

Title:

How do you create Risk assessment model adoption in oncology?

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Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):

In oncology, using a risk assessment model (RAM) can greatly improve patient outcomes and clinical decision-making. Models for risk assessment assist medical professionals in identifying patients who are more likely to get cancer or have particular consequences.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

A) Utilizing a comprehensive multi-modal risk evaluation tool that integrates molecular, clinical, and imaging data has the potential to advance thinking and enhance decision-making in lung cancer (NSCLC). Key Aspects of the RAM:

1. Patient Information Entry- Details such as age, smoking history, comorbidities, and ECOG performance status are major factors that clinical judgements rely on.
2. Genetic anomalies consist of TMB, MMRD, MSI, and PD-L1 overexpression.
3. Evaluation of Imaging- Utilizing the principle of radiomics, radiological images are analyzed to quantify the tumor's behavior in terms of metabolism or texture.
4. Machine Learning Developed Predictions and Risk Stratification- AI-enabled computing algorithms leverage data from diverse patients' records to make a clinical decision.
5. Time of Life (DoL) and Progress-Only Life (P-AS).
6. Only 2nd sentence is correct (PFS) and 1st is missing (OS).
7. Decision Support for Clinical- Accordingly, the molecular tumor board (MTB) scrutinizes RAM data in order to recommend patients for targeted therapy or chemo-immunotherapy.
8. On-going Model Optimization- Visibility of new patient outcomes through continual improvement.
9. Effect on the Treatment of Cancer - More effective therapy is therefore administered leading to the growth of the percentage of patients positively responding to the therapy.

B)

1. EHR Integration: In order to address the real-time risk, RAM should be incorporated into Electronic Health Records (EHRs).
2. AI Decision Support: Dashboards for AI should be made in order to help oncologists recognize hazards and propose treatment plans.
3. Standardized Guidelines: Verifiable RAM models in oncology regimens have to be set up. Present RAM risk scores during Molecular Tumor Board (MTB) talks as part of Tumor Board Integration.
4. Clinician Training: RAM-focused decision-making courses should be offered as part of the certification and workshops.
5. Automated Alerts: Patients who are at risk can be identified and the corresponding therapy plan based on the patient's risk can then be planned.
6. Continuous Model Learning: RAM accuracy can be increased if we employ patient outcomes data as training sets.
7. Impact: This technology will lead to better cancer care, personal treatment programs and the discovery of cancer risk factors at an earlier stage.

C) Implementing the Risk Assessment Model (RAM) into the clinical workflow involves a plan to ensure a smooth transition, as well as diminish interruptions, and also emphasize the decision-making possibilities of healthcare providers. The complete workflow of RAM embedding into clinical practice is shown step by step below.

1. Patient Data Collection Inputs:

- Patient demographic information
- Medical history
- Clinical examination findings
- Laboratory and imaging results

Process:

- Patient data gets entered into the Electronic Health Record (EHR) system by healthcare providers or administrative staff.
- Relatively connected medical devices (wearable devices, remote monitoring tools, or diagnostic systems) are promptly providing health data.

2. Output:

- A comprehensive patient profile is available to be used for risk assessment.

3. Automated Risk Assessment Using RAM Inputs:

- Patient data from EHR or external sources
- Predefined RAM parameters and algorithms

Process:

- The RAM algorithm is activated by data entry or at definite workflow stages (e.g., admission, consultation, post-diagnosis).
- The presentation of the risk score is carried out according to the specified criteria.
- Their AI/ML-based models are continually being trained with the latest data; hence they can better predict the future.

Output:

- A risk score is displayed in the EHR system.
- The result is categorized (e.g., Low, Moderate, High Risk).

