

Project Title: **Genomic Testing in Ovarian Cancer Patients**

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Institution: Kaiser Permanente Northern California

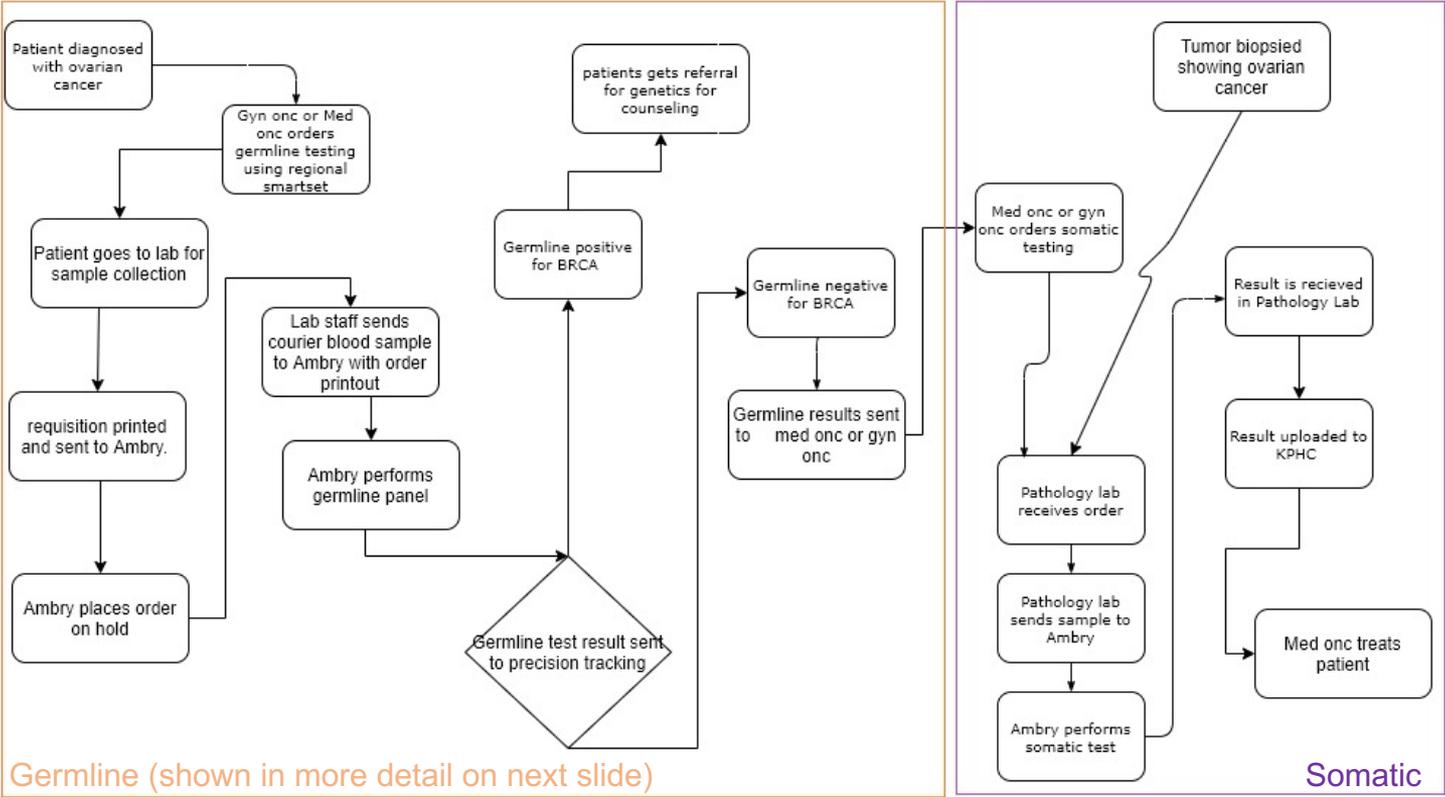
Date: December 10, 2021



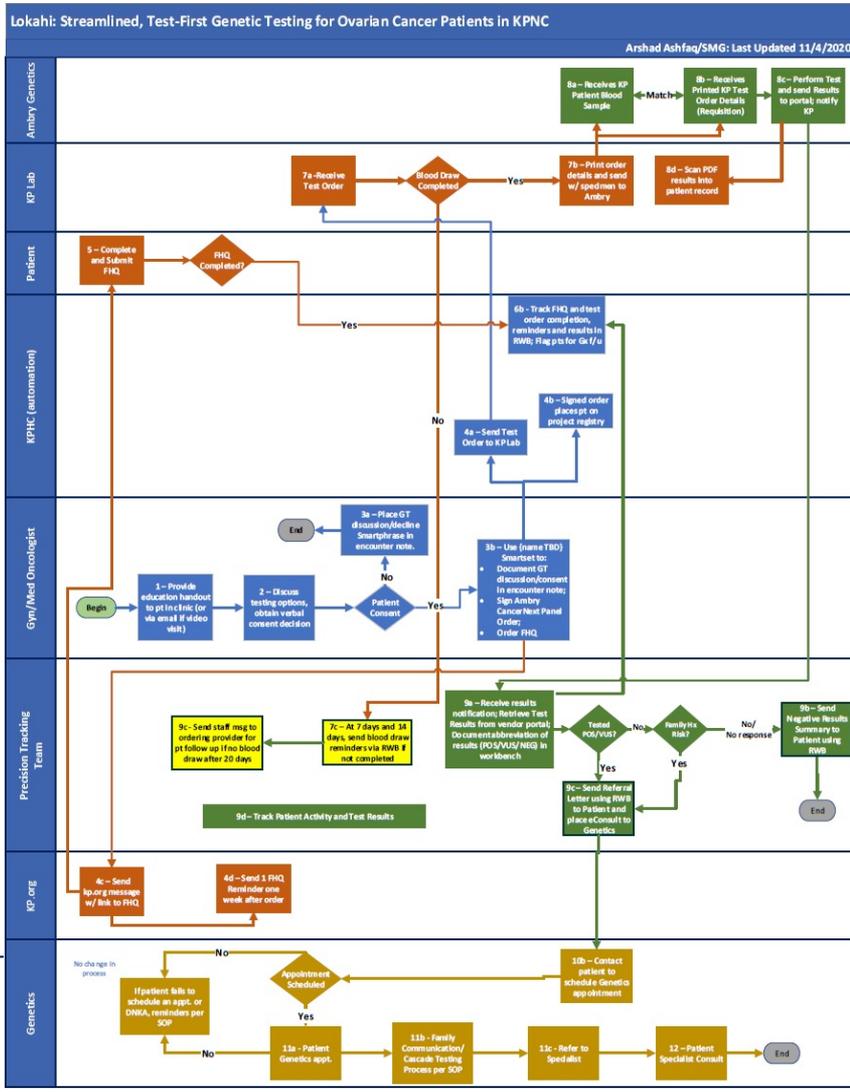
# Problem Statement

Somatic genomic testing for ovarian cancer patients is not consistently ordered in San Francisco and the DSA by the time of completion of chemotherapy. This leads to incomplete information when devising a treatment plan leading to suboptimal care, including delays in treatment, and provider and patient dissatisfaction.

# Process map



# Process map



# Institutional Overview

**PERMANENTE MEDICINE®**

**The Permanente Medical Group**

Kaiser Permanente Northern California (KPNC) is a healthcare organization providing care for about 4 million patients across 15 medical centers in Northern California.

