



Development of a Molecular Service for Precision Oncologic Treatment for Underserved Cancer Patients in Rural Eastern North Carolina

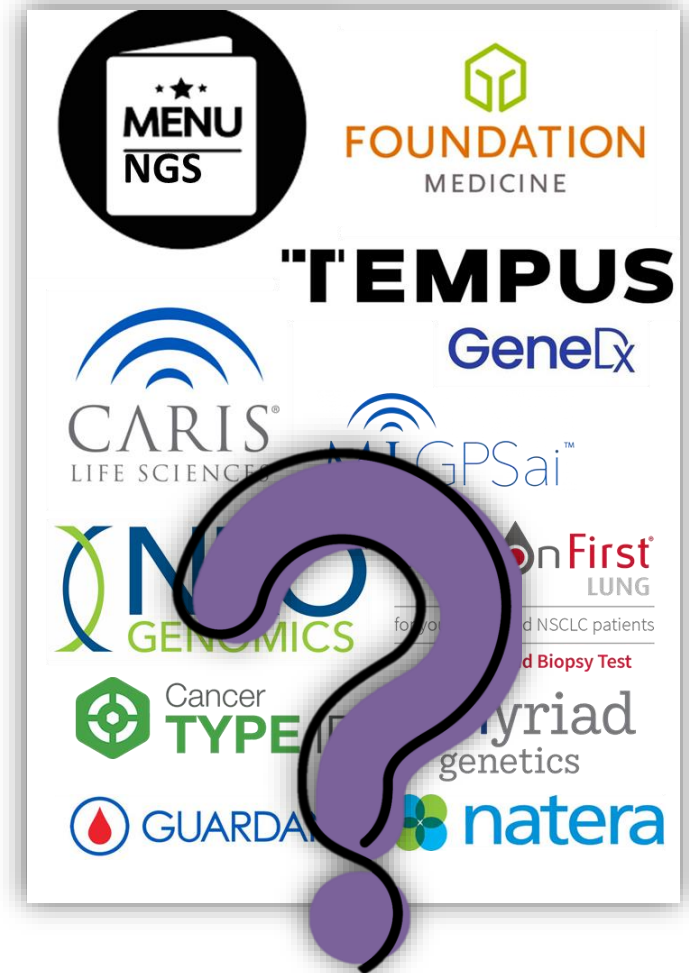
Daniela Chala Garcia, MS; Insha Pun, MA; Ahmed I. Younes, MD; Dmitry Tumin, PhD; Sunil Badami, MD; and Yaolin Zhou, MD

ECU Health Quality Improvement Symposium

January 31, 2024

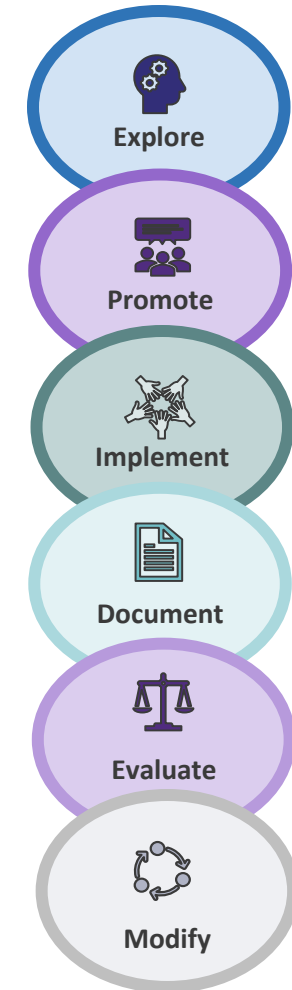
Background/Introduction – Challenges of Precision Oncology

- Cancer patients in rural eastern NC face obstacles in accessing necessary molecular tests and targeted therapies
- Barriers: evolving test options, challenge of specimen/test selection, clinician interpretation, high cost
- Before Sept 2020, ECU Health had no molecular pathologist and no standardized molecular workflow
- **Aim:** Enhance the clinical utility of precision oncology testing for cancer patients by developing a molecular pathology service to cover pre- and post-testing
 - Review all send-out cases and ensure appropriate molecular tests
 - Provide clinicians with summary addenda for returned cases
 - Offer consultative support and coordinate complex patient cases



Methods – EPIDEM Model of Quality Improvement

- **Explore** molecular send-out process (affects all cancer patients in ENC whose tumor specimens were examined at ECU Health MC)
- **Promote** changes to stakeholders (ordering providers/pathology dept)
- **Implement** changes gradually (workflow, addenda, database, etc.)
- **Document** in a molecular send-out database, electronic health records, written correspondence, published scholarship
- **Evaluate** the service's impact on specimen adequacy (rescued cases), clinical and financial outcomes, and provider satisfaction
- **Modifications** include offering an orderable molecular consultation



