

# Using Innovative Technology Solutions That Work for Nurse Navigators to Improve Patient Care Outcomes

**Sangeeta Agarawal, RN, CAS, MS**  
Founder, Helpsy

BROUGHT TO YOU BY:

**OncologyNurseAdvisor**



# What Do Our Patients and Caregivers Need?

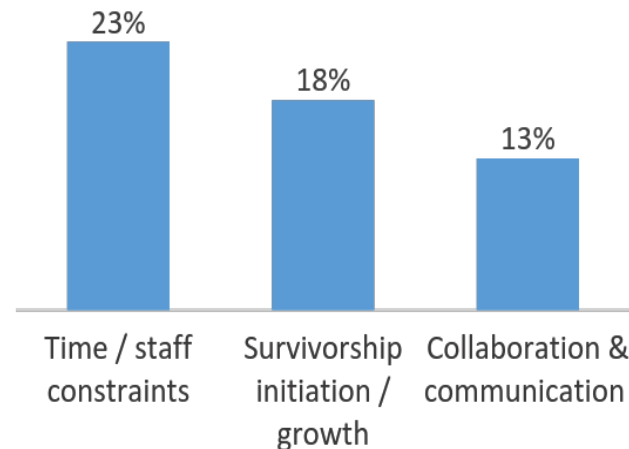
- Education
- Treatment options
- Clinical trials
- Side effect management
- Community/emotional support
- Financial support and other resources
- Remote monitoring and triaging
- Reminders for follow ups
- Rehab

# What Do We Need?

Need guidance on the following:

- Care team roles in survivorship program development
- Tools for efficiently creating survivorship programs
- Understanding detailed CoC requirements
- Motivating departments and community providers to collaborate
- Examples and best practices of survivorship programs

Top 3 issues for nurses



# What Do We Need? (cont'd)

- More time!
- Easier to provide resources
  - Treatment understanding and decisions for patients
  - Side effect management
  - Easy and personalized community resources
  - Clinical trials info
- Easier care-coordination
- Remote monitoring
- Automated triaging
- Telemedicine/easy communication with pt. at home

# Impact of Policies and Evolving Models

- IOM
- CMS
- Drug coverage and price transparency
- Outpatient care

*Do you want to speak to the doctor  
in charge or the nurse who really  
knows what's going on?*



# Tools That Can Help Nurses

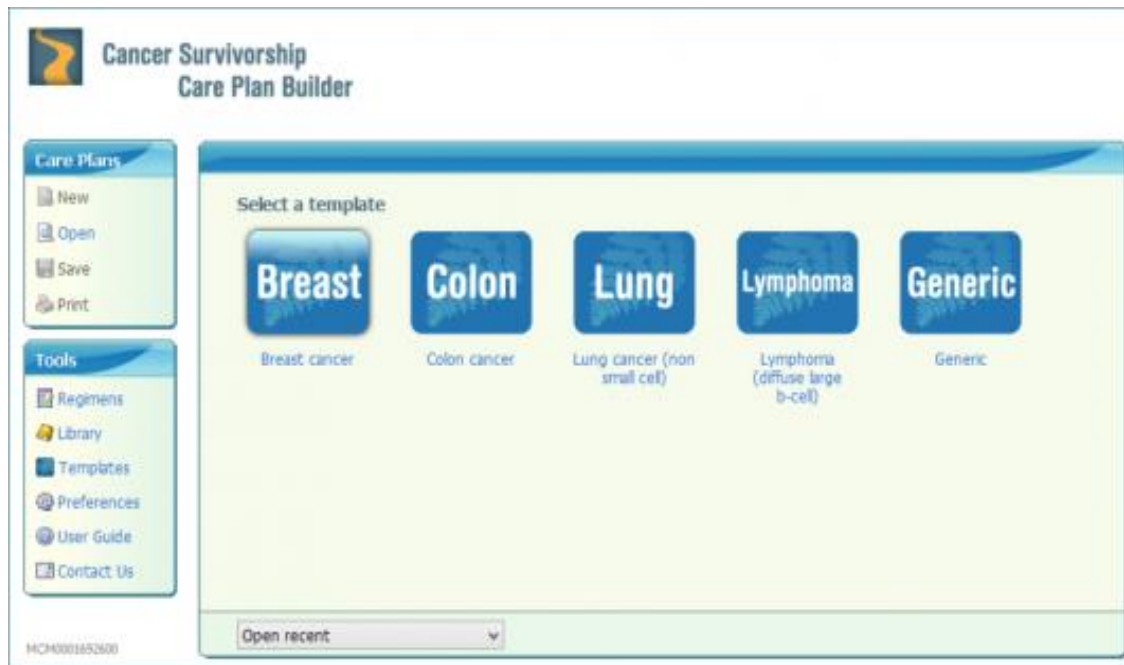
1. Care Planning Automation
2. Resources for cancer patients
3. Patient communities and social media
4. Clinical trials and cancer cure
5. AI based Solutions
6. Genomics and precision medicine

# Care Planning Automation

- Journey Forward
- CareVive/Survivorplan.io
- Helpsy
- Synapse
- Flatiron

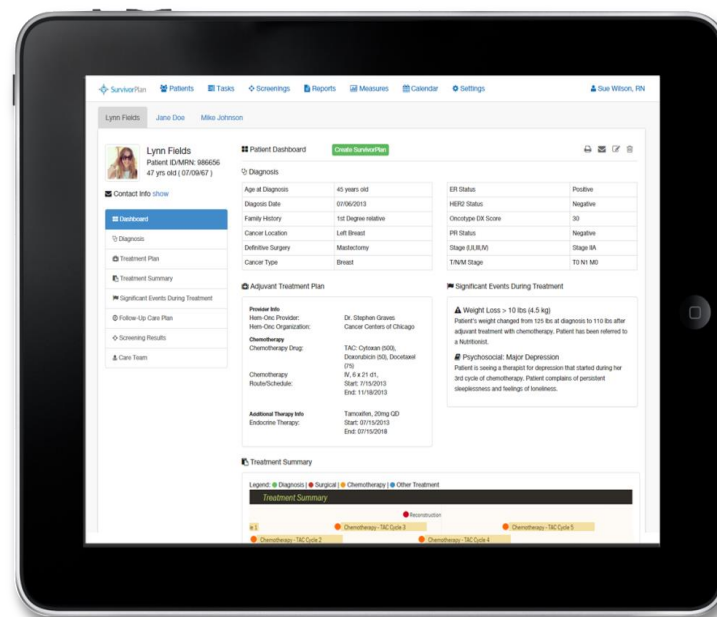
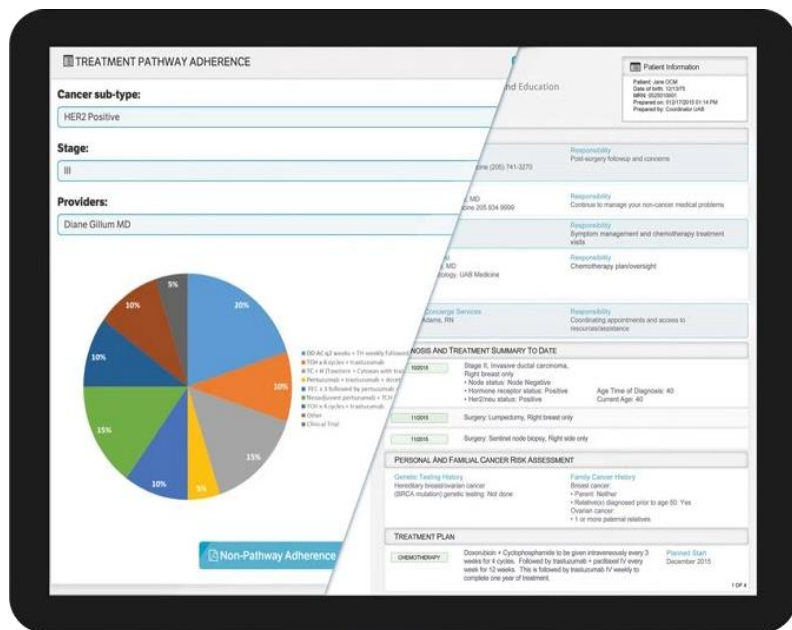


# Journey Forward (N,P)



The Cancer Care Plan Builder (Survivorship Care Plan Builder) is a free tool compliant with COC guidelines for oncology professionals that can help Professionals quickly make personalized Treatment Plans, Treatment Summaries, and Survivorship Care Plans for your patients.

