

Title:

How do you create Risk assessment model adoption in oncology?

Full Name:

Himaprathyusha Parupalli

Name of the Institution:

MNJIORCC Osmania Medical College

State:

Telangana

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

Title: Predicting Treatment Default in Oncology: A Simple, Scalable Risk-Stratified Model for Resource-Limited Settings

Objective of the Solution: To develop and implement a rapid, clinically integrated risk assessment model that identifies patients at high risk of treatment default and enables targeted interventions to improve adherence, treatment completion, and outcomes in oncology 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.):

Treatment default is a major contributor to poor cancer outcomes in India. Patients frequently miss chemotherapy cycles due to financial, logistical, and psychosocial barriers, often returning with advanced disease.

This proposal introduces a Default Risk Score (DRS) based on key factors such as distance from treatment centre, socioeconomic status, health literacy, caregiver availability, and prior compliance behavior.

Patients are stratified into:

- High-risk
- Moderate-risk
- Low-risk

Each category is linked to predefined interventions:

High-risk: patient navigator support, frequent follow-ups, financial/social assistance linkage

Moderate-risk: reminder systems and caregiver reinforcement

Low-risk: routine care

The scoring process takes less than two minutes and can be integrated into OPD workflow using paper or digital formats.

Example: A patient traveling long distances with limited literacy is identified as high-risk and receives structured follow-up and navigation support, preventing missed chemotherapy cycles.

This model enables early identification of vulnerable patients, improves treatment adherence, and ensures efficient allocation of limited support resources.

Full Name:

Senthamizhan.VS

Name of the Institution:

Regional Cancer Center (RCC), Trivandrum

State:

Kerala

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

To develop a resource-adaptive breast cancer Risk Assessment Model (RAM) adoption pathway that integrates IHC4 score and NHS Predict with selective use of Oncotype DX in early-stage HR-positive, HER2-negative breast cancer, enabling cost-effective, evidence-based adjuvant chemotherapy decision-making in routine clinical practice, particularly in low- and middle-income settings.

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.):

Breast cancer treatment decisions in early-stage HR-positive, HER2-negative disease are increasingly dependent on recurrence risk assessment models (RAMs). Although Oncotype DX is a validated genomic tool for predicting recurrence risk and chemotherapy benefit, its routine adoption remains limited in many oncology settings because of high cost, limited accessibility, delayed turnaround time, and lack of workflow integration.

We propose a “Resource-Adaptive Integrated Breast Cancer RAM Pathway” that combines low-cost clinicopathological tools with selective genomic testing to optimize treatment personalization.

The proposed workflow begins with routine assessment of age, tumor size, grade, nodal status, ER, PR, HER2, and Ki-67. These variables are incorporated into IHC4 and NHS Predict models to stratify patients into low-, intermediate-, and high-risk categories. Patients with concordant low- or high-risk scores proceed directly to endocrine therapy-based or chemotherapy-inclusive treatment plans. Selective Oncotype DX testing is reserved for clinically discordant or intermediate-risk cases where treatment decisions remain uncertain.

The model integrates RAM outputs into multidisciplinary tumor board discussions and electronic treatment pathways, enabling clinicians to rapidly identify high-risk patients while avoiding unnecessary chemotherapy and excessive genomic testing.

This strategy addresses major barriers to RAM adoption by improving affordability, scalability, workflow feasibility, and evidence-based decision-making. The proposed pathway is particularly relevant for resource-constrained oncology systems and may serve as a practical national framework for precision oncology implementation in breast cancer care.

Full Name:

Foram Joshi

Name of the Institution:

Kidwai Memorial Institute of Oncology, Bengaluru

State:

Karnataka

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

Risk adoption model formulation and implementation might seem impossible in Indian population secondary to workforce shortage and infrastructural limitation, but research must not be denied. In the era of digitalization, AI and precision oncology nothing is impossible and hence initiation of formulation must be encouraged and strategically tailored with idea of quality care execution.

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.):

Taking into consideration for a specific malignancy for example colon cancer, risk adoption model must begin right from screening of population, identifying high risk cohorts who need strategic screening for colonic malignancy. Screening and counselling is most difficult task in absolutely asymptomatic individuals and hence adherence to screening is challenging. The psychosocial impact and constant fear of cancer is devastating in these high-risk cohorts and might impair existing quality of care and hence risk adoption models must be precise and must be backed up with adequate support services.

Risk adoption models in already diagnosed cancer patients can be made at various strata. Designing the models which guide treatment strategy and predict survival outcomes can assist in quality patient care with clear information and education of treatment strategize assurance with encouragement towards adherence to treatment. These models must provide overall cost estimation of treatment to improvise patient centered care. There must be risk adoption model on individual treatment strategy and benefit as well prediction of toxicity for example if patient is planned for chemotherapy treatment, there must be models designed which predict risk of toxicity in individual patient and help clinician tailor dosage taking into consideration wider patient profile.