4. Clinical Decision Support and Alerts

Inputs:

- RAM-generated risk score
- Established clinical guidelines and protocols

Process:

- If a high-risk score is detected, the system activates real-time alerts for healthcare providers.
- Real-time recommendations such as lab orders or referrals are also provided (e.g., order additional tests, refer to a specialist, initiate treatment).
- Tools for the Clinical Decision Support may include evidence-based guidelines that are specifically designed for that patient's condition.

Output:

- Healthcare providers are notified via EHR dashboards, mobile alerts, or emails.
- Provocations for the suggested interventions are included in the patient's record.

5. Provider Review and Decision-Making

Inputs:

- RAM-generated risk score and recommendations
- Provider's clinical judgment Process:
 - The healthcare provider performs risk assessment in conjunction with clinical findings.
 - The treatment plan is then adjusted depending on clinical judgment and patient-specific telling cues.
 - Shared decision-making is encouraged, allowing for the patient and his/her family to be part of the discussions.

Output:

- A custom-made care plan is devised.
- The prescribed treatment or the actions of the follow-ups are kept in the patient's records.

6. Intervention and Patient Management

Inputs:

- Finalized treatment plan
- Follow-up schedule

Process:

- The provider offers prescriptions of drugs, marks lifestyle changes or referrals of the patients who need them.
- The patient adherence and development are controlled by nurses, care coordinators, and telehealth services.
- In the event of a patient's deterioration, the RAM may be re-triggered to determine the updated risk assessment.

Output:

- Patient outcome becomes more favorable due to timely medical intervention.
- Hospitalizations and complications are fewer.

7. Continuous Monitoring and Quality Improvement

Inputs:

- Feedback from providers and patients
- Outcome data and analytics

Process:

- Regular assessments of RAM are conducted to ensure accuracy and reliability.
- AI and machine learning models are being used to enhance the prediction of the risks based on real-world data.
- A stable environment for work is realized through the periodic training of the clinical staff on RAM.

Output:

- Livelier clinical decision-making tools and higher standards of patient safety.
- RAM integration and the efficient flow of work have been steadily improved through the continuous quality measures.

References:

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Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):

Primary Outcomes

1. Improved Risk Assessment: Enhanced accuracy and reliability of risk assessment for targeted cancer or outcome.
2. Increased Adoption: Successful integration of the RAM into clinical workflows, with high adoption rates among healthcare providers.
3. Better Clinical Decision-Making: Improved clinical decision-making, with healthcare providers using the RAM to inform treatment plans and patient care.
4. Enhanced Patient Outcomes: Improved patient outcomes, including reduced morbidity, mortality, and improved quality of life.
5. Sustained Adoption: Successful sustainment of RAM adoption, with ongoing education, support, and evaluation to ensure continued effectiveness.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

Step 1: Select a Relevant Risk Assessment Model (RAM)

- Identify a specific type of cancer or outcome to target (e.g., breast cancer, lung cancer, or chemotherapy-induced neutropenia).
- Research and select a validated RAM that applies to the targeted cancer or outcome (e.g., Gail Model for breast cancer risk assessment).
- Ensure the RAM is evidence-based, easy to use, and provides actionable results.

Step 2: Understand the Reasons for Underuse

- Investigate why the selected RAM is underused in clinical settings, such as lack of awareness or education about the RAM.
- Limited access to necessary data or resources.
- Insufficient integration into electronic health records (EHRs) or clinical workflows.
- Concerns about accuracy, reliability, or interpretability.

Step 3: Develop Solutions for Integration

- Collaborate with healthcare providers, IT specialists, and other stakeholders to develop solutions for integrating the RAM into clinical workflows, such as developing user-friendly interfaces for data entry and results interpretation.
- Integrating the RAM into EHRs or other clinical systems.
- Creating decision support tools or alerts to notify healthcare providers of high-risk patients.
- Providing education and training for healthcare providers on the RAM and its application.

Step 4: Implement and Evaluate the RAM

- Implement the RAM in a pilot setting or a small group of healthcare providers.
- Evaluate the effectiveness of RAM in identifying high-risk patients and improving clinical decision-making.
- Assess the usability, feasibility, and acceptability of RAM among healthcare providers.
- Gather feedback and refine the RAM and its implementation as needed.

