

Maximizing the Value of Genetic Counseling, Testing, and High Risk Clinic Services

Common Challenges

Generating Referrals & Navigating Patients



The manual process of finding patients that meet criteria is error-prone and time consuming

Availability of Genetic Counseling Resources



Genetic specialists spend 50% of their time on admin work that could be spent on patient care

Clinical Follow-up with High Risk Patients



Lack of patient follow-up leads to poor adherence and leakage

4

Generating Referrals

How to change referral patterns and increase utilization of high risk services

The Paper Form

- Pros: very simple to implement and easy to handle
- Cons: Requires humans to evaluate referrals leading to a complex, ever-changing set of guidelines
- Cons: Requires frequent updates to keep retraining costs to stay up to date with changing guidelines
- Cons: Lower patient accuracy in reporting information due to "multi-segmented" questions

Allele HealthCare - Breast Health Services
Hereditary Cancer Risk Assessment Form

Family History Questions:

N	A family history with 3 or more breast cancers on the same side of the family diagnosed at any age? (This could include the patient)
N	A family history of 3 or more breast, ovarian, or pancreatic cancers on the same side of the family diagnosed at any age? (This could include the patient)
N	A family history of Triple Negative breast cancer (ER-, PR-, HER2-) at age 60 or younger?

Patient Signature: _____

FOR OFFICE USE ONLY:
 Patient does not understand genetic testing. Ref to genetic family history.
 Genetic testing is recommended for Patient, but Patient Declined - Reason: _____
 Genetic testing is recommended for Patient and she has proceeded with testing. Reason: _____

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Software: Easy for Providers to Interpret

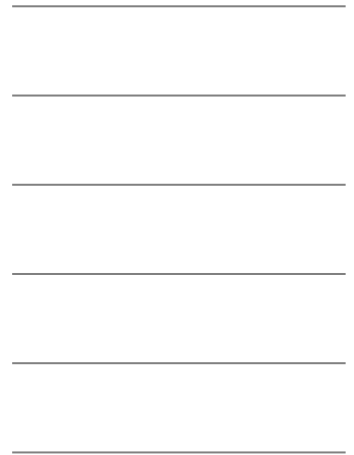
On the Tablet



- ✓ Tyrer-Cuzick 7
- ✓ Tyrer-Cuzick 8
- ✓ NCCN Guidelines

On a Printout

Genetic Evaluation	Genetic Testing	MRI Eligibility
Yes	Yes	Yes
Mother with 2 breast cancer primaries in a single breast (Genetic) has Breast Cancer at age 45 and 48	Grandmother has Breast Cancer at age 40 and 42	Tyrer-Cuzick Lifetime Risk: 43.2%
Mother with breast cancer at 45	1st Cousin Brother with Breast Cancer at age 42	Tyrer-Cuzick 5-year Risk: 18.2%
2 sons	Grandmother has Breast Cancer at age 40 and 42	1st Cousin Brother with breast cancer diagnosed at 50
Basic Information:		
Name: Fay Ayvazian	Date of Birth: 1/24/1973	Tumor's Date: 08/29/2017
Gender: Female	MRN: 11111	Address:
Place: 11111	Education: High School or Lower	Preferred Phone Number: 7123456789
Addressed: No	Admitted: No	Referring Physician:
Height:	Weight:	Smoker:
Phys. Measurements:	Phys. GEC:	Current/Previous Pregnancy:
Patient History:		
Reason for Ref:		
Recent Procedures:		
Personal Cancer History:		
Family History:		
Family Cancer History: Mother (Breast/Breast Cancer / Dx between 40 and 45)		
Mother (Breast Cancer / Dx between 40 and 45)		
Sisters / Children Cancer (Dx between 40 and 45 / 2 times)		
Genetic Testing Information: None		
Tyrer-Cuzick:		



RIVERSIDE HEALTHCARE : Switching from paper to tablet



A family history with 2 or more breast cancers on the same side of the family diagnosed at any age?
(This could include the patient)

A family history of 2 or more breast, ovarian, or pancreatic cancers on the same side of the family diagnosed at any age?
(This could include the patient)

A family history of Triple Negative breast cancer (ER-, PR-, HER2-) at age 50 or younger?

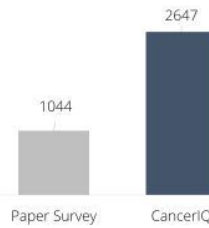


Improved patient comprehension

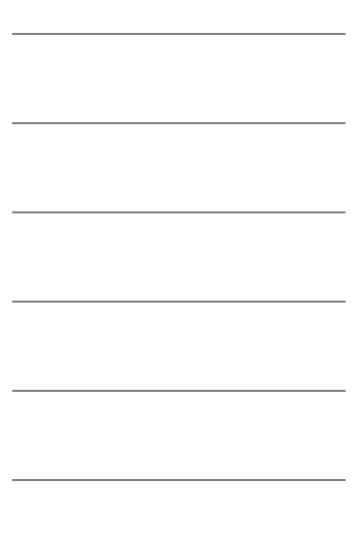
Genetic Testing	MRI Eligibility	Chemoprevention
Yes	Yes	Yes
Mother with 2 breast cancer primaries in a single breast (Genetic) has Breast Cancer at age 45 and 48	Grandmother has Breast Cancer at age 40 and 42	1st Cousin Brother with Breast Cancer at age 42
Mother with breast cancer at 45	1st Cousin Brother with Breast Cancer at age 42	Grandmother has Breast Cancer at age 40 and 42
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Height:	Weight:	Smoker:
Phys. Measurements:	Phys. GEC:	Current/Previous Pregnancy:
Patient History:		
Reason for Ref:		
Recent Procedures:		
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Family History:		
Family Cancer History: Mother (Breast/Breast Cancer / Dx between 40 and 45)		
Mother (Breast Cancer / Dx between 40 and 45)		
Sisters / Children Cancer (Dx between 40 and 45 / 2 times)		
Genetic Testing Information: None		
Tyrer-Cuzick:		

