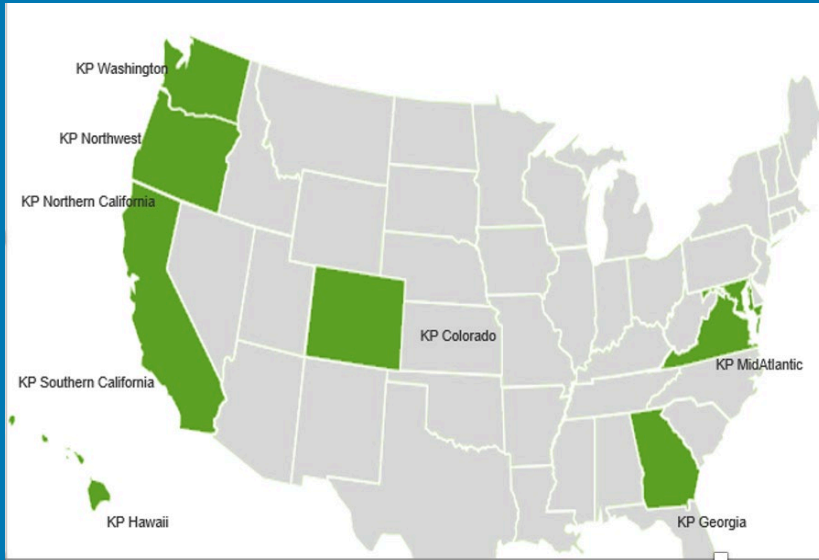


Opportunities for Decision Support Through the Use of EHRs

Mary Ichiuji, MD
Kaiser Permanente
Beacon, National Physician Lead

February 28, 2022

Kaiser Permanente at a glance



8 Regions

12.5M Members



24K+
Physicians

64K+
Nurses

217K+
Employees

39
Hospitals

720+
Medical
Offices

305
Oncologists

150
Oncology
Pharmacists

60K+
New Treatment
Plans/Year

KP Beacon Oncology Module – EPIC electronic health record

Safe ordering and administration of cost-effective therapies by oncology providers



- Multidisciplinary InterRegional Collaborative Build Group 2005
- Includes MDs, PharmDs, RN and Beacon Builders
- Meet weekly to build and maintain all protocols



- Develop evidence based standardized protocols
- Implement best practices
- Incorporate drug use management initiatives
- Computerized Physician order entry



- Adult (510)
- Pediatrics (387)
- Clinical Trials (198)
- Non-oncology (100)
- **TOTAL PROTOCOLS - 1195**

KP National Oncology Drug Treatment Pathways

National agreement in 2018 to develop internal oncology treatment pathways

- ▲ Aligns with Kaiser Permanente's mission
- ▲ Ensures all patients receive high-quality, value centered care
- ▲ Leverages existing expertise within Kaiser Permanente
- ▲ EHR integration – Information and ordering in one place

...to provide high-quality, affordable health care services and to improve the health of our members and the communities we serve.