# Carevive/Survivorplan.io (O,R,N)



Carevive and Survivorplan.io both automatically generate individualized Cancer Survivorship Plans from patient data.

# Helpsy (O,R,N)

Care Plan - Sangeeta Agarawal  
Last login: 07/13/2017 04:56:07 pm GMT

Health Profile Cancer List Cancer Profile **Care Plan** Health Tracker Messages Notes Documents

APPROVED Jul 13 2017 by Pat Curry [Print Care Plan](#)

Recommended Follow-up visits Chemotherapy Drug Information Symptom Management Referral Resources **Ongoing** Past

Recommended Follow-up Visits

These tests are due now, Please finish them and check off 'Visit Done'. There are past due, Please finish them and check off 'Visit Done'.

[Add New Treatment Plan](#)

Recommended Follow Up Visits	Frequency	Next Upcoming	TO DO
			<p>To adjust the size of the "Add notes" window, please drag the bottom-right corner of the window.</p>

Helpsy automatically generates individualized Cancer Survivorship Plans which includes anticipated side effects, treatment and self help guidelines, community resources, referral suggestions, follow up reminders, medication adherence reminders, and auto triaging.

# Synapse (O,R,N)

synapse

Product ▾ Customers ▾ Partners ▾ Company ▾ News ▾ [CONTACT](#)

## Powering precision medicine. Delivering the best cancer care.

Synapse enables healthcare providers to bring precision medicine to every cancer patient today.

**Intermountain Healthcare**

improved patient outcomes and reduced the cost of care with precision medicine.

[Learn how](#)

**Providence St. Joseph Health**

scaled precision medicine and clinical trials matching across their community and research clinics.

[Learn how](#)

**Henry Ford Cancer Institute**

uses real-world evidence from a national data-sharing network to improve cancer care in Michigan.

[Learn how](#)

Synapse enables precision cancer care by standardizing data, clinical workflows, and best practices and enables access to decisions for targeted therapies.

[www.synapse.com](http://www.synapse.com)

# Flatiron (N,O,R,H)

**cCauley M.D.,**  
logy, Los Altos C

**Treatment**

New: Flowsh  
Right click a d

Hide Perform  
ECOG Perf  
Karnofsky  
Hide General  
MD New Pa  
Hide CTCAE  
Left ventric  
Hide CTCAE  
Abdominal  
Alopecia  
Anemia-Hg  
Anorexia  
Arthralgia  
Blurred visi  
Chest Pain  
Chills  
Constipation  
Cough

**\*Tx Location:** Los Altos Office

Please pick a diagnosis that is supported in your documentation for administration of this therapy.

**Patient ICDs** New ICD-9 New ICD-10

**\*Reason (ICD)** 174.8: Malign Neopl Breast, other specified site/contig/overlap

**Selected ICDs** 174.8

**Stage:** Breast Cancer - Stage IIB (T2,N1b,M0,G1)  
(for highlighted selected ICD)  
ER=Positive,PR=Positive,HER2 IHC=Negative,Laterality=Right

**Tx Setting:** Neoadjuvant **Tx Intent:**

**Regimen:** AC (DOXOrubicin 60 mg/m2 /Cyclophosphamide 600 mg/m2) q 21 days x 4 cycles Followed by  
DOCEtaxel (100mg/m2) Q 21 days X 4 v:3.0

**Emetogenic Risk:** **Neutropenic Risk %:** **Add Premed**

**\*Start Date** 4/30/2015

**\*Skip generating orders until Cycle:** 1 **\*Day:** 1

**\*Body Weight: Actual (lb)** 141 **BSA** 1.8 **Change**

**\*Off Pathway Reason:**

**\*=Required Field**

- Select an option --
- Patient Refused
- 2nd Opinion from Academic Cancer Center
- Clinical Trial used in prior line
- Comorbidities preclude Pathway options
- Excess toxicities with On Pathway therapy
- Physician does not agree with Pathway
- Poor PS with no option on Pathway
- PS+: expected benefit from further therapy
- Treatment started by outside oncologist
- Treatment started prior to Pathway Go Live
- Insurance does not cover

Disclaimer: Patient names and data in the product screenshots are fictitious and for demonstration purposes only.

Flatiron provides careplan generation and EHR software to connect community oncologists, academics, hospitals, life science researchers, and regulators.

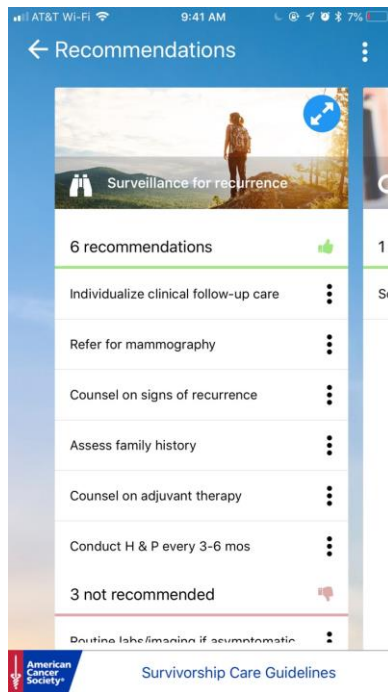
[flatiron.com](http://flatiron.com)

# Resources for Cancer Patients

- American Cancer Society
- Triage Cancer
- iCancer/Cancer care app (by Dana Farber)
- iThrive
- Can Surround
- Helpsy



# American Cancer Society (P,N,O,H)



The ACS provides cancer survivorship guidelines for follow ups and post-treatment care.



# Triage Cancer (P,N,O,C,Comm)



*...helping navigate cancer survivorship*

HOME ABOUT US SPEAKERS BUREAU EVENTS RESOURCES BLOG CONTACT US

## TRIAGE CANCER:

verb. \trē-'āzh,'kansən\ the assigning of priority order to projects on the basis of where time, funds, and other resources can be best used, are most needed, or are most likely to achieve success in navigating cancer survivorship issues.

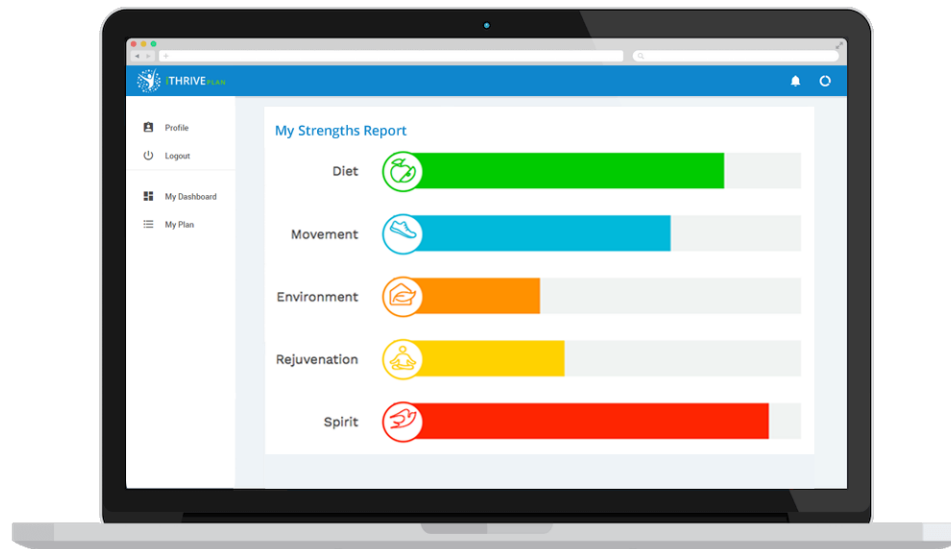
Triage Cancer provides cancer survivorship education to patients, survivors, caregivers, advocates, and health care professionals through education events, an international speakers bureau, and online materials and resources.

# iCancer by MedoCity (P,C,Comm)



iCancer allows patients to manage their medications, track and report symptoms, share progress reports, and connect with other cancer patients.