Reduced staff stress with easy-to-identify text

Patients Meeting NCCN Criteria

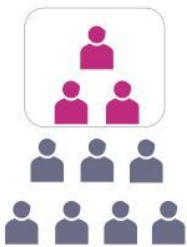


2.5x more high-risk patients identified



MARIN GENERAL HOSPITAL : Using NCCN instead of Tyrer-Cuzick

Problem



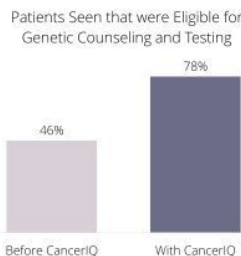
19% patients missed by using Tyrer-Cuzick score instead of NCCN

Solution

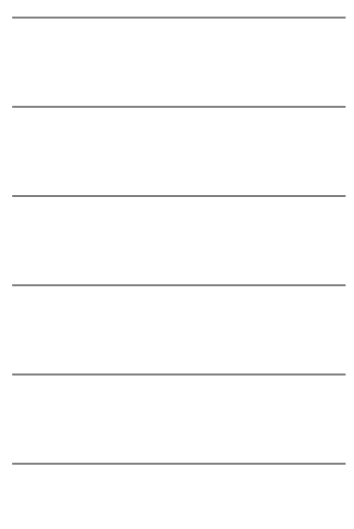


Switch Relied on CancerIQ as the single source of truth for genetics

Outcome

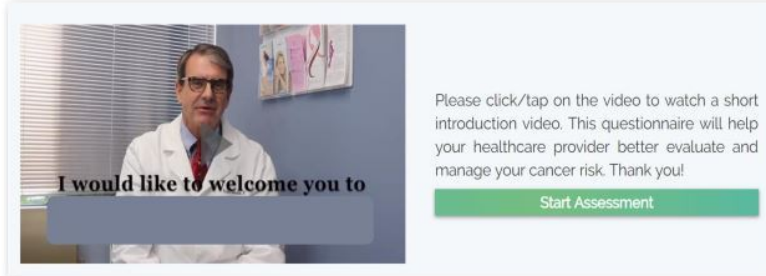


2.5x increase in patients appropriate to be seen by a genetics-trained provider



Communications Tip #1: Get Providers Involved

- Customize your welcome video introducing the questionnaire



Communications Tip #2: Be Positive, Directive

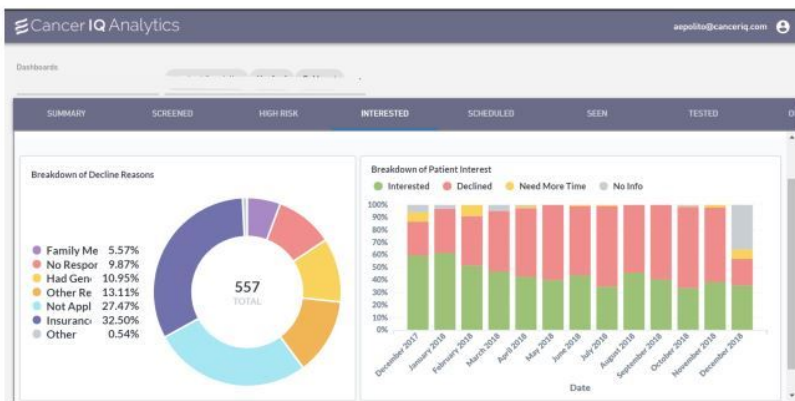
More

- You are eligible for a cancer prevention consultation
- You are eligible for a breast health consultation
- You are eligible for something more personalized, and above and beyond a mammogram

Less

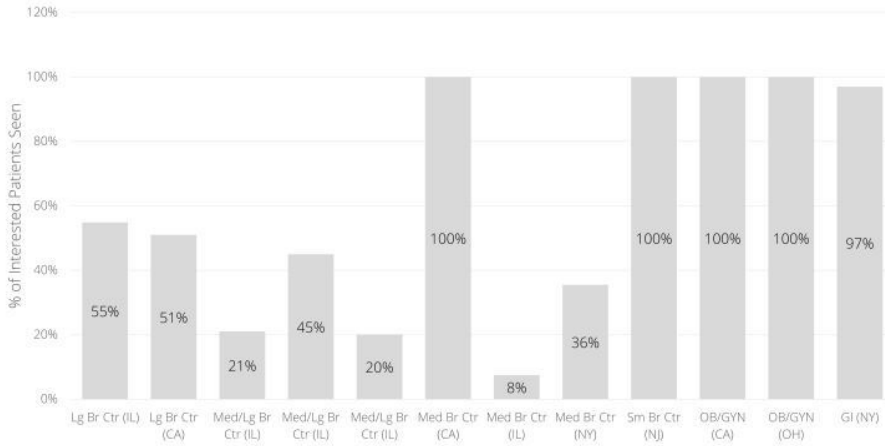
- You are high risk and should see a genetic counselor to explore hereditary cancer testing
- You might want to consider calling the genetics department