Kaiser Permanente Mission Statement

Decision Support Requirements

Evidence based

Efficacy, Toxicity and Cost to Organization

Easy to Use – 3 additional clicks

Up to Date – Edited quarterly

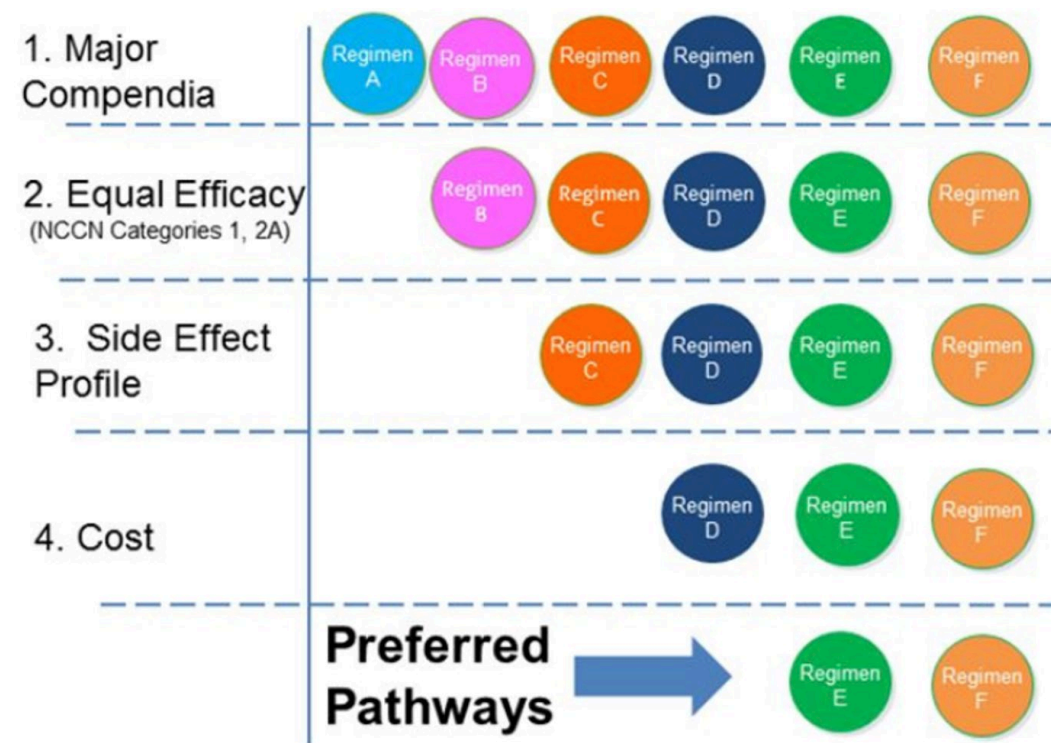
Preferred vs Alternative Options

Emphasis on Clinical Trials

Includes Palliative Care/Hospice

Feedback

Metrics



Pathway Development

Organ System	Regional Subspecialty Draft	National Subspecialty Consensus	IR Oncology Chiefs Approval	Beacon Integration on Platform	Metrics
Breast	HR+(DCIS/LCIS, adj), HR+/HER2- (adj, met), HER2+ (adj, met), TNBC (adj, met), Supp Care				
Colorectal	CRC (Stage IV)				
Gastrointestinal	E/GEJ/GAC (met), ESCC (met), Pancreas (adj, met)				
Genitourinary	Prostate (nmHSPC, mHSPC, nmCRPC, mCRPC), Bladder (met), RCC (met)				
Gynecologic Oncology	Ovarian (Stage II/III/IV), Endometrial (advanced)				
Hematology-Benign	VTE				
Hematology-Malignant	APL, ALL, CML, CLL/SLL, DLBCL, FL, HL, MM, PCNSL, AML				
Melanoma	Melanoma (adj, in-transit, met)				
Thoracic	NSCLC (Stage II, III, IV), SCLC, Mesothelioma*				

EHR Integration

Viewable from KP Health Connect or Intranet

Orderable from the Patient Chart

Jump from chart to Clinical Library Home Page

#1-Click on Disease State

#2-View Protocol

#3-Click to Order Protocol and Jump back to Health Connect

Sign Protocol

KP Oncology Pathways

126 pathways

37 Disease Sites

Change Management

- Ability to address Severe Drug Shortages
- Ability to update pathway if drug indication withdrawn

Feedback button

Pathway not Available

The screenshot shows the Epic Oncology Pathway interface. The top navigation bar includes links for Home, Schedule, Chart, Oncology Pathway, Encounter, UpToDate, Protocol Builder View-Only, Secure, and Hospital Chart. The user is logged in as MARY ICHIUJI. The main content area is titled 'National Oncology Treatment Pathways' and features a 'TOPICS LIST' sidebar with categories like Breast, Cutaneous, Gastrointestinal, Genitourinary, and Gynecologic. The 'BREAST' section is highlighted, showing a list of treatment options for early-stage breast cancer. A pink alert box at the top of the main content area states: 'ATTN: Total shortage of nab-paclitaxel (Abraxane). Please consider this when selecting your treatment plan.' Below this, the 'BREAST' section is titled 'Early' and lists the following treatment options:

- DCIS ER/PR+
- ER/PR+ Adjuvant Endocrine: [POST-Menopausal, PRE-Menopausal]
- HER2+ Adjuvant: [Node+, Node neg]
- HER2+: Neoadjuvant & Adjuvant
- HR+, HER2 neg Adjuvant Age ≤ 50: [Node+, Node neg]
- HR+, HER2 neg Adjuvant Age > 50: [Node+, Node neg]

KP Oncology Pathways

Available in *KPHC Beacon: Oncology Navigator*

<https://cl.kp.org/natl/pathways/oncology/index.html>
or search “*oncology pathways*” on NATL Clinical Library site

The oncology pathways guide a clinician to treatment options for patients

A clinician will select:

- Topic (*Thoracic*)
- Type (*NSCLC*)
- Stage/Line of treatment (*Stage III or Stage IV 1st Line, 2nd Line*)

Each set of options provide a series of pathways to treatment.