# iThrive (P,C,N)



iThrive allows patients to create their own individualized wellness plans.

# Can Surround (P,C)



Can Surround provides psychosocial support through digital technologies for people living with cancer.

# Helpsy (P,N,O,C)

Care Plan - Jordan Bell

[Print Care Plan](#)

Recommended Follow-up visits | Chemotherapy Drug Information | Symptom Management | Referral | **Resources**

Resources

- Breast Cancer**
  - Financial Assistance
  - Emotional Support
  - Transportation
  - Physical Wellness
  - Lodging
  - Food and Nutrition
  - Home and Family
  - Hospice and respite

**Emotional Support**

**Metastatic Cancer Support Group**  
N/A  
973-971-5169  
1  
Contact Method : [Website](#)  
It's a national resource.

**Breast Cancer Support Group**  
Cancer Care's Online Support Groups private, subscription only program; Telephone group for people diagnosed with stage IV Breast Cancer; Face-to-Face: New Jersey  
Jane Levy, LCSW at 800-813-4673, ext. 8356 or jlevy@cancercare.org. The 3rd Tuesday of each month, from 6:00 p.m. - 7:30 p.m., at the University Medical Center at Princeton's Breast Health Center, located at 300B Princeton Hightstown Road, East Windsor, NJ, Lois Glasser at 1-201  
1  
Contact Method : [Website](#)  
It's a national resource.

**Breast Cancer Support Group**  
N/A  
973-971-5169  
1  
Contact Method : [Website](#)  
It's a national resource.

**Triple Negative Breast Cancer Support Group**  
This 15-week online support group is for women diagnosed with triple negative Breast Cancer who are currently receiving treatment. In this group led by an oncology social worker, patients give support to each other and share resources and information.  
<http://www.cancer.org/treatment/supportprogramsservices/inssSourceSiteId=null>  
1  
Contact Method : [Website](#)  
It's a national resource.

**Breast Cancer Support Group**  
N/A  
732-324-5079  
1  
Contact Method : [Website](#)  
It's a national resource.

**Sharsheret**  
Sharsheret, Hebrew for "chain", is a national not-for-profit organization supporting young women and their families, of all Jewish backgrounds, facing Breast Cancer. Our mission is to offer a community of support to women diagnosed with Breast Cancer or at increased genetic risk, by fostering culturally-relevant individualized connections with networks of peers, health professionals, and related resources.  
Sharsheret Established: 2001 1086 Teaneck Road Suite 2G Teaneck, NJ 07666 <http://www.sharsheret.org/how-we-help-for-men/support>  
1  
Contact Method : [Website](#)  
It's a national resource.

**Metastatic Breast Cancer Support Group**  
This 15-week online support group is for people diagnosed with stage 4 metastatic Breast Cancer who are currently receiving treatment. In this group led by an oncology social worker, patients give support to each other and share resources and information. Please call for screening first and to register. 1) For early stage Breast Cancer. 2) For metastatic Breast Cancer. 3) For young women with hereditary Breast  
1  
Contact Method : [Website](#)  
It's a national resource.

**Adenoid Cystic Carcinoma Organization International**  
The purpose of ACCOI is to create a worldwide community of ACC patients and supporters who share information, support and hope while working together to help develop a cure for ACC.  
PO Box 112186  
1  
Contact Method : [Website](#)  
It's a national resource.

**PA Law Help**  
PALawHELP.org is a guide to legal information and free civil legal services for low-income persons and seniors in Pennsylvania. Here you can locate information on a variety of legal issues, as well as information on how to contact programs providing legal assistance in Pennsylvania. This includes basic eligibility and contact information for the programs providing free legal assistance in Pennsylvania.  
1  
Contact Method : [Website](#)  
It's a national resource.

Helpsy provides patients with local and national resources specific to their cancer.

# Patient Communities and Social Media

- Smart Patients
- Gryt/Stupid Cancer
- Social Media Communities



# Smart Patients (P,C,Comm)

The screenshot displays the Smart Patients website interface. At the top, there is a navigation bar with the Smart Patients logo, a search bar, and links for Settings and Sign out. The main content area is divided into three columns. The left column shows a user profile for 'allen' with a bio, a list of conversations, and a link to clinical trials. The middle column, titled 'my conversations', shows a list of conversations. The first conversation is titled 'bone mets from kidney cancer' and was started by Vanessa on August 3, 2013. The conversation text describes a husband's diagnosis with kidney cancer and the user's request for advice. The second conversation is a welcome message for the kidney cancer community. The right column contains a 'Share Feedback' section and a 'Need Help?' section.

**Smart Patients** demo

search for conversations

Settings | Sign out

**allen**

0 | 0

Conversations

my conversations starred 2

all conversations

Clinical trials

**my conversations**

show new posts only

**START A CONVERSATION**

**bone mets from kidney cancer**

Started by Vanessa on August 3, 2013 (last reply on August 5, 2013)

My husband was diagnosed with kidney cancer (clear cell) in 2010. He had a nephrectomy and did well on Sutent for a couple of years. In June of 2012 we switched to Votrient because of growth of some lymph nodes. We just found out that he has a metastasis in one of his vertebrae.

Can anyone who has been through this tell us what to expect? We're of course nervous, and also want to be prepared with the right questions for our next appointment, which is on Monday.

tags: bone mets kidney cancer

REPLY

5 unread replies by olivia, Kenneth, Elizabeth, Vanessa, Barry D

**Welcome to our community for kidney cancer**

Started by robin on July 22, 2013

Welcome to everyone joining the kidney cancer community. Please introduce yourself and ask for help. Scroll down to the Reply box and start typing. Whenever you're ready to start a new conversation, look for the "Start a conversation" button at the top of each conversation page.

Many separate discussions are already underway for renal cell carcinoma and its rare subtypes. You will be able to find them with the tag "kidney cancer."

At this website, patient discussion and networking are...

**Share Feedback**

If you have any comments or suggestions on how we can improve Smart Patients click on the 'site feedback' tag and start a conversation.

site feedback

**Need Help?**

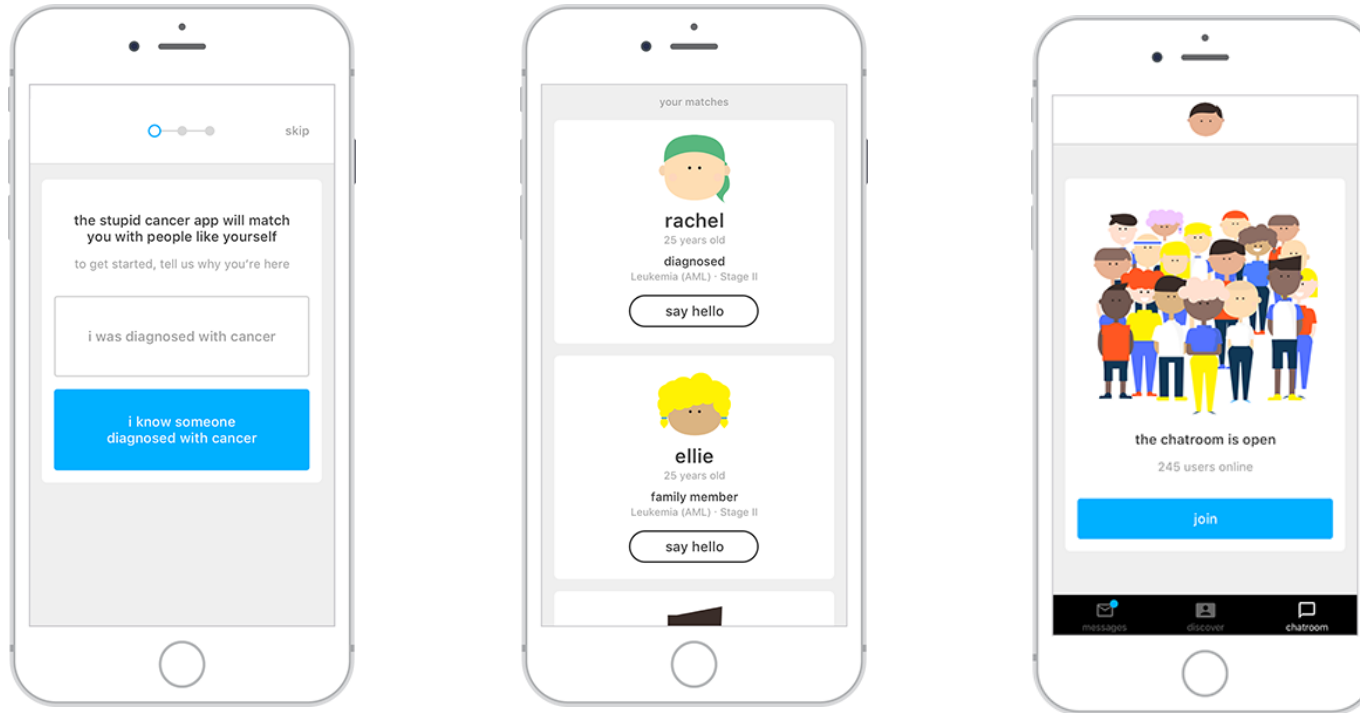
If you need help or advice about this web site, about your disease, your treatment or anything else - just start a conversation.

help

Smart Patients is an online community for patients and families affected by a variety of illnesses.