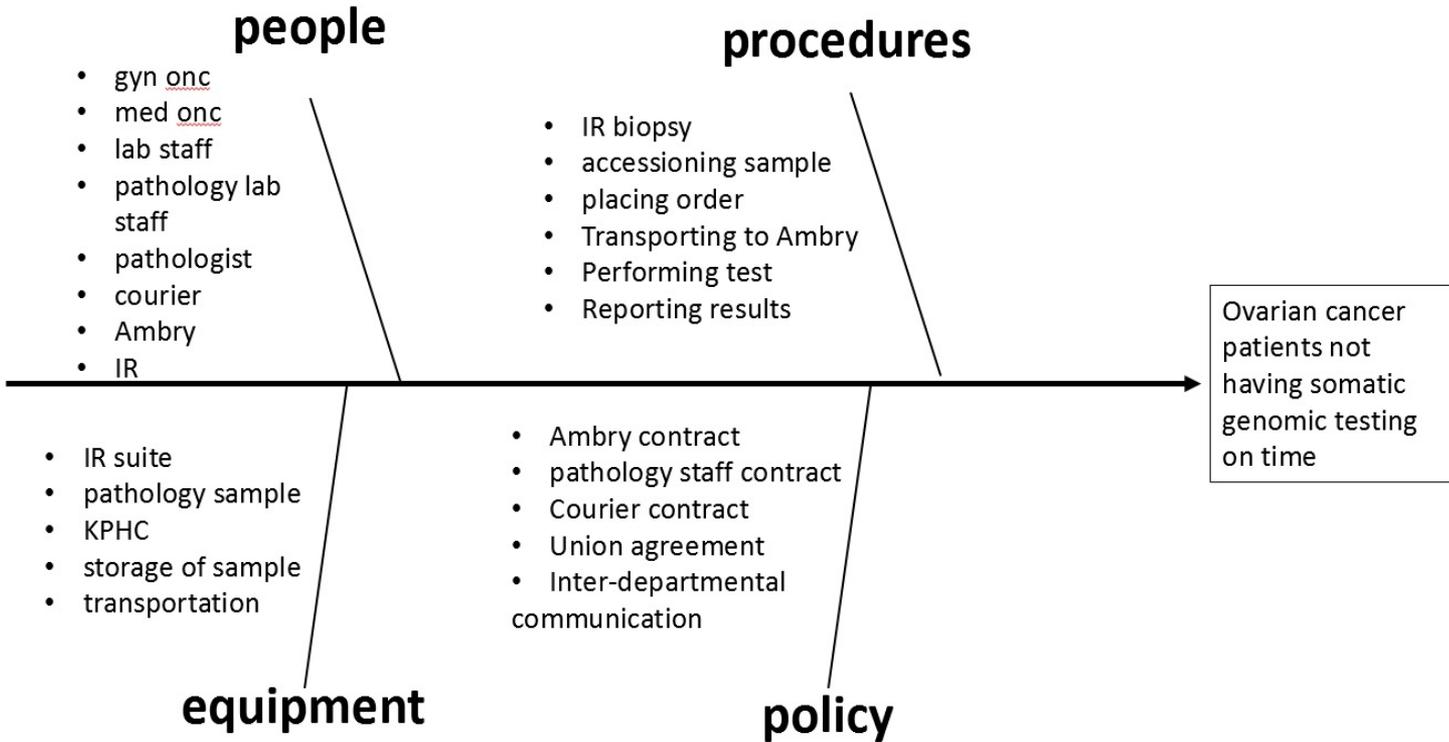
Our ASCO QTP team comes from 3 service areas within KPNC: San Francisco, Oakland, and the Diablo Service Area (DSA) consisting of Walnut Creek, Dublin and Antioch.

Services and departments are located within medical centers based on volume, need, and the ability to provide remote care. Medical oncology and infusion centers are present at most medical centers; gynecologic oncology surgery is based in a handful of medical centers including San Francisco, Oakland, and Walnut Creek; and the department of genetics works more centrally from Oakland and Sacramento.