Use Audit Feedback to Improve Communications Over Time 

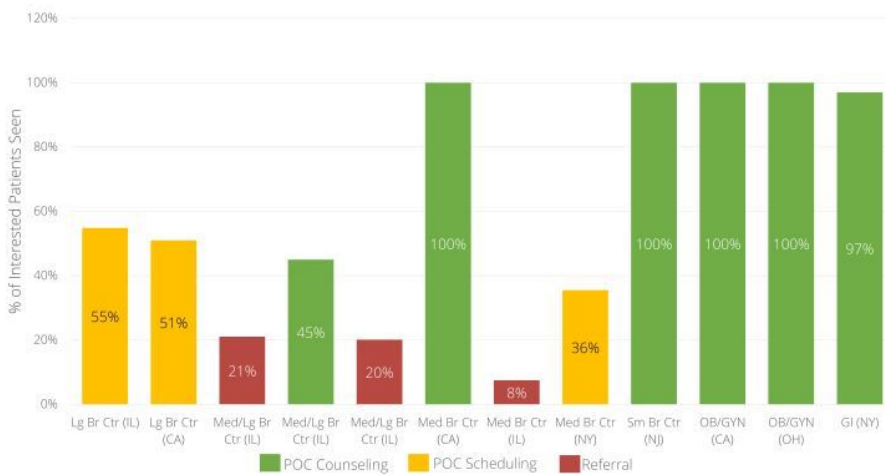


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Overall Patient Uptake



Patient Compliance is Highest When Testing at Point of Care



Point of Care Counseling Alternatives



Genetics Extenders

- High risk nurse navigators, NPs, and PAs trained in pre-test counseling
- Already having conversations with patients about family history and cancer

23%

Trained Providers

- Graduates of CME programs designed for providers:
 - City of Hope Intensive Course
 - ACOG, ASCO, AsBRS Courses
- Already have the relationship and the clinical context, just need the time

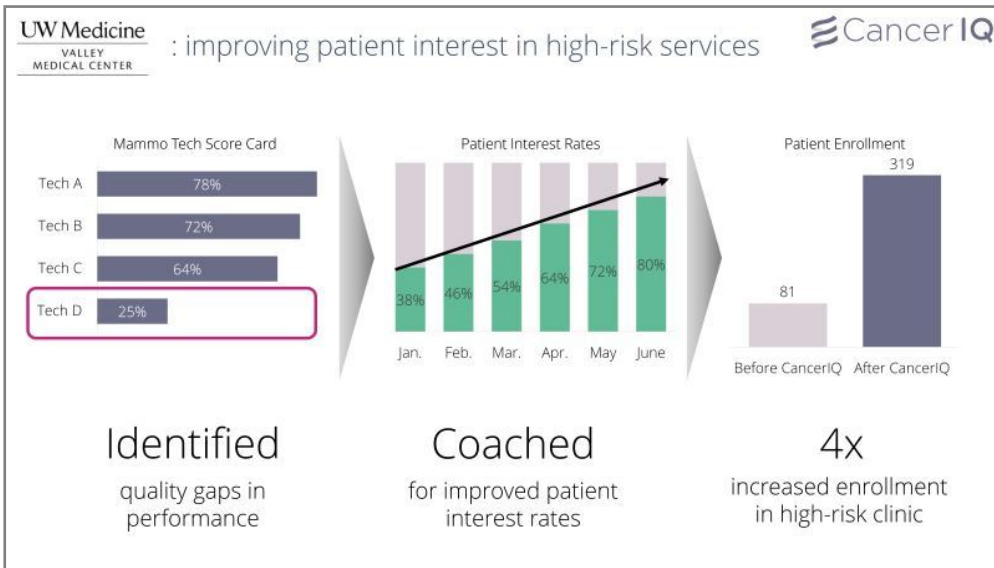
31%

TeleHealth

- Same-day genetic counseling service delivered over the phone or the web
- Already have the relationship and the clinical context, providers just need the genetics education

46%

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Increasing Genetics Service Capacity

Maximizing your valuable genetic counseling resources without burning them out



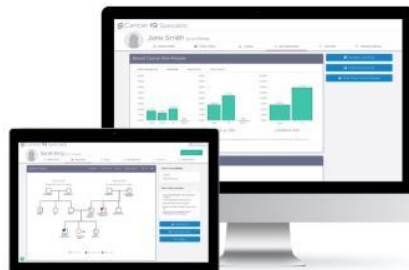
Maximizing the Value of Genetic Counseling, Testing, and High Risk Clinic Services

Specialists need specialty tools

Oncologists, Surgeons



Genetic Counselors



Standardization Supports Efficiency

- Family Health Questionnaire (FHQ)
 - ✓ Online or by Tablet; English and Spanish
- Patient Communication (Emails)
 - ✓ Auto generated as reminders for FHQ completion
- Provider Communication
 - ✓ Incomplete Referral Form
 - ✓ Patient Contact Attempts
- Report Templates (Patient and Provider)
 - ✓ Initial Consult, Disclosure/ Results and Recommendations
- *Smart Text* Terms/Definitions/Care Management Recommendations
 - ✓ Hyperlinked definitions/explanations of terms, results, care management recommendations