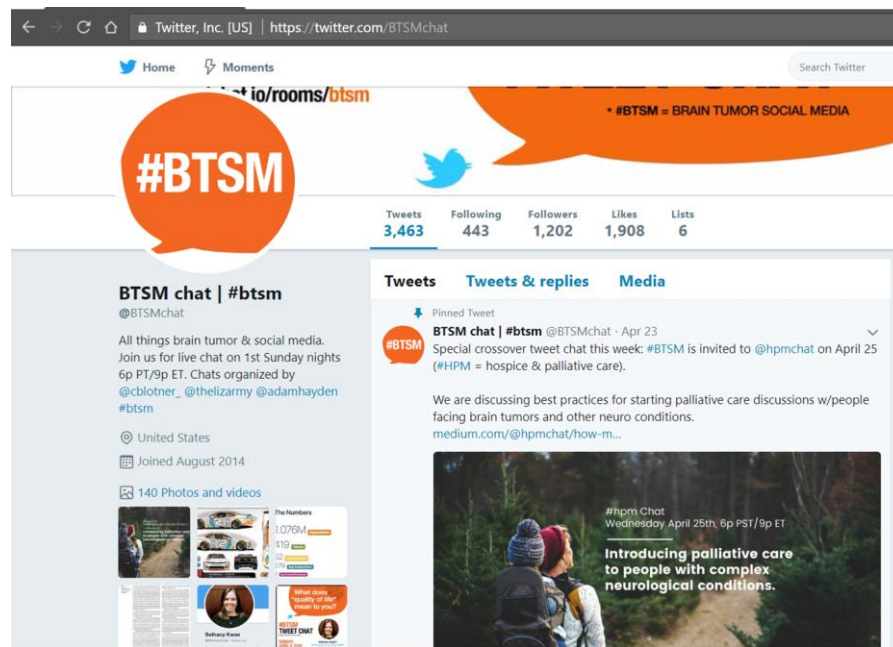


# Gryt/Stupid Cancer (P,C,Comm)



The Gryt Stupid Cancer mobile app connects the young adult cancer community through education and building relationships.

# Social Media Communities (P,C,Comm)



On social media networks such as Twitter, there are tightly knit communities of members that provide information, emotional support, and host weekly chats. Examples on Twitter are #bcsbm (breast cancer) and #btbm (brain tumors).

# Clinical Trials and Cancer Moonshot

- Flatiron
- Oncoverse
- Helpsy
- Science 37
- Mendel.ai

## Non-profits/Foundation

- Cancer Commons
- Biden Cancer Initiative

# Flatiron (N,O,R,H)

**cCauley M.D.,**  
logy, Los Altos C

**Treatment**

New: Flowsh  
Right click a d

Hide Perform  
ECOG Perf  
Karnofsky  
Hide General  
MD New Pa  
Hide CTCAE  
Left ventric  
Hide CTCAE  
Abdominal  
Alopecia  
Anemia-Hg  
Anorexia  
Arthralgia  
Blurred visi  
Chest Pain  
Chills  
Constipation  
Cough

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Please pick a diagnosis that is supported in your documentation for administration of this therapy.

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- Treatment started by outside oncologist
- Treatment started prior to Pathway Go Live
- Insurance does not cover

Disclaimer: Patient names and data in the product screenshots are fictitious and for demonstration purposes only.

Flatiron provides careplan generation and EHR software to connect community oncologists, academics, hospitals, life science researchers, and regulators.

# Oncoverse (O,N,R)

Oncoverse for Dignity Health Test Network

Vahid Kowsari Oncovering Logout

Notifications Presenting Cases Evaluating Cases **Consulting Cases** Cases Manage Users

### Supporting Studies & Reports

**Studies with Reports**

Type	Description	Number of Images	Study Created	Uploaded
CT	CER/CT	557	02/01/2005, 04:00 AM	12/21/2016, 09:31 AM
Sample document				12/21/2016

**Documents & Images**

Another report	12/21/2016
A sample image	12/21/2016
New Image	12/29/2016

### Evaluating Physicians On Case

Oncovering Download Treatment Plans Update Case

> Peyvand Mohseni	Radiation Oncology	<span>View</span>
> Peyvand Mohseni (Non SAML)		Incomplete
> Daniel Everist		Incomplete
> Ian Minto	Thoracic Surgery	<span>View</span>

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Oncoverse provides care collaboration and virtual conference tools for oncology teams.



# Science 37 (P,N,O,R)

The screenshot displays the NORA™ web application interface. On the left, a mobile app preview shows a calendar view for April 25-27, 2017, with tasks like 'Photos Form' and 'Registry Survey'. The main desktop view shows a dashboard with navigation tabs: DASHBOARD, TASKS (1), LEADS, SURVEYS, and REPORT. The current view is 'Leads' for 'Science37 Qualifying Trial / Leads'. It features a profile for Amelia Harper (NORA ID: 987965, Subject #001) with a 'Contacting' status. Below this is a 'Task List' table with columns: Task, Assigned To, Due Date, Status, and Action.

Task	Assigned To	Due Date	Status	Action
Call #1	Patrick Lee	11 Apr 2017	Completed	Details
E-mail #1	Patrick Lee	11 Apr 2017	Past Due	Details
Call #2	Patrick Lee	11 Apr 2017	Coming Due	Details
E-mail #2	Patrick Lee	11 Apr 2017	Not Started	Details
Discuss Trial	Patrick Lee	11 Apr 2017	Not Started	Details

On the right side of the desktop view, there is a 'Snapshot' section with fields for State, Timezone, Best time contact, E-mail, Phone, Language, Preference, and Source(s). Below this is a 'Contact' section with fields for Coordinator and Investigator.

Science 37 provides tools to access and participate virtually in clinical trials.

# Helpsy (P,N,O,R)

The image displays two screenshots of the Helpsy web application interface, showing patient management and study tools.

**Left Screenshot (User: JORDAN BELL):**

- Assessments** section:
- MQOLS - CA - Multidimensional Quality of Life Scale - Cancer**
- 0 is not at all positive. 10 is extremely positive**
- Assessment items and scales:
  - 1 Fatigue: 0 1 2 3 4 5 6 7 8 9 10
  - 2 Appetite changes: 0 1 2 3 4 5 6 7 8 9 10
  - 3 Aches or pain: 0 1 2 3 4 5 6 7 8 9 10
  - 4 Sleep changes: 0 1 2 3 4 5 6 7 8 9 10
  - 5 Constipation: 0 1 2 3 4 5 6 7 8 9 10
  - 6 Nausea: 0 1 2 3 4 5 6 7 8 9 10


**Right Screenshot (User: SANGEETA AGARAWAL):**

- Current Study** section:
- Zhang, Alice**
- Assessments** section:
- Assessment items:
  - EORTC QLQ C30** (European Organization for Research and Treatment of Cancer Quality of Life Questionnaire)
  - NCCN** (Distress Thermometer and Problem List for Patients)
- Back** button

Helpsy provides patient management tools along with study tools to perform clinical trials.