The screenshot shows a web browser window with the URL <https://cl.kp.org/natl/pathways/oncology/index.html>. The page is titled "National Oncology Treatment Pathways" and features a "KAISER PERMANENTE care management institute" logo. A "Pathways Feedback" button is visible in the top right. The left sidebar contains a "TOPICS LIST" with categories: Breast, Gastrointestinal (Colon, Esophagus/Gastric, Liver, Pancreas), Genitourinary (Bladder, Prostate, Renal), Gynecologic (Cervical, Endometrial, Ovary), Head and Neck, Hematology (Benign, Malignant), Melanoma, Neuroendocrine, and Thoracic (Mesothelioma, NSCLC, SCLC). The main content area displays the "BREAST" pathway, which is divided into "Early" and "Advanced" sections. The "Early" section lists treatment options for DCIS, ER/PR+ Adjuvant Endocrine, HER2+ Adjuvant, HER2+ Neoadjuvant & Adjuvant, HR+, HER2 neg Adjuvant (Age ≤ 50 and > 50), HR+, HER2 neg Neoadjuvant & Adjuvant, Triple Negative Breast Cancer (TNBC) Neoadjuvant & Adjuvant Therapy, and Bone Modifying Agents (BMAs) Supportive Care. The "Advanced" section lists treatment options for HER2+ Recurrent, Unresectable or Metastatic, HR+, HER2 neg Recurrent, Unresectable or Metastatic, Triple Negative Breast Cancer (TNBC) Recurrent or Metastatic, and Bone Modifying Agents (BMAs) Supportive Care. The "GASTROINTESTINAL" pathway is partially visible at the bottom, showing the "Colon" section with "Advanced" treatment options for Stage IV CRC.

Oncology Drug Treatment Pathways x +

https://cl.kp.org/natl/pathways/oncology/index.html

National Oncology Treatment Pathways KAISER PERMANENTE care management institute

Pathways Feedback

BREAST

Early

- DCIS ER/PR+
- ER/PR+ Adjuvant Endocrine: [POST-Menopausal, PRE-Menopausal]
- HER2+ Adjuvant: [Node+, Node neg]
- HER2+: Neoadjuvant & Adjuvant
- HR+, HER2 neg Adjuvant Age ≤ 50: [Node+, Node neg]
- HR+, HER2 neg Adjuvant Age > 50: [Node+, Node neg]
- HR+, HER2 neg Neoadjuvant & Adjuvant
- Triple Negative Breast Cancer (TNBC): Neoadjuvant & Adjuvant Therapy
- Bone Modifying Agents (BMAs) Supportive Care

Advanced

- HER2+ Recurrent, Unresectable or Metastatic: [1st Line, 2nd Line, 3rd Line, After 3rd Line]
- HR+, HER2 neg Recurrent, Unresectable or Metastatic: [1st Line, After 1st Line]
- Triple Negative Breast Cancer (TNBC) Recurrent or Metastatic: [1st Line, After 1st Line]
- Bone Modifying Agents (BMAs) Supportive Care

GASTROINTESTINAL

Colon

Advanced

- Stage IV CRC
 - 1st Line: [Unknown molecular status, Known molecular status]
 - 2nd Line

KP Oncology Pathways

Pathways pages contain:

- Subject-specific messages, like warnings (if relevant)
- PDF version of the Algorithm (to print/download)
- Links to relevant Clinical Trials websites
- Emails for Subspecialty Consultations

A quick scan of the left column directs a user to an algorithm that applies to their patient.

Each algorithm initiates a path to treatment in stepwise order.