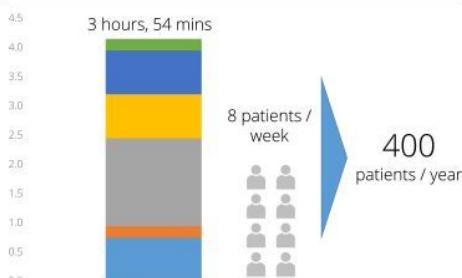


AdvocateAurora: Increasing genetics service capacity

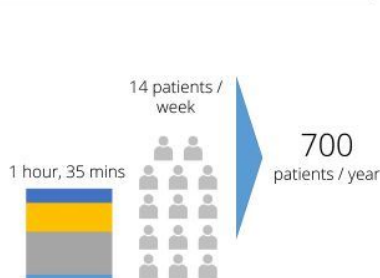


By reducing admin work, more at-risk patients can get access to care

Without CancerIQ*



With CancerIQ

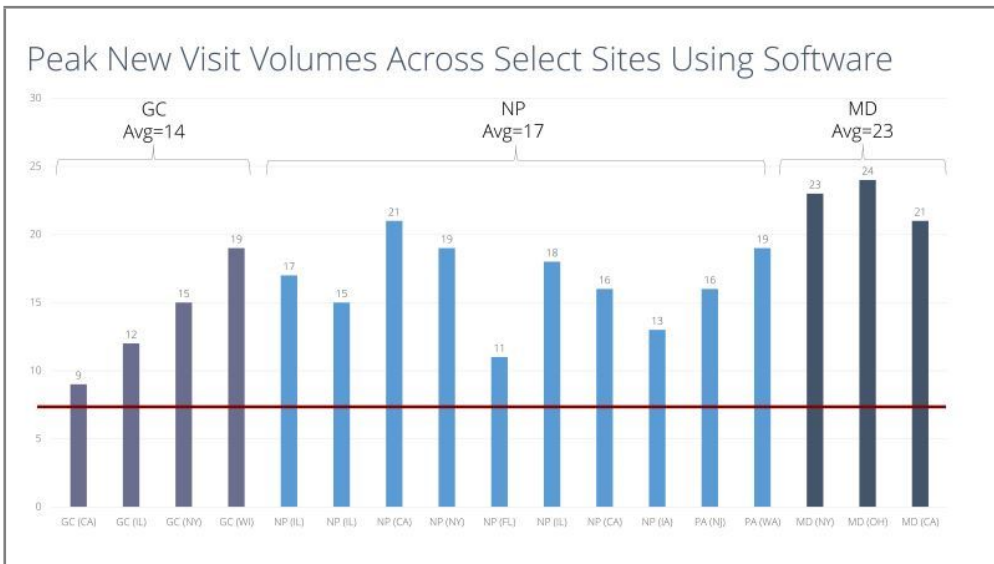
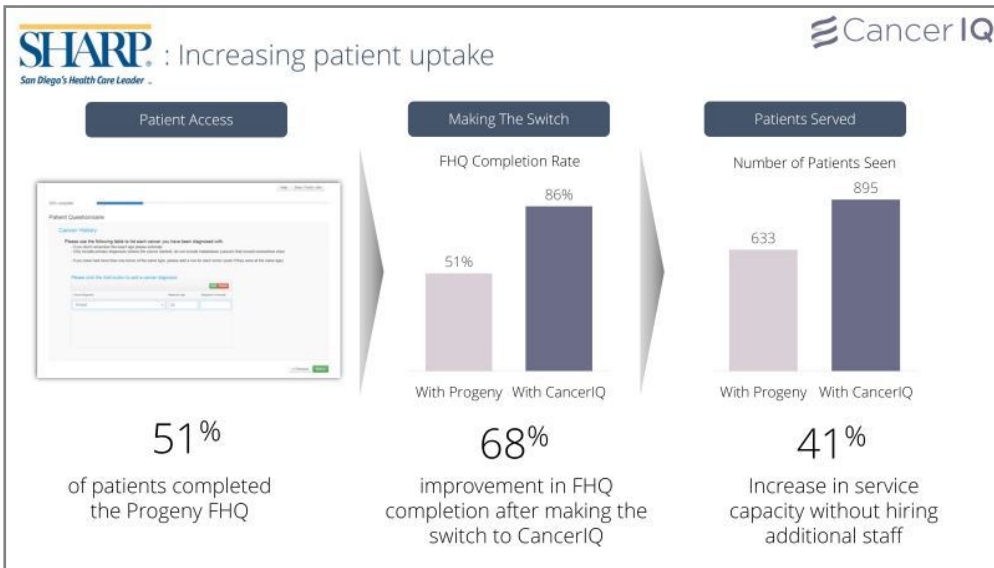


* Based on national averages reported by the National Society of Genetic Counselors

CancerIQ was able to help a single genetic counselor streamline and grow the program