# Mendel.ai (P,O,R)


Mendel.ai

[Find Treatments](#)
[Learn More](#)
[About Us](#)
[Go Premium](#)
[Log In](#)

## Find breakthrough treatments for your cancer

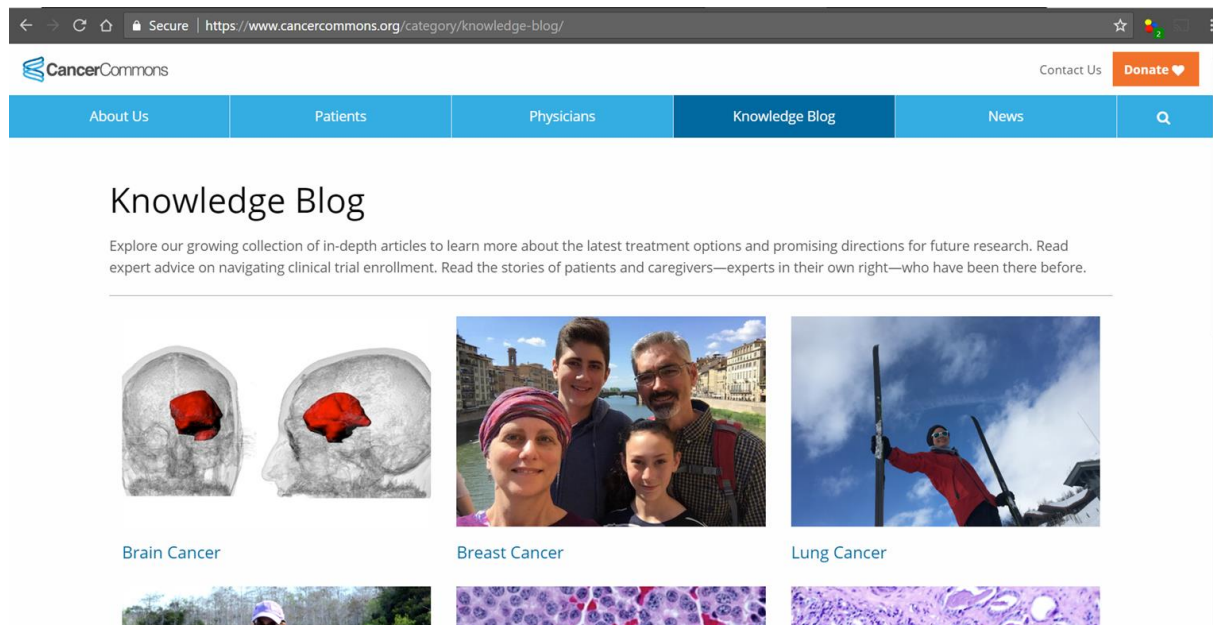
<b>Cancer Type</b> Type your cancer type	<b>Location</b> City, state	<b>Age</b> Type your age	<b>Gender</b> Pick gender
---	--------------------------------	-----------------------------	------------------------------

Start
Search by medical records




Mendel.ai automates matching cancer patients to clinical trials through analysis of personal medical history and genetics.

# Cancer Commons (P,N,O,R)



The screenshot shows the Cancer Commons website's Knowledge Blog section. At the top, there's a navigation bar with links for 'About Us', 'Patients', 'Physicians', 'Knowledge Blog' (which is highlighted), 'News', and a search icon. A 'Donate Us' button is also present. Below the navigation bar, the 'Knowledge Blog' title is followed by a brief description: 'Explore our growing collection of in-depth articles to learn more about the latest treatment options and promising directions for future research. Read expert advice on navigating clinical trial enrollment. Read the stories of patients and caregivers—experts in their own right—who have been there before.' Below this text, there are three featured article thumbnails. The first is for 'Brain Cancer' and shows two 3D brain scans with a red tumor. The second is for 'Breast Cancer' and shows a family of four smiling. The third is for 'Lung Cancer' and shows a person in a red jacket climbing a tall structure. Below these thumbnails are three microscopic images of cancer cells.

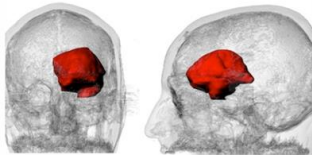
← → ↻ 🔒 Secure | <https://www.cancercommons.org/category/knowledge-blog/> ☆ 2 ⋮

 Cancer Commons Contact Us [Donate Us](#)


About Us Patients Physicians **Knowledge Blog** News 🔍

## Knowledge Blog


Explore our growing collection of in-depth articles to learn more about the latest treatment options and promising directions for future research. Read expert advice on navigating clinical trial enrollment. Read the stories of patients and caregivers—experts in their own right—who have been there before.



Brain Cancer



Breast Cancer



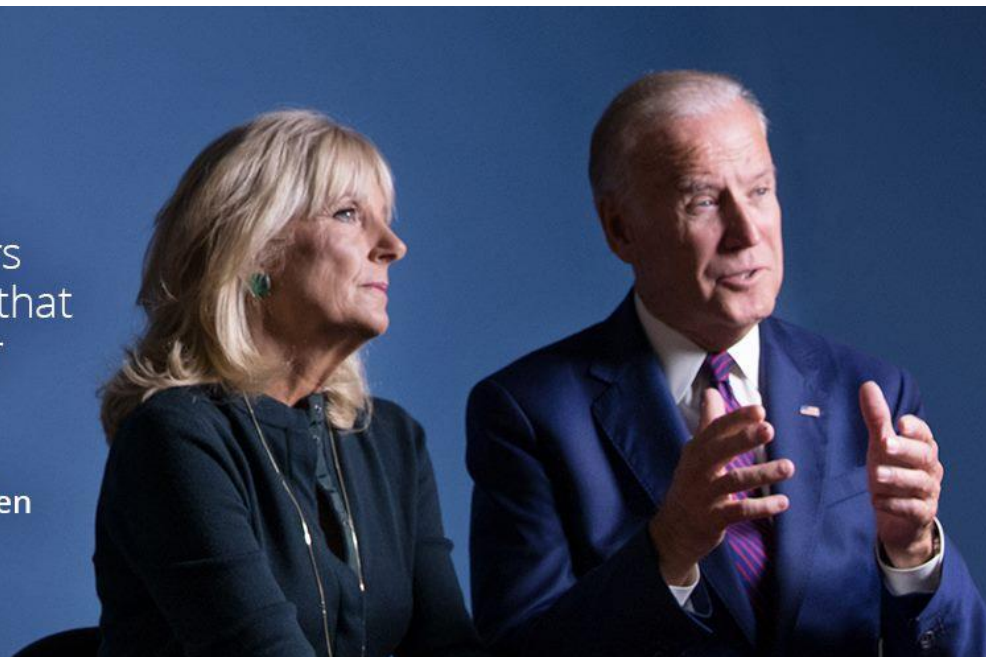
Lung Cancer

Cancer Commons helps identify the best options for treating an individual's cancer. Members contribute to and benefit from a knowledge base of case histories, treatment insights and rationales, clinical trials, and patient outcomes and experiences.

# Biden Cancer Initiative (N,O,R)

Every day, every minute matters to patients and we must bring that sense of urgency to our cancer research and care systems.

| Joe and Jill Biden



The Biden Cancer Initiative mission is to develop and drive implementation of solutions to accelerate progress in cancer prevention, detection, diagnosis, research, and care.

# AI Based Solutions

- GoogLeNet
- IBM Watson
- Optellum
- Behold.AI
- X2AI

# GoogLeNet (O,R)

GoogLeNet has been used to diagnose cancer from patient scans.