Results - Impact

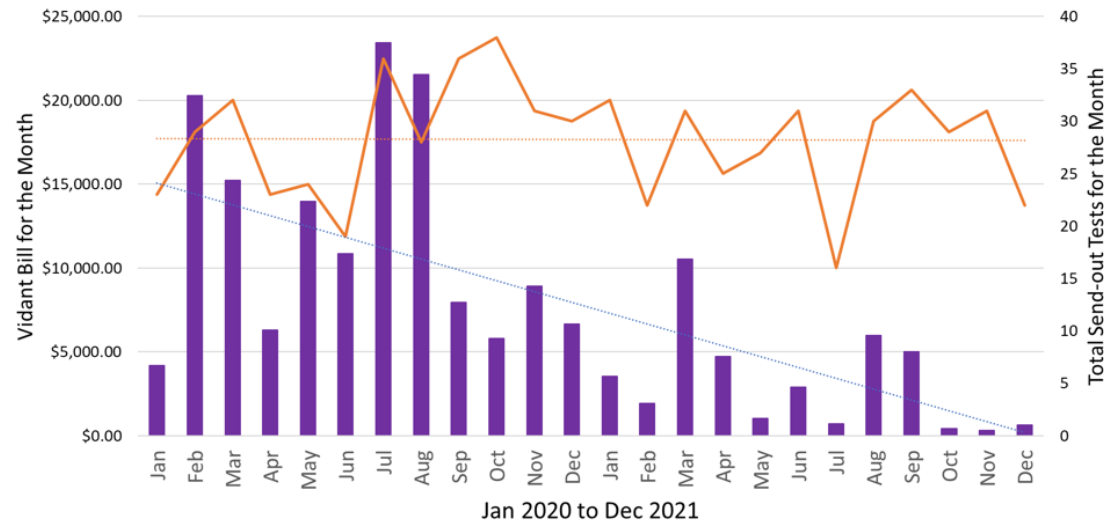
Jan 2021-Oct 2023

In-depth Pre-pre and Post-post Analytic Reviews

2700 molecular orders reviewed and reported to clinicians with overwhelmingly positive feedback



Monthly Client (Vidant) Bill and Total Number of Send-Out Caris Tests Performed from Jan 2020 to Dec 2021



Molecular Test Utilization Reduces Redundant Testing and Rescues Otherwise Insufficient NSCLC Specimens

J. Stephen Stalls, MD; Nupur Sharma, MD; Yaolin Zhou, MD
 ECU Department of Pathology and Laboratory Medicine

- ✓ 2 resident rotations
- ✓ 5 published abstracts
- ✓ 1 state-wide abstract
- ✓ 1 peer-reviewed publication
- ✓ \$250K extramural funding

Case #	Specimen	Biopsy	Caris	Sufficient	Rescued	Original QNS	Yes
#2 SB	Adeno Lung	Biopsy	Caris	Sufficient	Rescued	Original QNS	Yes
#3 DS	SCC Lung	Biopsy	Caris	Sufficient	Rescued	Original QNS	Yes
#4 BM	Adeno, lung met to liver	Biopsy	Caris	Sufficient	Rescued	Original QNS	Yes

Resident Scholarship

Analysis of Clinical Impact of Send-Out Molecular Oncology Tests: Comparison Across Tumor Types in a Rural Academic Medical Center

Ahmed I. Younes, MD, Kotaro Takeda, MD, PhD, and Yaolin Zhou, MD
 Department of Pathology and Laboratory Medicine, East Carolina University, Brody School of Medicine and Vidant Health

Jan-Mar 2023

Rescued 34 of 129 cases (26.4%)

- Rescued Cases
- Reviewed Cases

Results – Formal Molecular Consultation Orders

Dec 2020
Molecular Review
Service

In-depth Molecular Reviews
(Molecular Consult orderable
in Epic after May 2023)

Dr. James Loynes
(Carteret - Morehead City)

“Thank you so much for doing this consult. It ended up being quite helpful for me. As you know these things can be complicated.”

Dr. Nagesh Jayaram
(SMOC Jacksonville)

“Really good insight and very helpful exactly as you presented it. I like your personal recommendation and would go with that”
“I’ve already “beta tested” this and it has been amazingly helpful.”

Dr. Nayan Mainkar, fellow
(ECUH MC)

“Wow thank you so much! This will really change the landscape! Much appreciated”

Nicole DaVia NP
(ECUH Beaufort)

“Detailed and understandable! You are more of an expert on these tests and what they specifically tell us and that helps with this patient.”

Molecular Pathology Clinical Consultation Workflow ECU HEALTH

Review the steps below to place and result the *Molecular Pathology Clinical Consultation* order.

Try It Out

Place the Order

1. Use *Patient Station* to access the patient's chart.
2. Click **[Managed Orders]** to place the *Molecular Pathology Clinical Consultation* order.
3. If comments will need to be shown in the order, click the **order** and a new window will populate.

The screenshot shows the Epic interface with a 'Managed Orders' button highlighted in red. Below it, a 'New Orders' window is open, showing a 'Molecular Pathology Clinical Consultation' order with a 'Comments' field.



Results – Formal Molecular Consultation Orders

Dec 2020
Molecular Review Service

May 22, 2023
 Molecular Consultation

Aug 2023
 New team members

Oct 21, 2023
 IMAGINE conference


Jan 2024
 QI Symposium

In-depth Molecular Reviews (Molecular Consult orderable in Epic after May 2023)

June 5, 2023
 Insha Pun started

Sept 2023
Journal of Molecular Diagnostics guest editorial

Nov 2023
 AMP Meeting USCAP accepted

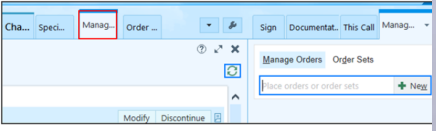
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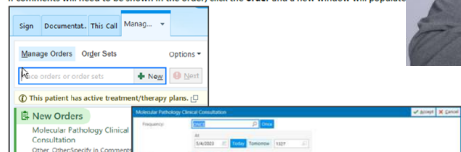
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Conclusion

- Regional and outside oncologists were more likely to initiate consultations and document patient benefit from the service
- Streamlining the process, especially for regional and community oncologists, may further enhance patient benefits
- **EPIDEM (Modifications)**
 - Partnering with Clinical Informatics and Cancer Registry
 - Automated data entry for molecular results
 - Molecular “smart phrase” in tumor board notes
 - Standardizing workflows for high-yield tumors
- We demonstrate the effectiveness of a molecular consultation service, even without the resources for in-house testing
- Our scalable solution could be a model for underserved populations