# Team members

- Juraj Kavecansky, MD – medical oncologist in the Diablo Service Area
- Christine Garcia, MD – gynecologic oncologist in San Francisco
- Leslie Manace, MD – geneticist in Oakland
  
- Piyush Srivastava, MD, a medical oncologist in Walnut Creek, is our coach.

# Cause and Effect diagram



# Aim Statement

By December 2021, 80% of ovarian cancer patients without BRCA germline mutations will have somatic genomic testing ordered by the time of completion of chemotherapy.

# Measures

- Measure: order placed for somatic genomic testing
- Patient population: ovarian cancer patients in DSA, San Francisco
- Calculation methodology: 
$$\frac{\text{patients with somatic testing ordered}}{\text{patients with germline testing ordered}}$$
- Data source: KP Health Connect (electronic medical record)
- Data collection frequency: monthly
- Data quality (any limitations): measure only notes order; there may be other reasons results are not available

# *Process Measure* **Diagnostic Data**

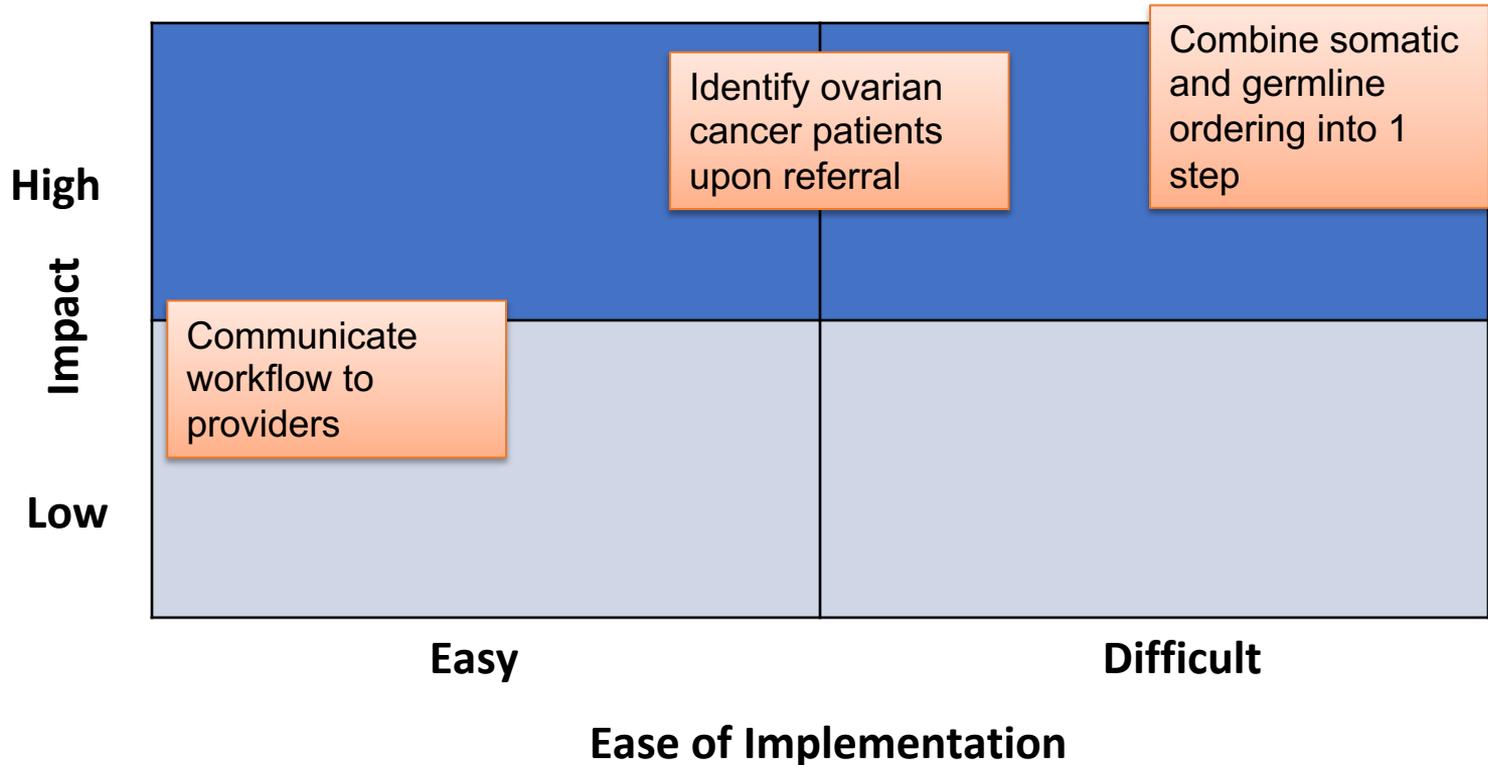
- 25 patients from KPSF and the DSA had somatic genomic tests ordered between December 2020 and August 2021
- During this time period, we had 44 patients with germline testing resulted by Gynecologic Oncology
- The percentage of patients with somatic testing out of this total eligible is 58%