<https://ai.googleblog.com/2017/03/assisting-pathologists-in-detecting.html>

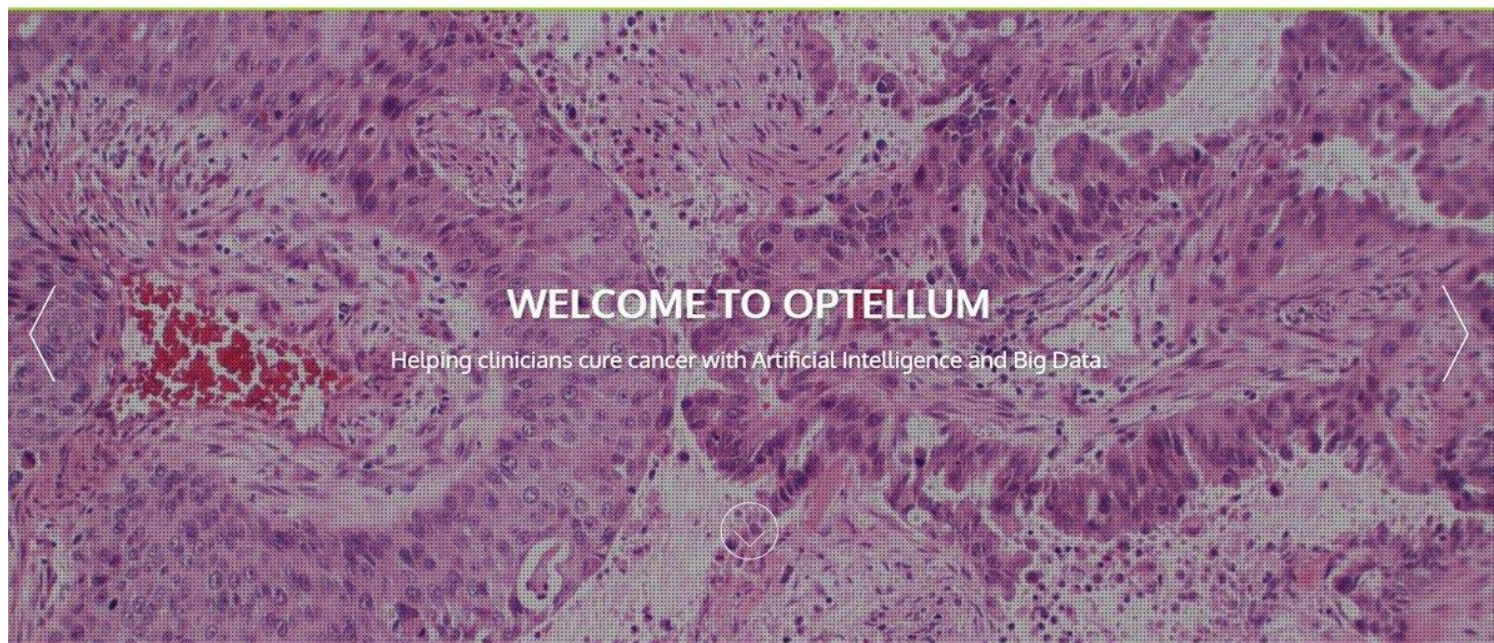
# IBM Watson (N,O,R)

The screenshot displays the IBM Watson for Oncology interface. On the left, a sidebar titled 'Treatments' lists four options: CMF (Cyclophosphamide/Methotrexate/Fluorouracil), TC (Docetaxel/Cyclophosphamide), CEF (Cyclophosphamide/Epirubicin/Fluorouracil), and CAF (Cyclophosphamide/Doxorubicin/Fluorouracil). The CMF option is selected and highlighted in blue. The main panel, titled 'Details for CMF', contains four tabs: 'Rationale', 'Additional Publications', 'Administration', and 'Drug Information'. The 'Rationale' tab is active, showing a green checkmark icon and the text 'Rationale supporting this treatment'. Below this, it states 'This is recommended when the patient has a high Oncotype DX'. A second section, 'MSK curated literature about this treatment', features a book icon and a citation: 'Two months of doxorubicin-cyclophosphamide with reinduction therapy compared with 6 months of cyclophosphamide, and fluorouracil in positive-node breast cancer: results from the Breast and Bowel Project B-15.' followed by a right-pointing arrow.

IBM Watson analyzes patient clinical information in order to recommend cancer treatments.



# Optellum (O,R)



Optellum uses AI and Machine Learning to help diagnose and treat lung cancer.

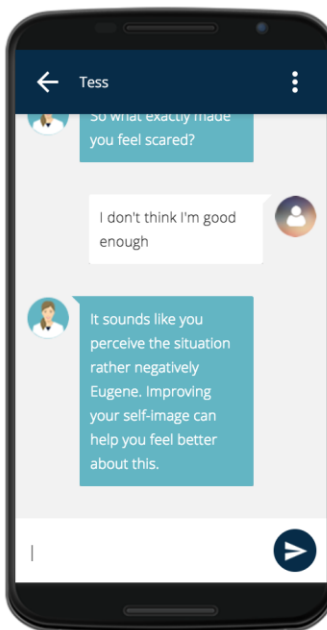


# Behold.AI (O,R)










[behold.ai](https://behold.ai)

Behold.AI uses AI to help diagnose radiology scans.

# X2AI/WoeBot (P)



## USE CASES

-  COGNITIVE EMOTIONAL BEHAVIORAL THERAPY
-  PSYCHOLOGICAL COACHING
-  NATURAL EVALUATION OF EHEALTH COURSE
-  QUESTIONNAIRE AUTOMATION
-  IMPROVING THERAPY ADHERENCE
-  MENTAL SUPPORT WHILST WITHIN A MEDICAL SETTING
-  COPING WITH MENTAL ISSUES TIED TO MEDICATION
-  MAKING PSYCHOLOGICAL AID MORE APPROACHABLE
-  CAREGIVER BURNOUT PREVENTION

X2AI is an AI-driven Mental Health chatbot that coaches people through tough times using text message conversations.

# Genomics/Precision Medicine

- Illumina/Color Genomics/23andMe/  
Futura Genetics/Rosetta Genomics/  
Foundation Medicine
- IBM Watson Genomics
- Precision Oncology

# Illumina/Color Genomics/23andMe/Futura Genomics/Rosetta Genomics/Foundation Med (P)

[illumina.com](https://illumina.com) [color.com](https://color.com) [23andme.com](https://23andme.com) [futura-genetics.com](https://futura-genetics.com) [rosettagx.com](https://rosettagx.com) [foundationmedicine.com](https://foundationmedicine.com)

All of these companies offer testing kits to evaluate genes and SNPs associated with a predisposition towards various cancers.

[blog.color.com/colors-journey-to-the-heart-e5a39c517440](https://blog.color.com/colors-journey-to-the-heart-e5a39c517440)

# IBM Watson Genomics (O,R)

<https://www.ibm.com/watson/health/oncology-and-genomics/genomics/>

IBM Watson Genomics uses AI to analyze genomics data in order to better provide precision cancer treatments.

[arstechnica.com/science/2014/03/ibm-to-set-watson-loose-on-cancer-genome-data/](http://arstechnica.com/science/2014/03/ibm-to-set-watson-loose-on-cancer-genome-data/)

# Precision Oncology (N,O,R)



# PRECISION<sup>SM</sup> ONCOLOGY

Precision Oncology provides an integrated clinical trial and genomic diagnostic solution.



# Tools That Can Help Nurses

1. Care Planning Automation
2. Resources for cancer patients
3. Patient communities and social media
4. Clinical trials and cancer cure
5. AI based Solutions
6. Genomics and precision medicine



Technology won't replace us. Rather,  
we will mold technology to increase  
our superpower multifold.