NSCLC Stage III

Last updated: August 18, 2021

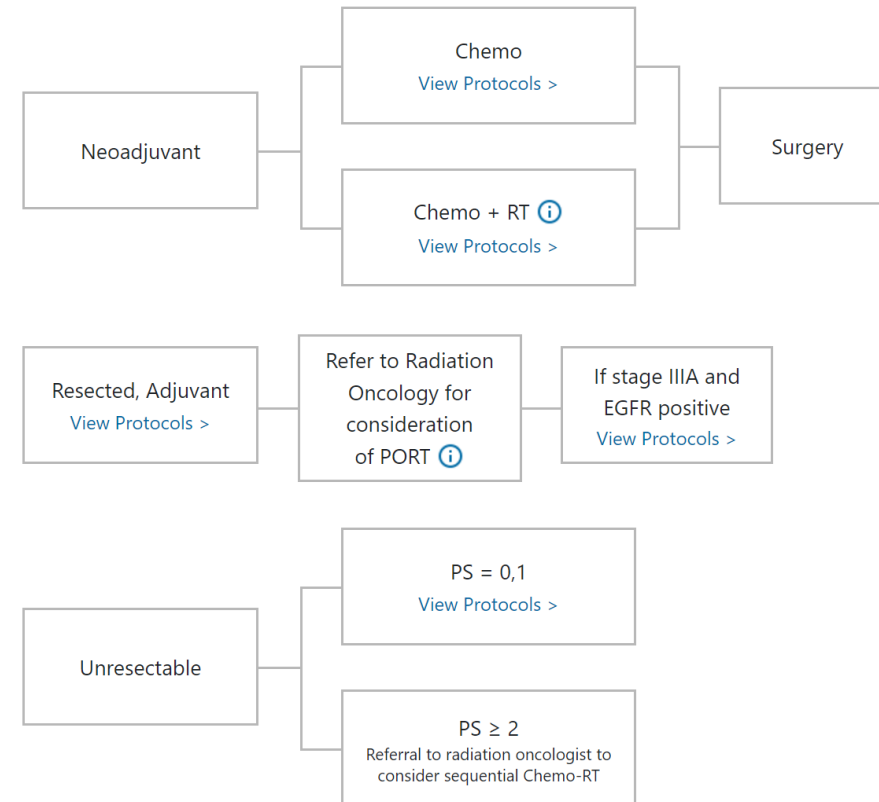
 [View Pathway Algorithm](#)

Clinical Trials Websites

NCAL Clinical Trials
SCAL Clinical Trials

Lung Subspecialty Consultation

NCAL: OncoLungSpecs@kp.org
SCAL: SCALSubLungOncs@kp.org



KP Oncology Pathways

Hover to Discover specific information right where it is needed

- Clinical Pearls for drugs/doses or therapy
- Reference Links to relevant and timely journal articles in PubMed.

National Oncology Treatment Pathways

Oncology Protocol Pathways / NSCLC Stage III

NSCLC Stage III

Last updated: August 18, 2021

Clinical Trials Websites
[NCAL Clinical Trials](#)
[SCAL Clinical Trials](#)

Lung Subspecialty Consultation
NCAL: OncoLungSpecs@kp.org
SCAL: SCALSubLungOncs@kp.org

Neoadjuvant

Chemo
[View Protocol](#)

Chemo + RT
[View Protocols >](#)

Clinical Pearls

- Chemo + RT preferred for superior sulcus tumor since local control can be crucial to quality of life. No improvement of OS with chemo + RT despite improvement of pCR.

References

- J Clin Oncol 2007; 25(3): 313-318. [Pubmed](#)
- Lancet Oncol 2008; 9(7): 636-678. [Pubmed](#)
- J Clin Oncol 2002; 20(8): 1989-1995. [Pubmed](#)

[View Pathway Algorithm](#)

KP Oncology Pathways

Treatment options contain:

Preferred or Alternative protocols

Drugs + Dosing information

Red comments for necessary modifications to the defaulted Beacon protocol

Clinical Pearls (i)

Links to relevant Journal articles in PubMed (i)

Endometrial Cancer
Stage III/IV
Recurrent Disease
FIRST LINE

Symptomatic or High Grade

Preferred

- **Clinical Trial** (NCAL/SCAL: NRG-GY018; known MMR IHC status)
- Paclitaxel (175mg/m²) d1 + Carboplatin (AUC 6) d1; q21d x 6 cycles (i)

HER2(+) Serous:

- Paclitaxel (175mg/m²) d1 + Carboplatin (AUC 6) d1; q21d x 6 cycles + Trastuzumab (8mg/kg LD, 6mg/kg MD) d1; q21d until toxicity or progression (i)

This protocol defaults without TRAZ. ADD TRAZ and continue TRAZ after completing 6 cycles of chemotherapy

Alternative for Carcinosarcoma

- Ifosfamide (1600mg/m²) + MESNA (320mg/m² IV x1 and 640mg/m² PO x2) d1-3 + Paclitaxel (135mg/m²) d1; q21d up to 8 cycles (i)

CONFIDENTIAL and PROPRIETARY

logists in collabora

National Oncology Pathways Usage Report

Version 1.0

- Tracks pathway usage rate
- Currently available
- Monthly report starting January 2021 to IR Oncology Chiefs

Version 2.0

- Ability to track preferred vs alternative vs off-pathway rate
- In progress

Over 2021, the data shows that clinicians in each region are increasingly adopting the National pathways
Able to measure usage by Region, Medical Center, Provider
Opportunities and Unresolved