30


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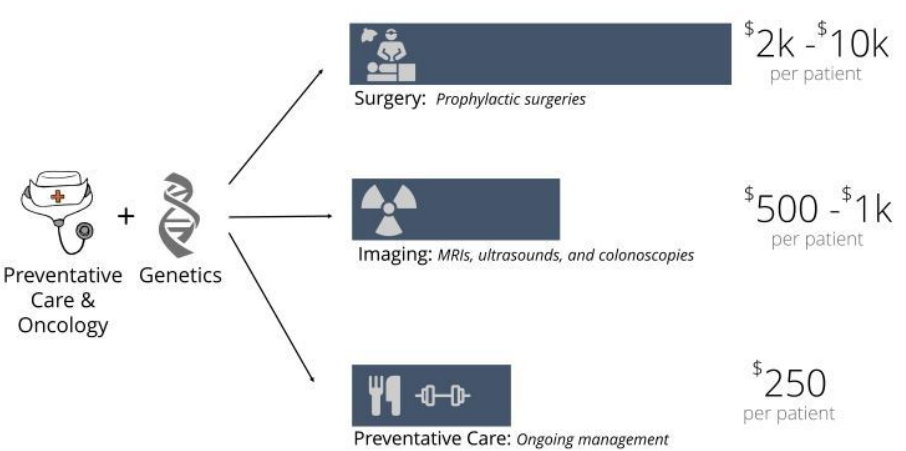
Managing High-Risk Patients

The best way to maximize the clinical and financial value of genetics in your health system

Maximizing the Value of Genetic Counseling, Testing, and High Risk Clinic Services



The Downstream Revenue Opportunity



Service Category	Revenue per Patient
Surgery: Prophylactic surgeries	\$2k - \$10k
Imaging: MRIs, ultrasounds, and colonoscopies	\$500 - \$1k
Preventative Care: Ongoing management	\$250

34

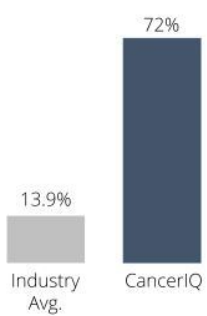
The challenge with adherence to breast MRI recommendations

Breast Cancer Risk Assessment in 64,659 Women at a Single High-Volume Mammography Clinic
John T. Brinton, MS,^{1*} Lora D. Barke, DO,² Mary E. Freivogel, MS CGC,² Stacy Jackson, RT(R)(M),² Colin J. O'Donnell, MS,¹ and Deborah H. Glueck, PhD¹

CancerIQ MRI Adherence

Traditional Limitations:

- Results were only communicated to providers, not patients
- Gail score was used, and not the Tyrer-Cuzick score
- Reliant on PCPs to know ordering and prior-authorization process
- MRI adherence was only 13.9%



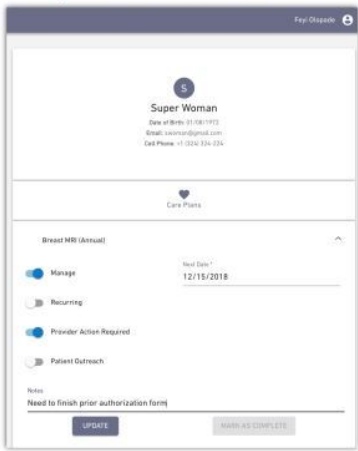
Category	Adherence Rate
Industry Avg.	13.9%
CancerIQ	72%

How? Determine which patients need active management

Manage

Alert

Remind



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How? Visual alerts of patients that require follow-up

Manage

Alert

Remind

Name	Care Plans	Due
Electra Natchios	Breast MRI (Annual)	27 days ago
Margot Robbie	Exercise and Wellness Program	17 days ago
test test	Breast MRI (Annual)	2 days ago
Sinai Demo	Breast MRI (Annual)	Today
Wonder Woman	Tamoxifen (20mg/d for 5 years)	7 days
Meryl Streep	Breast MRI (Annual)	69 days
RWJBarnabas Demo	Breast MRI (Annual)	683 days
Jamie Doe	Other	N/A
Cheryl Crowe	Genetic Counseling	N/A
Super Woman	Tamoxifen (20mg/d for 5 years)	N/A

How? Proactive email reminders for patients at risk

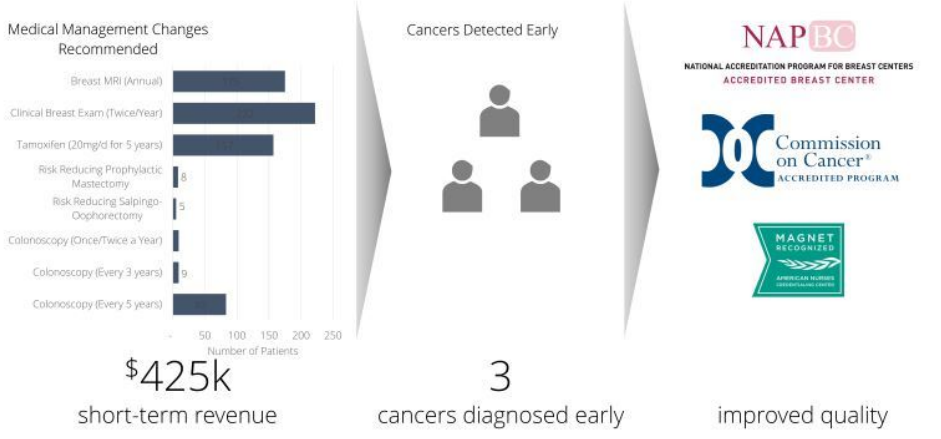
Manage

Alert

Remind

Two email reminder templates from Cancer IQ. The first is an "Appointment Reminder" for Helene Murphy regarding a genetics appointment. The second is a "Care Management Followup" for Helene Murphy regarding a care management appointment. Both emails include a "Yes/No" response button and the Cancer IQ logo.

