ Under hospice care

☐ No longer on hospice

☐ The patient was offered a referral to hospice but declined the offer.

Text Entry

B I U ABC

iKnowMed Dictation

idle 0 0

Save Note Discard Previous Next

View Chart

Death detail iKnowMed with end of life detail information

Headwinds

- ▶ National average practice size: 3-4
- ▶ Median drop in oncology practice income 2007-2008: 25%
- ▶ Seeing more new patients (350+ per year)
- ▶ Most practices are single specialty
- ▶ Even within practices, software platforms do not talk to each other: med onc, rad onc, urology, pathology, imaging, practice management - all different

Measuring Effectiveness

- ▶ A comprehensive, evidence-based suite of recommended regimens serves as the basis for a patient-centered delivery system
- ▶ Patient education and self-management build on the template of these regimens
- ▶ Systematic evaluation of symptoms either in the clinic or telephonically improves symptom control
- ▶ There are few multidisciplinary care metrics in the community.
- ▶ EHR is required for point of care regimen selection and planning, measurement and reporting but current capacity falls short of need
- ▶ Research into parsimony in quality metrics is needed
- ▶ Rework of clinical processes is required
- ▶ The potential is great