Step 5: Scale Up and Sustain Adoption

- Scale up the implementation of the RAM to a larger healthcare setting or system.
- Develop strategies to sustain adoption, such as regularly updating and refining the RAM to reflect new evidence or changing clinical practices.
- Providing ongoing education and support for healthcare providers.
- Monitoring and evaluating the impact of the RAM on patient outcomes and healthcare quality. focus on a Risk Assessment Model (RAM) for breast cancer.

Targeted Cancer:

Breast Cancer Breast cancer is a leading cause of cancer-related deaths in women worldwide. Early detection and risk assessment are critical for improving outcomes.

Selected RAM: Gail Model

The Gail Model is a widely used RAM for assessing breast cancer risk. It takes into account several factors, including:

1. Age
2. Family history of breast cancer
3. Age at menarche
4. Age at first live birth
5. Number of previous breast biopsies
6. Presence of atypical hyperplasia or lobular carcinoma *in situ*

The Gail Model provides a 5-year and lifetime risk estimate for developing invasive breast cancer.

Why is the Gail Model Underused. Despite its validity and usefulness, the Gail Model is underused in clinical settings due to:

1. Limited awareness and education among healthcare providers.
2. Complexity of the model, requiring manual calculations or specialized software.
3. Limited integration into electronic health records (EHRs) or clinical workflows.
4. Concerns about accuracy and reliability, particularly in diverse populations.

Next Steps To address these challenges, we can develop solutions for integrating the Gail Model into clinical workflows, such as:

1. User-friendly interfaces for data entry and results interpretation.
2. Integration into EHRs or other clinical systems.
3. Decision support tools or alerts to notify healthcare providers of high-risk patients.
4. Education and training for healthcare providers on the Gail Model and its application.

Elaboration on why the Risk Assessment Model (RAM) is underused in clinical settings:

Limited Awareness and Education

1. Lack of familiarity: Many healthcare providers are not familiar with the RAM, its benefits, and its limitations.
2. Insufficient training: Healthcare providers may not receive adequate training on how to use the RAM, interpret results, and integrate it into clinical workflows.
3. Limited awareness of updates: Healthcare providers may not be aware of updates, revisions, or new developments related to the RAM.

Complexity and Practicality

1. Complexity of the model: The RAM may require manual calculations, specialized software, or complex algorithms, making it difficult to use in busy clinical settings.
2. Time-consuming: Using the RAM may require significant time and effort, taking away from other important clinical tasks.
3. Limited practicality: The RAM may not be practical for use in all clinical settings, such as in resource-constrained or high-volume clinics.

Integration and Technical Issues

1. Limited integration into EHRs: The RAM may not be integrated into electronic health records (EHRs) or other clinical systems, making it difficult to access and use.
2. Technical issues: Technical problems, such as software glitches or compatibility issues, may hinder the use of the RAM.
3. Data quality and availability: The RAM may require high-quality and complete data, which may not always be available or accessible.

Cultural and Patient-Related Barriers

1. Cultural and linguistic barriers: The RAM may not be culturally or linguistically adapted for diverse patient populations, limiting its use and effectiveness.
2. Patient engagement and education: Patients may not be engaged or educated about the RAM, its benefits, and its limitations, making it difficult to implement and use effectively.

3. Patient-related factors: Patient-related factors, such as cognitive or literacy limitations, may impact the use and effectiveness of the RAM.

Organizational and Systemic Barriers

1. Lack of institutional support: The RAM may not be supported or prioritized by healthcare institutions or organizations.
2. Limited resources: Healthcare institutions or organizations may not have the necessary resources, including funding, personnel, or infrastructure, to support the use of the RAM.
3. Competeting priorities: Healthcare providers and institutions may have competing priorities, such as managing chronic diseases or addressing urgent care needs, that take away from the use of the RAM.