OSF HEALTHCARE : Improving profitability and patient retention in a breast program



Financial Considerations

Financial Analysis from Oncology Leadership at Sharp Healthcare

Downstream revenue from non-Capitated patients*

- Increased screening frequencies
- High risk screening codes/reimbursement replacement for routine screenings
- Replacement of routine screening modalities with complex modality screening (breast MRI replacing mammography)
- Prophylactic surgeries

Cancer Genetics Program
SHARP

Care Management Recommendation	Volume (Nov 2017-Dec 2018)
Annual breast MRI screenings	152
Risk-reducing mastectomy	24
Risk-reducing salpingo-oophorectomy	16
Colonoscopy once/twice a year	6
Colonoscopy every 3 years	11
Colonoscopy every 5 years	23

*Depends on organization ownership of revenue streams

SHARP

Staff Efficiency Dollars vs Additional Capacity Impact

Staff Efficiency Calculation

- ✓ "Expense reduction" per patient using GC salary time savings (example: 2 hrs/pt)
- ✓ Able to calculate salary savings to see a greater number of patients with same staffing level
- ✓ Not applicable as a viable staff reduction approach due to growing demand for GC services

Increased Opportunity for Favorable Financial Impact

- ✓ Additional GC patients seen due to increased capacity
- ✓ Additional downstream revenue from additional patients
- ✓ Additional averted capitation costs from future/subsequent cancer treatment with screening/prevention measures realized

* Depends on organization ownership of revenue streams or associated population financial risk

SHARP

Averted or Reduced Cost of Future/Subsequent Cancers

- **Averted expense to health plans and those with financial risk for capped populations**
 - ✓ Cost of diagnostic work-up
 - ✓ Treatment costs
 - ✓ Provider expense
 - ✓ Surveillance monitoring expense
- **The number of averted new primary cancers in high risk patients can be significant. Many have 2-3 primaries before risk assessment/counseling efforts initiated.**
- **With changes in care management implemented based on counseling and/or testing recommendations, future cancers are likely to be diagnosed at an earlier stage and are less costly to treat.**



Averted Expense Example

Evaluation of Sharp breast cancer patients diagnosed in 2017 included those who were:

- Triple negative at <= age 60, or
- Any breast cancer at <= age 50.

Estimated potential financial impact for IP/OP *hospital expense* for just 1 subsequent cancer dx per patient. *(Does not include all drugs, MD fees, or ongoing surveillance expense) Understated overall expense of total care.*

Averted expense to health plans: \$ 6M (Net Revenue)
Averted cost for capped patients: \$ 3M (Direct Expense)

Patient population is mixed so impact is in between.

Estimated cost of routine breast panel testing and counseling for same population = less than \$500,000.



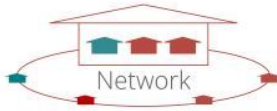
Getting Buy-in from Leadership

Justifying an investment in a more robust genetic cancer risk assessment program

Maximizing the Value of Genetic Counseling, Testing, and High Risk Clinic Services

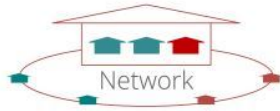
Identify Screening & Identification Sites

1 Cancer Screening Sites



Screen in breast imaging and GI where cancer / cancer risk is top of mind for patients

2 Preventative Care



Screen patients in specialties where professional society guidelines support genetic testing

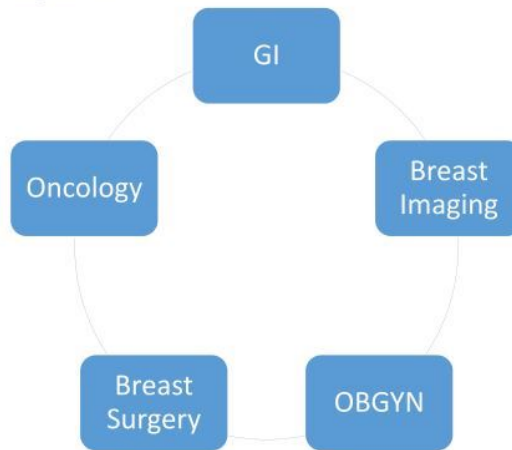
3 Deploy System-Wide








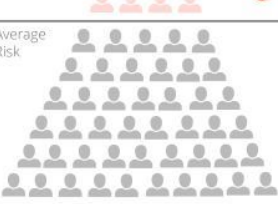
Deploy screening in primary care as part of broader population health efforts

Establish a High Risk Management Team

Create a multi-specialists group of physicians who will serve the 1000s of patients in the community who are at increased risk of cancer.