Risk adoption models must also provide information on patient surveillance strategy and propose follow up algorithm. In the era of AI and molecular oncology with liquid biopsy, Ct-dna, cell free dna, circulating tumor cells, etc it is possible to tailor surveillance strategy and predict early recurrence way beyond clinical and radiological progression and hence strategize pre-emptive methods towards prolongation of survival and improvised quality care.

Underutilization of risk adoption model is multifactorial. These mainly include lack of quality education among professionals due to dynamicity in cancer care, workforce shortage, infrastructural caveats, financial burden, lack of structured data analysis, and population awareness. At times there is reluctance from high-risk individuals towards screening adoption models as well.

If the above-mentioned barriers are addressed we can bridge the gap of quality cancer care. It is impossible to have risk adoption model at each parameters at once however small efforts towards adoption in patient care delivery must be prioritized with gradual increase in expansion towards surveillance strategy and screening high risk individuals.

The existing risk adoption models mainly cater to results to western data cohort, we must realize that there is heterogeneity with cancer type, presenting symptoms, age, metabolism of chemotherapy medications, and variation in ethnicity and pharmacogenomics do affect the outcome prediction.

Catering to these fallacies in cancer care there is need for formulation of indigenized risk adoption models. We must realize that the biggest pillar towards formulation of such models is that data analysis. Hence data entry and analysis from each cancer center is crucial. With AI, digitalization and electronic medical records data entry isn't myth and hence focusing on this aspect must be priority towards formulation of risk adoption model which cater to Indian population.

Full Name:

Sakthi Vignesh D

Name of the Institution:

Government Kilpauk Medical College (GKMC), Chennai

State:

Tamil Nadu

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

Focus – Comprehensive Geriatric Assessment

CGA is a multidimensional process used to determine the medical, psychological & functional capabilities of an older patient with cancer. It helps to predict the risk of chemotherapy related toxicity and decide treatment based on patient fitness. Also helps to identify non-oncological issues of the patient malnutrition, depression, etc. and serves as a stronger predictor of overall survival in the elderly. CGA is underused because of the following constraints—time, manpower, knowledge, patient related.

Time constraint- due to increased load of patients seen by doctors daily, no ample time to comprehensively perform CGA.

Manpower constraints- very less number of CGA trained personnel in India and cancer centres are not affordable to employ them in many places.

Knowledge constraints- most of the time, much importance not given to CGA and elders are treated with a rough assumption basis only.

Patient related constraints- patients are already constrained financially in their regular treatment. So they feel not to spend extra for this exhaustive geriatric assessment.

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.):

Policy makers should be made aware of cost benefit and effectiveness of incorporating CGA in routine practice — both to the government and to the patient.

Premier institutes like JIPMER, TMH, CMC—can organise frequent hands-on workshop and fellowship programs and frequent CMEs to train doctors, nurses and paramedical personnel and these institutes can also do quality assessment of their trainees frequently to check the effectiveness of their programs.

These trained personnels can be incentivised for doing these assessments to the elderly. In this way, the government can cost cut in its budget, at the same time quality care is ensured for the patient.

A mobile app can be designed, which can be a cost-effective approach, and integrate with existing hospital HMIS software. Using a mobile app, even a caretaker can download it and fill the details in CGA and the output can be assessed by the physician—saving a significant amount of time. Initially the G8 score or VES13 score is analysed, and if the cutoff is reached, then they can be assessed for the full CGA assessment.

Final score of CGA should be integrated into patients records and physician should take necessary action to the score obtained. Periodic quality assessment and audits done internally in a productive manner, so that CGA is implemented effectively.

Full Name:

Habeeb K A

Name of the Institution:

VPS Lakeshore Hospital, Kochi

State:

Kerala

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

- Embed risk assessment models (RAMs) into routine clinical workflows as an automatic, not optional, step
- Ensure early identification of high-risk patients through structured, pre-consultation data capture and integration with EHR systems
- Standardize clear next-step pathways (screening, referral, high-risk clinics) after risk stratification
- Improve clinician adoption and trust through local validation and regular audit of RAM performance
- Enhance patient understanding and engagement using simple risk communication and navigator support
- Reduce missed opportunities by making risk assessment a seamless, time-efficient, system-driven process

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 (RAMs) are widely recommended in oncology guidelines, yet they are rarely used in daily practice. The issue is not the model itself, but how poorly it fits into real clinical workflows. To make them effective, we must embed them seamlessly into routine care rather than treat them as optional tools.

In busy clinics, time is a major limitation. Key information such as family history, reproductive factors, or past biopsies is often scattered or incomplete. There is usually no clear responsibility for performing risk assessment, so it is easily missed. Clinicians may also hesitate to rely on models developed in different populations, and identifying high-risk patients often creates additional work without structured support.

From the patient's perspective, risk is difficult to interpret. Many patients struggle to understand percentages or probabilities and may fear medications or extra investigations. As a result, even when risk is identified, it does not always lead to action.

The solution is to make risk assessment simple, automatic, and integrated into care pathways. Basic data can be collected before consultation through short questionnaires. Risk calculation should be linked to routine events such as screening or imaging reports, ensuring it happens without extra effort. Once high risk is identified, there must be a clear next step, such as referral to a dedicated high-risk clinic.