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Objective of your solution:(Briefly define the primary outcome of your solution to this challenge):

Primary Outcomes of Adopting Risk Assessment Models (RAMs) in Oncology:

1. Improved Risk Stratification: Enhanced identification of high-risk patients (e.g., cancer development, recurrence, or toxicity) using validated clinical, genetic, and lifestyle factors.
2. Timely Interventions: Earlier initiation of preventive measures (e.g., screening, chemoprevention) or tailored treatments (e.g., dose adjustments) based on individualized risk profiles.
3. Reduced Late-Stage Diagnoses: Lower incidence of advanced-stage cancers through proactive monitoring of high-risk cohorts.
4. Equitable Risk Prediction: Mitigation of biases via inclusive model training on diverse demographic datasets, ensuring relevance across ethnic, socioeconomic, and geographic groups.
5. Streamlined Clinical Workflows: Automated risk scoring via EHR integration, reducing manual calculations and clinician burden.
6. Patient-Centric Care: Transparent risk communication empowers patients to engage in shared decision-making (e.g., lifestyle modifications, surveillance adherence).

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

Targeted RAM: Gail Model for Breast Cancer Risk

1. Purpose: Predicts 5-year and lifetime risk of invasive breast cancer using age, reproductive history, family history, and biopsy results.
2. Use Case: Identifies high-risk women for enhanced screening (e.g., MRI) or chemoprevention (e.g., tamoxifen).
3. Guideline Alignment: Recommended by NCCN/ASCO for risk-stratified screening.

Reasons for Underuse in Clinical Settings

1. Awareness Gaps: Clinicians lack training on interpreting Gail scores.
2. Workflow Barriers: Manual data entry is time-consuming; no EHR integration.
3. Equity Concerns: Model validated primarily in White women, limiting trust in diverse populations.
4. Access Issues: Limited genetic counselling/resources for high-risk patients.
5. Reimbursement Challenges: Insurers may not cover preventive measures for "high-risk" labels.

Solutions for RAM Integration

1. Education & Training:

Workshops on Gail model utility (e.g. ASCO e-learning modules).

Decision aids for explaining risk to patients (e.g. visual infographics).

2. Electronic Health Records Integration:

Embed Gail calculator into Electronic health records (EHR).
Alerts prompting clinicians to assess risk during routine visits.

3. Automation & Validation:

Use Natural Language Processing to extract family history from clinical notes.
Validate/adapt the model for underrepresented groups (e.g., Hispanic women) via local datasets.

4. Workflow Optimization:

Assign nurses to administer Gail questionnaires during wellness visits.
Link EHRs to genetic counselling referrals for high-risk patients.

5. Policy Advocacy:

Lobby payers to cover MRI/tamoxifen for Gail-identified high-risk patients.
Align hospital metrics with RAM utilization (e.g., percentage of eligible patients screened).

6. Monitoring & Feedback:

Track screening adherence and cancer detection rates post-RAM adoption.
Clinician surveys to refine usability (e.g., simplify risk reports).

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Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):

By embedding RAMs like Tyrer-Cuzick into routine care with minimal disruption, clinicians can identify high-risk patients earlier, personalize prevention strategies, and ultimately improve outcomes in breast cancer care.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