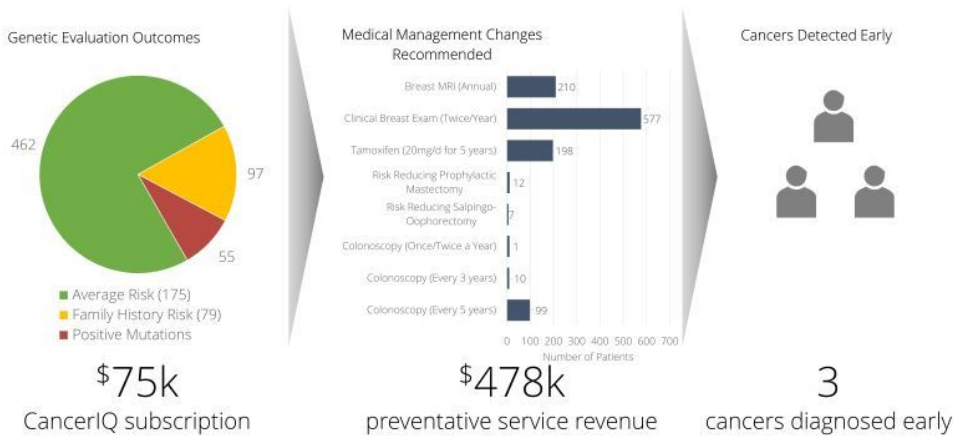
Estimate The Revenue Opportunity

		Pre-CancerIQ	Post-CancerIQ	+ Change	
Highest Risk (5%)	1 				
	1 	1 Surgeries	\$0	\$30,151	\$30,151
Above Average Risk (10%)	2 				
	2 	2 Breast surveillance	0	90,086	90,086
	4 	3 E&M / genetics visits	0	150,743	150,743
Average Risk	16 	Revenue	\$0	\$270,980	\$270,980

Note: Based on expected population at risk, 30% - 50% patient adherence, and standard Medicare/Medicare reimbursement rates for preventative services.

Share Real Case Studies of Success

"CancerIQ has helped us become a more comprehensive center for prevention and early detection"



The Opportunity

- 1 Enhances The Patient Experience
- 2 Improves Patient Care, Safety, and Population Outcomes
- 3 Improves Staff Productivity and Reduces Staff Burnout
- 4 Decreases the Per Capita Cost of Care
- 5 Attracts New Patients and Increases Patient Retention
- 6 Differentiates Service Offerings Over Competitors

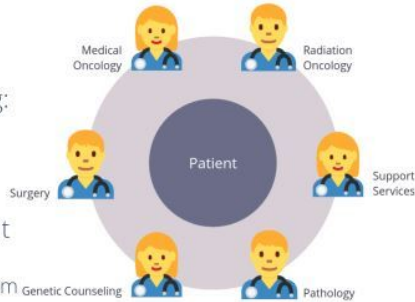
Saves Lives and Prevents Adverse Outcomes

FAQ #1

Why is genetic counseling an important differentiator for your cancer program?

How we think about genetic counseling

- Core part of a multi-disciplinary cancer program
- Key component of clinical decision-making:
 - Cancer treatment
 - Prevention
- Clear vision and cross-functional alignment on the program
 - Clinical champions and buy-in across the system



We owe it to our patients to have this service available for them

Differentiation from Academic settings

- Located in an urban setting in the heart of Chicago with a crowded field of competition
- Compete directly against several nationally recognized, major academic hospitals
- Need to deliver an academic level of care that is personalized at the community level



FAQ #2

Genetic counseling is not a huge revenue source for the cancer center. Why did you invest in specialty software for this service line?

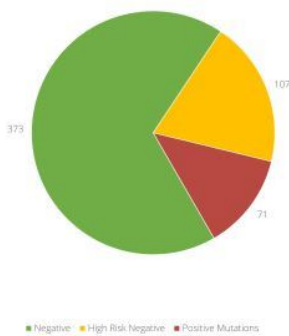
How We Think About It

- Throughput issues could negatively impact other downstream processes and services, which are higher revenue sources, e.g., diagnostic testing, treatments
- Think about the leading-edge above and beyond the technology or machine
- “Leading edge technology” differs depending on the specialty involved:
 - Tool for surgery
 - Imaging modality for radiology
 - Productivity software for genetic counseling