Sangeeta Agarawal, RN, CAS, MS, Founder  
[www.helpsyhealth.com](http://www.helpsyhealth.com)

OncologyNurseAdvisor  
**navigation**  
**SUMMIT**

# Development of a Patient Navigation Evaluation App to Improve Outcomes

Linda U. Krebs, PhD, RN, AOCN

Associate Professor Emerita

University of Colorado College of Nursing

Aurora, Colorado

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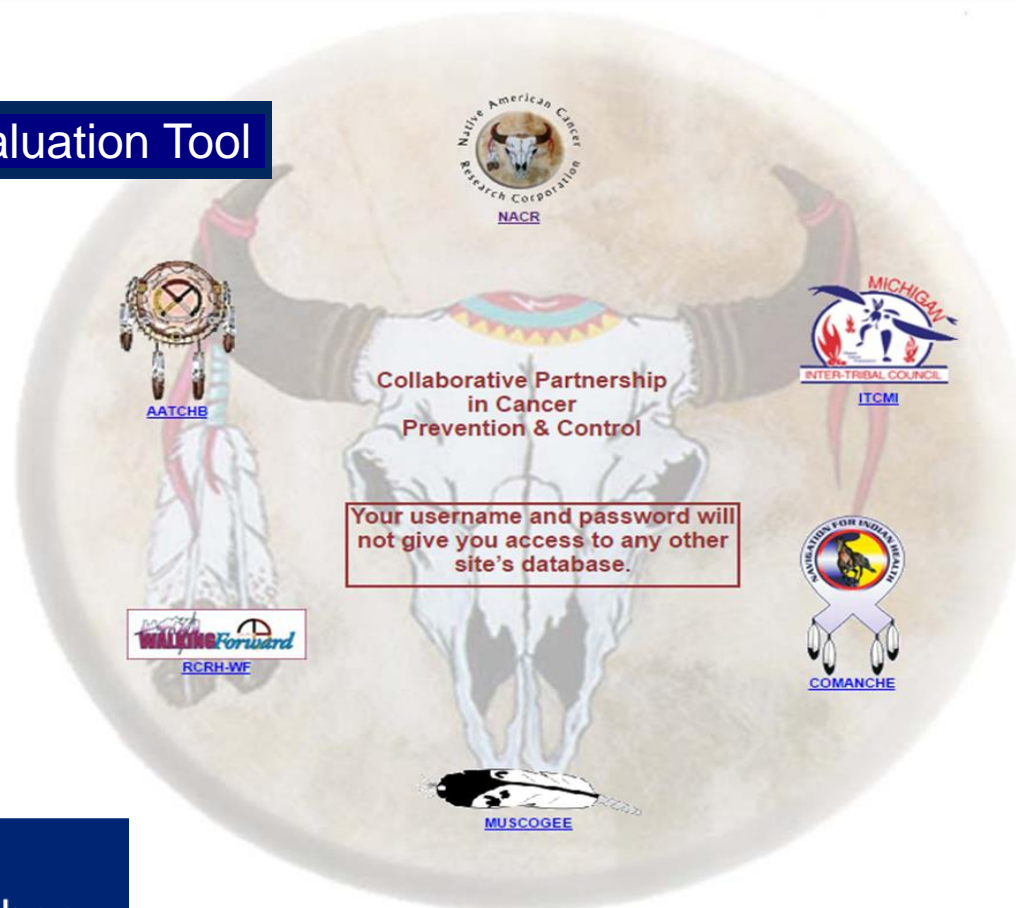
# NACR Patient Navigation Grant History

- In 1994, 1st Patient Navigation study funded
  - Robert Woods Johnson Foundation
- Between 1997-2015, 8 sequential navigation studies
  - 3 from Susan G. Komen for the Cure®
  - 5 from National Institutes of Health
- 2018 – Survivorship grant using PNs under NIMHD review

# NACR's Web-based Evaluation Program

- Created in 2005 via Mayo Clinic's "Spirit of E.A.G.L.E.S Community Network Programs -1" (PI: Kaur; NCI U01 CA 114609)
- Navigation data fields expanded for "Native Navigators and the Cancer Continuum" (PI: Burhansstipanov; R24 MD 002811)
- <http://www.natamcancer.org/nacreval/nacreval.html>

## NACR Online Evaluation Tool



TRAINING

Username: train  
Password: choochoo





**Collaborative Partnership in Cancer Prevention & Control**  
**NACR NCMHD Native Navigators and the Cancer Continuum**

Log Out

?  
 Help

**Remember to log out.**

If you do not, no one else can get into this database from your site.

Home	Staff	Mentoring	Committees	Resources	Partnerships	Grants/Studies
Products	Dissemination	Navigation	NNACC	Needs Assessment	Reports	

**WELCOME**

Hello, lindab:

Welcome to Native American Cancer Research Corporation (NACR) Online Evaluation Program. This program is partially supported and used for the "Native Navigators and the Cancer Continuum" (NNACC) [PI: Burhansstipanov, R24MD002811] grant, Native Navigation across the Cancer Continuum in Comanche Nation (PI: Eschiti), and the American Indian Women's Health Partnerships [PI: Seals CDC 1U57 DP001138] This database is organized by sections represented by the gray buttons above. To go to a given section, click on one of these buttons.

Please remember to submit your data (blue button) at least every 5 minutes and to always log out (red button) when finished. Thank you.

**REPORTS**

Grants / Studies	Navigation	Dissemination	Products
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## Navigation Activities for this interaction:

	How long did this interaction take (in min)?		
	1	2	3
Help w/ Advance Directives Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Help w/ Benefit Forms - IHS	<input type="checkbox"/>	<input checked="" type="checkbox"/> 45	<input type="checkbox"/>
Help w/ Benefit Forms - Medicaid	<input type="checkbox"/>	<input checked="" type="checkbox"/> 30	<input type="checkbox"/>
Help w/ Benefit Forms - Medicare	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Help w/ Benefit Forms - Private Ins.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Help w/ Benefit Forms - VA	<input type="checkbox"/>	<input checked="" type="checkbox"/> 45	<input type="checkbox"/>
Help w/ Cancer Pain Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Help w/ Cancer Rehabilitation (includes, exercise, ways to adapt to physical changes brought on by cancer Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Help w/ Childhood cancer resources Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Help w/ Complementary and Alternative Treatment ( Includes, herbs, teas, ) Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Help w/ Employment Issues Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Help w/ End of Life/Hopice Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Help w/ Fertility Issues Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Help w/ Finacial Assistance Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Help w/ Finding a doctor or other health professional Resources	<input type="checkbox"/>	<input checked="" type="checkbox"/> 30	<input type="checkbox"/>
Help w/ Identifying HC Provider	<input type="checkbox"/>	<input checked="" type="checkbox"/> 10	<input type="checkbox"/>
Help w/ Information on dealing with insurance issues Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Help w/ Legal assistance and information Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Help w/ Lodging - Followup	<input type="checkbox"/>	<input checked="" type="checkbox"/> 25	<input type="checkbox"/>

### Navigation Activities - Report Totals - pg4

Time: hrs	#	Treatment:
1	7	Help finding a healthcare provider/ clinic
2.25	15	Help setting up medical appointment
3.58	5	Reminder call (or visit) for treatment appointment
11.4	18	Accompany patient to appointment
5.08	20	Help w/Obtaining Health Information
1.33	4	Help w/Childhood cancer resources Resources
	19	Help patient and family ask questions
6.87	37	Help patient communicate with provider about co-morbidity
.33	2	Help with paperwork for IHS
.25	1	Help with paperwork for Medicaid
1.25	3	Help with paperwork for Medicare
1.67	8	Help w/paperwork for St/Foundation program
	0	Help w/paperwork for Private Insurance
	0	Help w/paperwork for VA
26	13	Help with transportation to treatment
	0	Help with lodging for treatment

Time: hrs	#	Treatment:
.75	1	Help w/lodging and trans for family during patient's treatment (away from home for days, weeks, months)
.5	1	Help w/child/elder supervision during appointment
3.33	15	Help w/family education about the patient's cancer
.27	2	Help w/employment/career counseling for patient
3.5	12	Help w/obtaining a Treat Plan from HC provider/clinic
.25	1	Help w/support for children/elders during cancer treat
6.02	27	Help with addressing patient's side effects from cancer or treatments
2.33	8	Help w/Trad Indian Med healers/Med Man/Woman
.75	2	Help w/information about clinical trials opportunities
2.1	8	Help w/Info on dealing with insurance issues Resources
	0	Intervening w/ IHS
.83	1	Intervening w/ Medicaid
.75	1	Intervening w/ Medicare
	0	Intervening w/ Private Ins.
	0	Intervening w/ VA

### Quality of Life / Recovery:

4.07	20	Help w/ Cancer Rehabilitation
6.58	20	Help finding cancer support info programs
9.45	45	Help w/ Peer Support Resources
12.5	37	Help w/ Quality of Life and supportive care Res
.58	8	Help w/ Complementary and Alternative Treat
.67	5	Help w/Trad Indian Med healers/Man/Woman
1.17	4	Help w/Employment issues
.17	4	Help with Fertility issues
2.42	8	Help with NACR's Memorial Fund Applications
8.75	20	Help with Financial Assistance resources
.92	4	Help finding a healthcare provider
1.5	6	Help with legal assistance and information