Adopting a risk assessment model (RAM) in oncology, like the Tyrer-Cuzick (IBIS) model for breast cancer, can make a big difference in identifying high-risk individuals early and guiding more personalized care. This model estimates a woman's risk of developing breast cancer based on factors like family history, reproductive history, and genetic mutations (such as BRCA1/2). Yet, despite its proven accuracy, it's not widely used in clinical practice. One reason is lack of time—clinicians often can't collect the detailed information needed during short visits. Many are also unfamiliar with the tool, or unsure how to interpret the results. On top of that, the model typically isn't integrated into electronic health records (EHRs), which makes it feel like "one more thing" to do. Even when high-risk patients are identified, there's often no structured process for follow-up. To make the model more useful and accessible, it should be built into EHRs so that patient information auto-fills the risk calculator. Alerts could prompt clinicians when a risk assessment is due—like during a routine mammogram appointment. Training for staff is key so they feel confident using the model and understand when and how to act on the results. A standard protocol should be in place: if someone's risk crosses a certain threshold, they're automatically referred for genetic counseling or preventive care. With these changes, RAMs like Tyrer-Cuzick can become part of everyday care—helping identify high-risk patients earlier, guiding smarter decisions, and ultimately improving outcomes in breast cancer care.

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Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):

1. To awaken the silent power of prediction in oncology—not through guesswork, but through the disciplined art of risk.
2. To ensure that no patient walks into uncertainty alone, and that clinicians have, at their fingertips, not just tools but insights that whisper what tomorrow holds.
3. Our mission: to elevate decision-making through intelligent, intuitive, and integrated risk assessment—where science meets foresight.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

Take the Khorana Risk Score—a validated model to predict venous thromboembolism (VTE) in cancer patients. Widely cited, yet underutilized. Why? It sits outside the clinician's routine. It requires calculation. It demands attention in an already crowded consult. And often, its output feels detached from actionable steps. Integration, not isolation, is the cure.

1. First, embed the RAM into the electronic medical record (EMR). Let it auto-populate—no manual scoring. When labs are back and the diagnosis is entered, the risk score should appear, not be searched for.
2. Second, link the score to pathways. High Khorana Score? The system nudges a prophylactic anticoagulation order. Moderate score? A pop-up offers guidance, evidence, and a quick consult button.
3. Third, educate through micro-moments. Short digital nudges within the EMR: “Your patient's score indicates elevated risk—here's what the latest ASCO guidelines suggest.”
4. Fourth, track outcomes. Show clinicians how early action reduced clots, shortened stays, or improved survival. Make the model's value personal.
5. Lastly, wrap it in ritual. A quick RAM review becomes part of morning rounds. Not another burden, but a clinical compass. Risk models don't save lives. Their adoption does. And adoption begins when tools cease to interrupt and start to serve.

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Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):

Improved early-stage breast cancer patient outcomes through widespread adoption of a streamlined, integrated risk recurrence prediction model leading to more timely and effective treatment decisions.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

Let's focus on a RAM predicting the risk of recurrence in early-stage breast cancer patients following surgery. This model, often incorporating factors like tumor size, lymph node involvement, grade, and receptor status, is underutilized due to several factors. Static Models: Current tools (e.g., Gail, Tyrer-Cuzick) rely on outdated data and lack personalization.

Disjointed Workflow:

1. Risk factors are scattered across EHRs, genetic reports, and imaging systems.
 2. Low Clinician Trust: Many RAMs don't provide clear action steps (e.g., when to recommend MRI vs. chemoprevention).
 3. Patient Anxiety: High-risk labels without tailored follow-up plans cause distress and non-compliance. To improve adoption, we need to streamline the model. A simplified, user-friendly web application could calculate the risk score using readily available data points directly from the EHR. The application should use a clear, visually intuitive dashboard displaying the risk score alongside actionable recommendations. For example, Innovative Solutions for Seamless RAM Integration
1. AI-Powered, Real-Time Risk Scoring Automated Data Fusion: AI pulls germline genetics, mammogram AI risk scores, lifestyle, and family history from EHRs to calculate dynamic risk. "Risk Radar" Dashboard: Flags patients with rising risk (e.g., new CHEK2 mutation + BMI increase) for immediate review.
 2. Smart Decision Support Just-in-Time Guidance: When RAM score exceeds threshold, EHR suggests: >20% 5-year risk: MRI + genetic counseling >30% lifetime risk: Discuss tamoxifen/raloxifene or risk-reducing mastectomy Patient-Tailored Alerts: Sends personalized video messages from oncologists explaining risk and next steps.
 3. Self-Improving Model via Federated Learning Hospitals contribute outcomes (e.g., false positives/negatives) to refine RAM without sharing raw data. Blockchain-verified updates ensure transparency and compliance.
 4. Behavioral Nudges for Compliance Gamified Screening Reminders: Patients earn points (redeemable for wellness rewards) for completing MRIs or lifestyle changes. Virtual Risk Counselor: AI chatbot ("Ask Dr. Ada") answers questions 24/7 to reduce anxiety