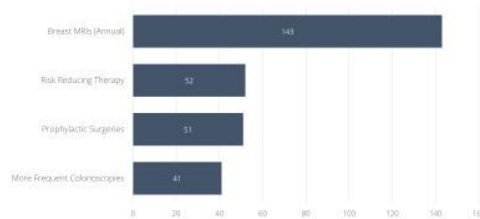


Genetic Counselor – similar potential downstream opportunities

Genetic Evaluation Outcomes



Tailored Cancer Prevention Strategies



\$364k
Preventative Service
Revenue

FAQ #3

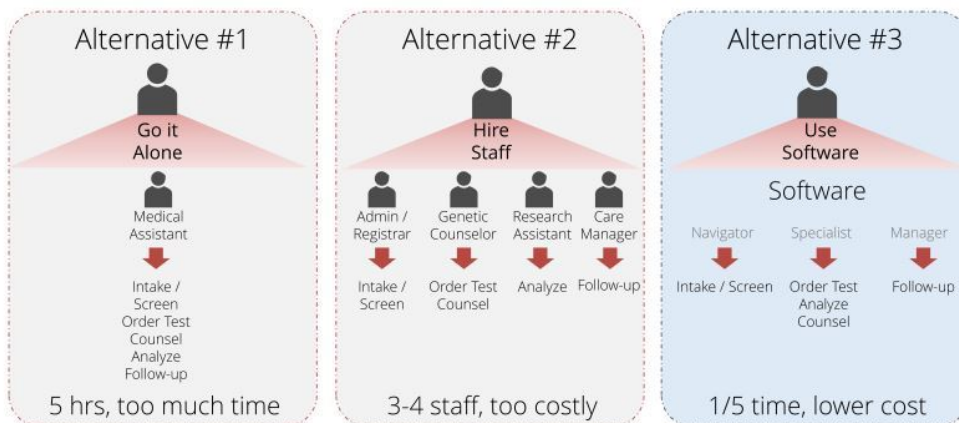
Genetics solutions are newer and typically unbudgeted. How did you determine your budget and what you were willing to invest in this area?

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Intrinsic Costs – How much it would take to build a software solution

	BUILD IN-HOUSE	OUT-OF-THE-BOX GENETICS SOFTWARE
Clinical team time	<ul style="list-style-type: none"> Requires clinicians to act as product managers 	20 hours
IT Time for Setup	<ul style="list-style-type: none"> Get on the IT project queue Scoped hours of work 	2 hours
Quarterly Guideline Updates	<ul style="list-style-type: none"> Manually update with latest NCCN Guidelines Clinical time, IT resources 	0 hours
Ongoing Maintenance	<ul style="list-style-type: none"> Maintain in-house solution IT resources, clinical time 	0 hours

Alternative Costs – How much to achieve goals without software



FAQ #4

A lot of providers are skeptical about their patients' ability to complete CancerIQ questionnaires on their own and in a timely manner. How has the patient experience been?

The CancerIQ survey

Experience in Clinic

- Patients receive in reception area
- Little staff assistance needed to complete
- Questions and prompts are easy to follow

Experience at Health fairs

- Tablets at formal galas, community events and health fairs
- Regardless of the audience, easy for people to use
- Genetic counselor also has a seamless experience with necessary follow-up

Future product development to enable longitudinal approach to patient relationships (e.g., language development, etc)

Patient Survey Metrics

Completion Rates

- 85% of patients who have provided an email complete the survey before their appointment

Completion Times

	Day 1	Day 2	Day 3	Day 4	Average
Average Time - M1 - Basic	05:03	04:28	03:36	03:33	03:38
Average Time - M2 - Family	12:20	13:02	11:39	11:10	11:24
Average Time - M3 - Medical	04:26	04:30	04:11	04:09	04:03
Average Time - M4 - Screening	03:56	04:46	04:19	03:59	04:11
Average Time - M5 - Lifestyle	01:19	01:08	01:17	01:26	01:15
Total Expected Survey Time	27:05	27:54	25:01	24:17	24:32

FAQ #5

What's next? Where do you see genetic risk assessment being useful?

Other patient engagement / screening opportunities

In Clinic

To streamline workflow, reduce cost of service delivery

- Complete prior to the appointment, or in the waiting room if they don't have access beforehand

Health Fairs

To build brand, generate awareness, and new referrals

- Can be done on site, and allow you to immediately generate and print a pedigree (and attach a business card)

Patient Portal

To make genetic part of routine care

- Working with CancerIQ on different languages
- Working with CancerIQ on EMR integrations

Long-term: expanding across clinical specialties



Oncology



GI



Breast Imaging



Primary Care



Surgery



OB/GYN

2017

2018

Future

To expand into other clinical specialties, it's not just about the software –it's about the people who drive the program

FAQ #6

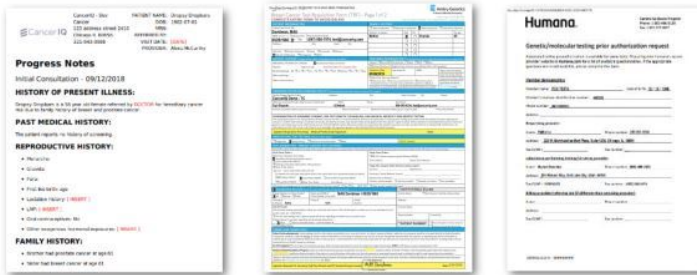
How important was it for software to be integrated with your EMR to deliver value?

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How it works alongside the EMR



Valuable without EMR integration



Our End-to-End Software Solutions



CancerIQ Navigator

- 1 Screening Toolkit**
Patient completes a 8-10 question waiting room survey to understand eligibility for further cancer risk assessment.
- 2 Navigator Portal**
Navigator views risk alert and schedules appointment to review risk assessment results with a trained specialist.

CancerIQ Specialist

- 3 Self-Assessment Program**
Patient receives basic education, and a series of 3-5 minute survey modules to complete before their visit with a specialist.
- 4 Specialist Portal**
Specialist reviews pedigree, test results and risk report, consults other CancerIQ users, and preps personalized care plan.

CancerIQ Manager

- 5 High Risk Program**
Patient receives a user-friendly interface to enroll in high risk programming, get support, and navigate surveillance plans.
- 6 Manager Portal**
Provider receives updates to original risk assessment. Automatically sends tailored education and screening reminders.

Thank You
www.canceriq.com

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