3	19	Help with nutrition resources
3.5	14	Help w/professional counseling support services
40.88	33	Help with transportation for follow-up services (screenings for other diseases, other cancers)
4.07	20	Help w/addressing patient's side effects from cancer or treatments (fatigue, skin reactions, amputations)
15.42	2	Help w/cult issues related to recovering from cancer experiences (temporary surrender of sacred pipe during hair loss side effect from treatments)
4.23	20	Help with information about clinical trials QOL / supportive care opportunities
3.58	10	Help w/daily living issues
.58	4	Help obtaining recommended cancer medications

# Rationale for Developing a Tablet App

- Portable - easier to use in the field
- Does not require Internet access for data entry
- Multiple pull-down menus (more maneuverable)
- Real-time data entry; data input easier and more accurate
- Summaries specific to individual patients
- Easier/more tailoring options for reporting functions
- Provides billing documentation
- Includes patient perspectives on navigation services

# **“A Tool to Improve Evaluation of Patient Navigation Services in Underserved Populations”**

(PI: Burhansstipanov, 1R43 MD011350-01)

- Linda Burhansstipanov, MSPH, DrPH (CO)
- Linda U. Krebs, RN, PhD, AOCN, FAAN (CO)
- Sheikh Iqbal Ahamed, PhD, Ubitrix (WI)
- Mark Dignan, PhD (KY)
- Lisa Harjo, MEd (CO)
- Corrie Santos, PhD (MN)



# Research Question

- “Can an existing online patient navigation documentation and evaluation program be modified to create an easy to use tablet app that can track a PN’s activities with cancer survivors, function in multiple settings, and produce data that can be used for the Commission on Cancer and other appropriate navigation accreditation?”



# Project Mechanisms

- Expert Advisory Panel
- Patient Navigation Advisory Committee
- Informant Interviews (administrators, supervisors, PNs)
- PN Focus Group
- Usability Tests (3)
  - Supervisors/Administrators
  - PNs
  - App Developers/Tech Experts

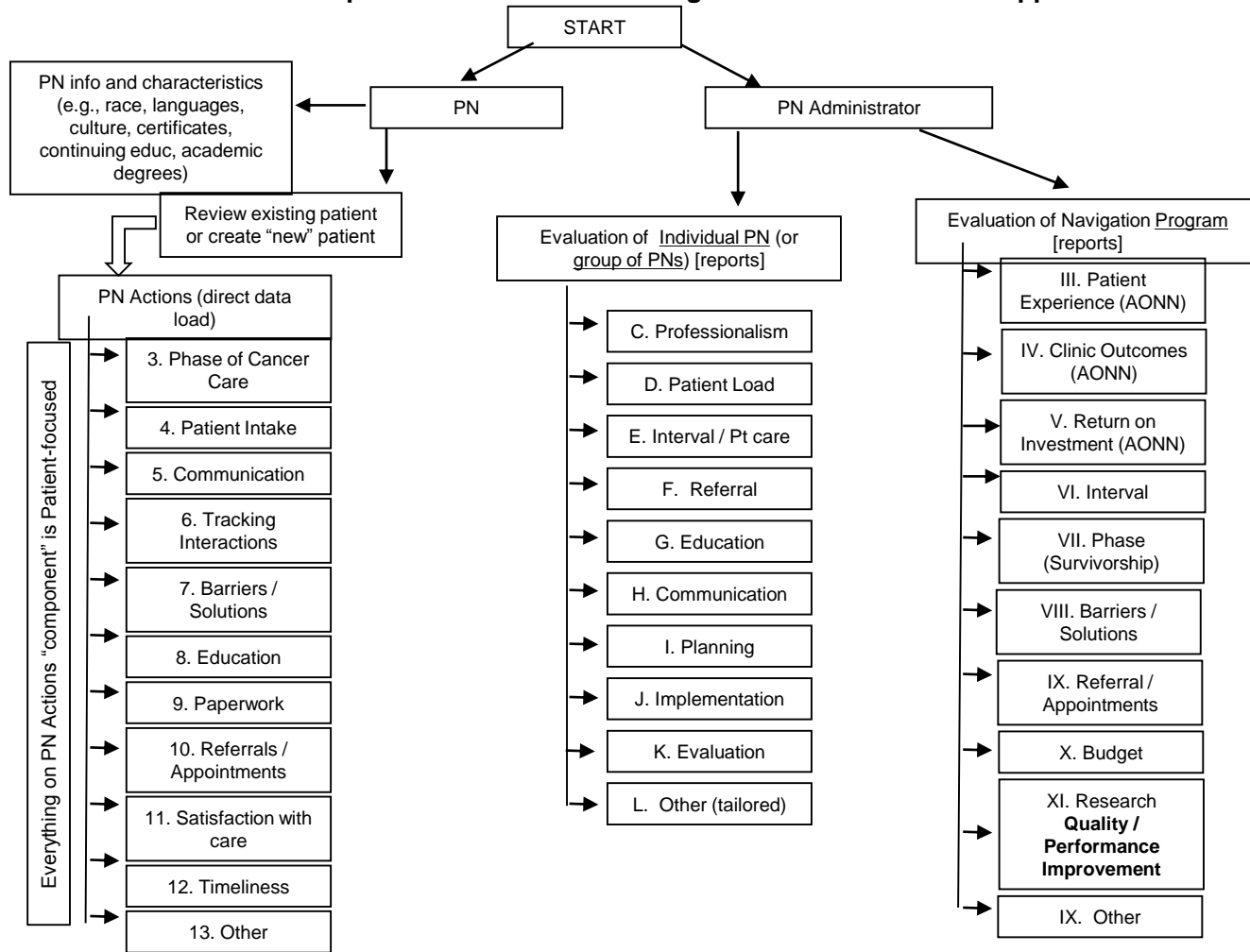
# Aims

- Aim 1: Gather input from an Expert Advisory Panel, a Patient Navigator Advisory Committee, key informant interviews, and a focus group
- Aim 2: Conduct 3 usability tests to determine ease-of-use, comprehensiveness, effectiveness, and usefulness of the fully functioning tablet app for patient navigation documentation and evaluation

## Aims (cont'd)

- Aim 3: Based upon Expert Advisory Panel consensus and Patient Navigator Advisory Committee guidance, determine the feasibility of the tablet app for expansion in Phase II
  - All benchmarks attained (related to each project activity)
  - Pricing recommendations

# Three Components of the Patient Navigation Evaluation Tablet App



Visit No: Visit\_1



Patient Contact

Demographic

Health Status



App Tutorial



About



Help



Settings



## Demographic

Gender



Sexual Orientation



Birth



Ethnicity



Religion



Education



# Phase I Outcomes

- Project took longer than expected
- Benchmarks – all met
- Pricing
  - Annual licensing fee
  - Annual subscription plan (sliding scale based on number of users)
  - Monthly support service
- Usability Tests results
  - UT 1 & 2 – usable, efficient, comprehensive + additional comments/suggestions for Phase II
  - UT 3 - no concerns about technology or ability to be fully functional



## Phase II Plans

- Content for the full cancer continuum
- Changes based on guidance for Phase I Aims 1 and 2 (buttons, new features)
- Multiple templates for report functions and customizing the app to individual settings
- Interface with EHRs (e.g., Epic, Cerner, RPMD)
- Develop for Android operating system

## Phase II Goal

- To expand, enhance, implement, and evaluate the current Phase I patient navigation evaluation app to create an easy-to-use, fully functioning app that addresses the full cancer continuum and can be tailored to meet the needs and reporting requirements of an individual patient navigation program and includes a tutorial, website, and helpline.

## Phase II Aims

- Aim 1. Develop an expanded app that incorporates all phases of the cancer continuum (outreach through end-of-life) in iOS programming and can be tailored for an individual navigation program
- Aim 2. Develop, implement, and evaluate (a) an app tutorial (hard copy and video), (b) app user guide, and (c) a website and phone support protocol and program
- Aim 3. Conduct usability interviews on the fully functioning app including its content, functions, and support materials and protocols

## Status

- Phase II application submitted
- Awaiting funding results
- If not funded, will pursue other options for development

**Questions?**

**Thank You!**