# Outcome Measure

## Baseline data summary

Item	Description
Measure:	Somatic tests resulted
Patient population: <i>(Exclusions, if any)</i>	Ovarian cancer patients in KP San Francisco and KP DSA
Calculation methodology: <i>(i.e. numerator &amp; denominator)</i>	$\frac{\text{\# patients with somatic genetic testing resulted}}{\text{\# ovarian cancer patients in KPSF and DSA}}$
Data source:	KP Health Connect (electronic medical record)
Data collection frequency:	One time - time frame 1/1/2020 to 6/30/2020
Data limitations: <i>(if applicable)</i>	The measure looks at one medical center within KPNC

# Prioritized List of Changes (Priority/Pay –Off Matrix)



# PDSA Plan (Test of Change)

Date of PDSA Cycle	Description of Intervention	Results	Action Steps
9/20/2021	Communicate smart set order to med onc	3 of 3 patients had somatic testing (100%)	Improve recognition of ovarian cancer patients needing testing earlier
10/1/2021	Identify ovarian cancer patients on referral in the EMR	9 of 15 patients had somatic testing (60%)	Order somatic testing upon referral
TBD	Create single-click order for somatic testing		

# Materials Developed

We developed a somatic genomic testing order for the Kaiser Permanente Health Connect electronic medical record, which orders a somatic pathology test with one-click and pulls in the germline order together