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Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):

RAMs are a tool used to predict cancer outcomes, based on clinical data. They are often limited due to their complexity, lack of awareness, integration challenges, resource constraints, and trust in clinical settings. To incorporate RAMs into clinical workflows, strategies include education, EHR integration, simplified interfaces, validation studies, AI, policy advocacy, and resource allocation. These strategies aim to improve patient care, reduce costs, and ensure accurate and reliable results. However, challenges include limited access to technology, training, and funding. Therefore, it's crucial to ensure RAMs are effectively integrated into clinical workflows.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

Focusing on a Specific RAM

1. Target Cancer Type or Outcome: For instance, a RAM for breast cancer may aim to predict the risk of recurrence, while a RAM for lung cancer might evaluate the chances of metastasis.
2. Evidence-Based Design: The RAM should be founded on solid clinical data, including biomarkers, genetic information, and patient demographics pertinent to the specific cancer type.
3. Outcome-Oriented Metrics: Establish clear metrics, such as survival rates, treatment responses, or recurrence probabilities, to assist in clinical decision-making.

Reasons for Limited Use of RAMs in Clinical Settings

1. Complexity: Many RAMs necessitate advanced data inputs (like genomic data) that may not be easily accessible in all clinical environments.
2. Lack of Awareness: Healthcare professionals may not be aware of the RAM or its advantages.
3. Integration Challenges: RAMs often struggle to integrate smoothly with current Electronic Health Records (EHRs) and clinical processes.
4. Resource Constraints: Limited access to technology, training, or funding in under-resourced settings can impede adoption.
5. Trust and Validation: Clinicians may be reluctant to depend on RAMs without comprehensive validation studies proving their accuracy and dependability.

Strategies for Incorporating RAMs into Clinical Workflows

1. Education: Organize workshops and training sessions to help healthcare providers understand the RAM and its uses.
2. EHR Integration: Create software solutions that incorporate RAM outputs directly into EHRs, offering real-time risk assessments during patient consultations.
3. Simplified Interfaces: Develop user-friendly dashboards that display RAM results in an easy-to-understand format.
4. Validation Studies: Publish peer-reviewed research that showcases the RAM's effectiveness.
5. Implement AI to streamline data collection and analysis.
6. Policy Advocacy: Collaborate with healthcare-organizations and policymakers to encourage the adoption of RAMs as part of standard-care practices.
7. Resource Allocation: Obtain funding and resources to facilitate RAM implementation, particularly in low-resource environments.

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Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):

Incorporating risk assessment models in breast cancer care to improve outcomes, challenges faced and how to overcome them.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

Risk Assessment Models in Breast Cancer in India Risk assessment models, such as the Gail Model or BOADICEA, predict breast cancer risk by analyzing factors like family history, age, hormonal exposures, and genetic mutations (e.g., BRCA1/2). In India, these models can identify high-risk women for targeted screening, chemoprevention (e.g., tamoxifen), or prophylactic measures, optimizing early detection in a country where breast cancer incidence is rising (1.5 lakh cases annually) and late-stage

diagnoses are common (50-60%). Models tailored to Indian populations, incorporating local risk factors like consanguinity or lifestyle, can enhance precision. The prevalence of young breast cancer in India is high, needs modification in screening too.