KP Oncology Pathways Summary

Multidisciplinary collaboration – MD, Pharmacy,
Clinical Library & IT

Made it easy to do the right thing for the patient

Deliver Equitable care

Seamlessly integrated into the workspace

Easy to Use

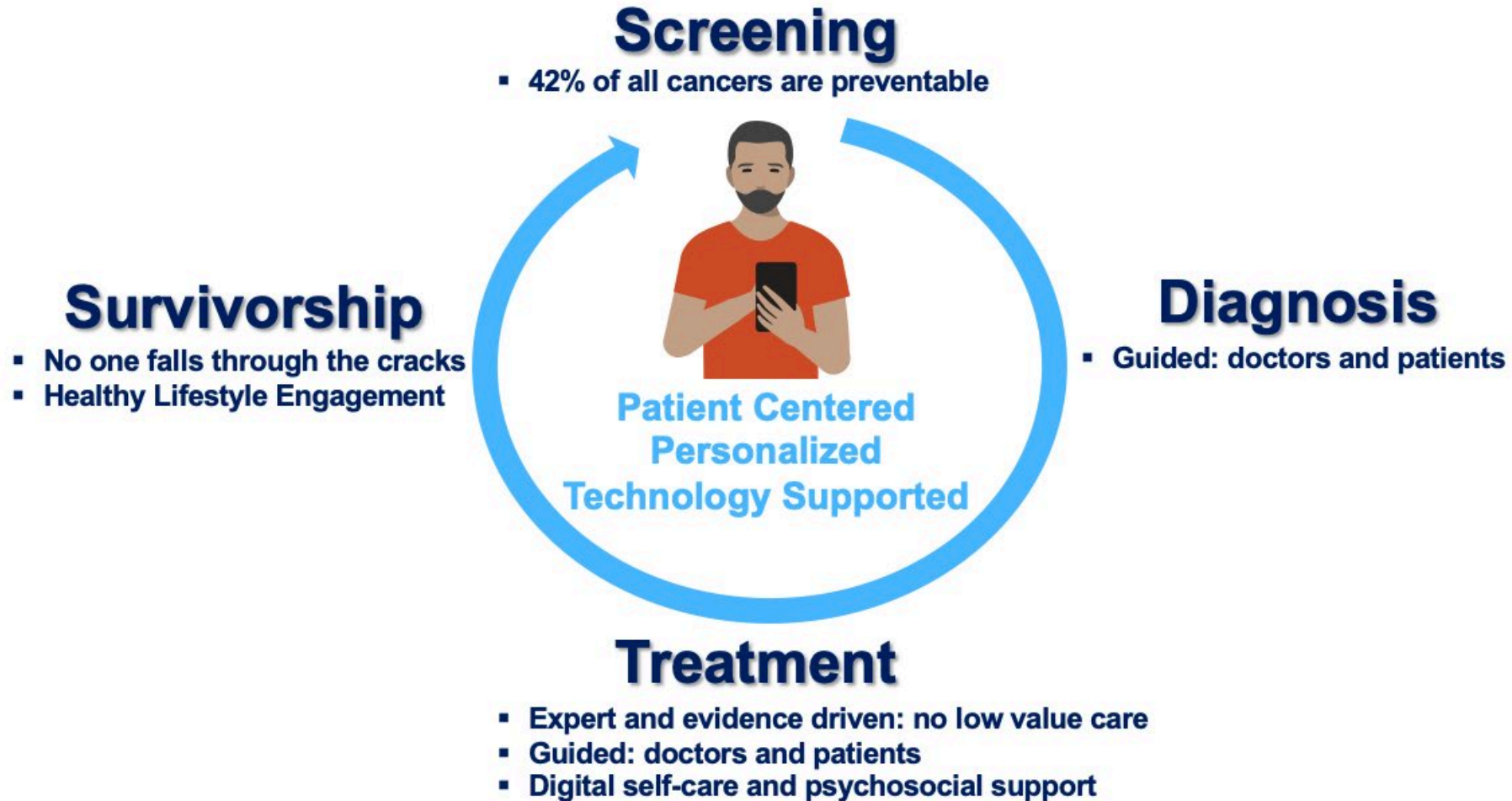
Up to Date information

Developed Metrics to evaluate patterns of care

Feedback loop

Future Vision

Digital Transformation of the Continuum of Cancer Care





KAISER
PERMANENTE®



**Together ...
We can achieve
Anything**