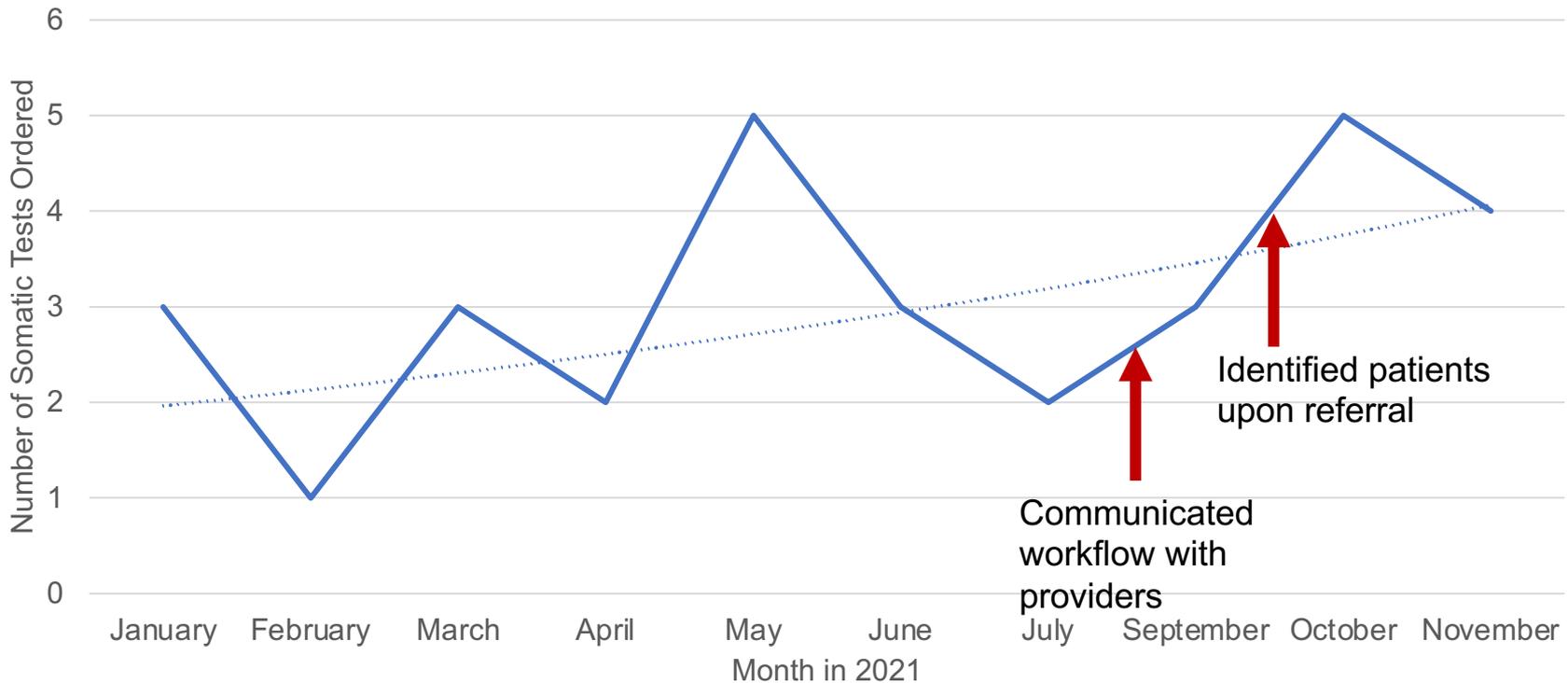
This order creates a streamlined means of communication between the clinician, pathology lab, and genomic testing vendor to process somatic genomic tests

# Change Data

- Between 9/20/2021, and 11/30/2021, 12 patients with ovarian cancer had somatic testing ordered out of 18 patients with germline testing, making 60%.
- An additional 4 patients have not had pathology samples available to send as of 11/30/2021

# Change Data

## Somatic Tests Ordered By Month



# Conclusions

- While we did not reach our goal 80% of patients having somatic tests ordered, we are seeing more somatic tests ordered, and expect the trend to continue as pathologic samples may be obtained a few weeks after the initial referral and germline testing is available
- In a large organization like Kaiser Permanente, implementing changes can be more difficult than defining what changes may be helpful
- Changing the workflow of how somatic genomic tests are ordered for ovarian cancer involves many departments and individuals, often with both aligned and competing priorities
- To evaluate the true benefit of an intervention, both the ease of implementation and the potential effect need to be taken into account
- Creating a streamlined ordering process for germline and somatic testing would have a significant impact on test ordering.
- Implementing simple actions, such as increasing awareness of a problem, can lead to significant improvements.
- Increasing awareness of the baseline data for ovarian cancer genomic test ordering, and the workflow to place orders, can in itself improve the desired outcomes measure.

# Next Steps/Plan for Sustainability

1. We are continuing to work on implementing a streamlined, combined test order for germline and somatic testing in the electronic medical record
2. To make the increased number of ovarian somatic tests sustainable, the workflow will need to be effective without manually monitoring ovarian cancer patients in the electronic record
3. Once we have a streamlined ordering process and consistently meet our goal outcome measure, we hope to trust the workflow enough to no longer need to manually monitor ovarian cancer patients to ensure they have appropriate genomic tests ordered