These models are underutilized due to limited awareness among clinicians, lack of integration into primary care, and inadequate genetic testing infrastructure. Only 10-15% of Indian hospitals offer comprehensive genetic counseling, and NGS-based testing costs ₹50,000-₹1,00,000, deterring use. Low health literacy and cultural stigma around discussing cancer risk further hinder adoption. Data scarcity on Indian-specific risk factors limits model accuracy, and time constraints in busy clinics discourage routine risk assessments.

Improving Utilization To boost use:

1. Training primary care physicians and gynecologists in risk assessment tools via CME programs is essential.
2. Developing India-specific models using data from registries like the Indian Council of Medical Research can improve relevance.
3. Subsidizing genetic testing through public-private partnerships and integrating risk assessment into national screening programs (e.g., NPCDCS) can enhance access.
4. Digital tools, like AI-supported apps, can simplify risk scoring for busy clinicians.
5. Incorporating into Workflow and Identifying High-Risk Patients Integrating risk assessment into electronic health records with automated prompts during routine visits can streamline workflow.
6. Community health workers (ASHA) can educate women on risk factors, referring high-risk cases to clinics.
7. Multidisciplinary tumor boards can prioritize high-risk patients for enhanced surveillance, such as annual mammograms or MRI, ensuring intervention.

These steps can make risk assessment routine, improving breast cancer outcomes in India.

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Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):

Precision oncology through risk assessment models like Oncotype DX can refine therapeutic strategies, reduce overtreatment, and empower personalized care. However, their underutilization stems from systemic and educational barriers. By embedding RAMs into electronic medical records, providing clinician and patient education, and integrating results into multidisciplinary decision-making, institutions can enhance the value and impact of these predictive tools in real-world oncology practice.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

Adopting a Risk Assessment Model (RAM) in Oncology

1. Select a Specific Risk Assessment Model

Purpose: Predicts the risk of breast cancer recurrence and helps in deciding the benefit of chemotherapy in ER+/HER2- early-stage breast cancer.

Clinical Utility: Guides adjuvant therapy decisions, particularly whether to add chemotherapy to hormone therapy.

2. Why This RAM (Oncotype DX) Is Underused

Barrier Explanation

High Cost / Reimbursement Issues: The test can be expensive and not always covered by insurance or government schemes

Limited Access in Resource-Limited Settings: Centralized testing facilities are not available in many low-resource hospitals

Knowledge Gaps Among Clinicians: Oncologists or surgeons may be unfamiliar with the test predictive value

3. Solutions for Integrating RAMs Like Oncotype DX Into Clinical Workflow

A. Clinical Workflow Integration

Step Action Required

Identify Eligible Patients: Incorporate criteria (e.g., ER+, HER2-, node-negative) into EMR as an alert/reminder

Streamline Test Ordering: Develop a pre-set EMR order panel to auto-trigger Oncotype DX when eligibility is confirmed

Expedite Sample Logistics: Establish pre-approved courier chains and SOPs for sample processing

B. Provider Training & Decision Support

Develop Clinical Guidelines: Integrate RAM usage in institutional treatment protocols - Embed

Decision Aids in EMR: Automated tools that interpret results and suggest treatment plans

CME: Host regular training on RAM interpretation and relevance

C. Patient-Focused Strategies

Educational Handouts/Videos: Simplify the concept of genomic testing for patients

Pre-Test Counseling: Offer short counseling sessions with oncology nurses or genetic counselors

Transparent Cost Discussions: Provide cost-benefit summaries and insurance guidance

4. Blueprint Workflow for Integrating a RAM into Clinical Practice

Patient Diagnosed with Early-Stage Breast Cancer

Meets Criteria for RAM?

- Yes: Trigger Oncotype DX Order in EMR
- Send Tissue Sample to Lab
- Receive Recurrence Score
- Tumor Board Discussion

Documentation and Patient Counseling

- No: Proceed with standard care
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