Patient navigators can help bridge the gap by explaining risk in simple language and guiding patients through screening or preventive strategies. Integration with electronic health records and simple decision-support alerts can further improve uptake.

Regular audit and local validation of these models help build clinician confidence and ensure relevance to the population served. Ultimately, risk assessment becomes effective only when it is part of the system acting as a silent, continuous safety net that supports early detection and prevention.

Full Name:

Monish Balaji S

Name of the Institution:

Kilpauk Medical College, Chennai

State:

Tamil Nadu

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

To ensure greater adoption of risk assessment models in oncology

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.):

1. Adopting a risk assessment model such as the Gail model for breast cancer requires a structured pathway. First, clinicians define the target population, typically women attending screening or oncology clinics. Second, relevant variables including age, reproductive history, family history, prior biopsies, and ethnicity are systematically captured in electronic or paper records. Third, the model is validated locally using hospital or registry data to ensure calibration for Indian populations. Fourth, risk thresholds are agreed upon to stratify patients into low, intermediate, and high-risk groups, guiding screening intensity and preventive interventions such as chemoprevention or early imaging follow-up.

2. Despite strong predictive performance, the Gail model is underused in routine oncology practice. A major reason is lack of awareness among primary care physicians regarding formal risk tools. Additionally, many settings lack structured data capture systems, making input variables difficult to obtain accurately. There is also skepticism about model validity in non-Western populations, where genetic and environmental factors differ. Time constraints in busy clinics and absence of integrated software within electronic health records further limit routine adoption.

3. Integration of the Gail model into clinical workflow can be improved through digitized risk calculators embedded in electronic medical records. Automated population screening tools can flag high-risk individuals during registration. Training programs for clinicians can improve familiarity with interpretation of risk scores. National cancer programs can standardize data collection fields to ensure completeness of input variables. Mobile health applications can allow patients to self-report risk factors, reducing clinician burden. Linking risk outputs directly to guideline-based recommendations enables actionable decision support at the point of care. Such a system, when coupled with audit and feedback mechanisms, ensures continuous refinement of risk prediction accuracy and promotes equitable implementation across diverse healthcare settings in India.

Full Name:

Dr Mohamed Thanish

Name of the Institution:

Stanley Medical College, Chennai

State:

Tamil Nadu

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

To address the underutilization of validated risk assessment models in oncology clinical practice using the IPSS-M in myelodysplastic syndromes as a focused example and to propose a practical integration framework that embeds risk stratification into routine clinical workflow rather than treating it as an optional academic exercise.

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.):

Consider a 64-year old man referred to our centre with low-blast MDS, a normal karyotype, and haemoglobin of 9. By IPSS-R, he scores as Intermediate risk. We initiate ESA therapy and plans review in three months. What the IPSS-R does not capture is that this patient carries a RUNX1 mutation and biallelic loss of function in a splicing factor. By IPSS-M, he is High risk. The conversation about transplant eligibility needed to happen at diagnosis, not after two years of watch and wait. This is not an edge case. It is the consequence of using a risk model built in 2012 to make decisions in 2026

The IPSS-M, published in the New England Journal of Medicine Evidence in 2022, incorporates 31 clinical and molecular variables and reclassifies roughly 46 percent of patients compared to IPSS-R, predominantly into higher risk categories. Its superiority in predicting overall survival and AML transformation is not marginal. It is substantial. Yet most Indian haematology centres continue to use IPSS-R because it requires nothing beyond cytogenetics and cell counts. The reason IPSS-M is underused is not skepticism. It is friction. Molecular data is collected but not linked to the risk calculator. The calculator exists online but requires manual data entry. No electronic health record auto generates the score. No pathology report includes it. So it stays in journals rather than clinics.

The solution is structural. Every MDS diagnostic report from an NCG affiliated pathology department should include IPSS-M as a mandatory field, auto calculated from the molecular panel data already collected. The MDT proforma should require IPSS-M documentation before any treatment decision is recorded. This turns an optional academic exercise into a clinical standard, without asking anyone to do additional work.

Full Name:

Jarfin I M

Name of the Institution:

Gleneagles Health City, Chennai

State:

Tamil Nadu

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

To integrate practical risk assessment models into routine oncology care so that treatment decisions become more proactive, personalized and evidence-based.

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 are most useful when they solve a real clinical problem. Examples include Gail and Tyrer-Cuzick models in breast cancer risk prediction, Caprini score for thrombosis, MASCC score in febrile neutropenia, IMDC criteria in renal cell carcinoma and geriatric assessment tools in elderly oncology. The best RAMs are simple, validated and capable of changing management decisions. Despite strong evidence, RAMs remain underused because busy clinics prioritize immediate treatment decisions over structured risk stratification. Many models are time-consuming, poorly integrated into hospital systems or developed using Western datasets that clinicians feel may not fully represent Indian patients. Another challenge is that clinicians often trust experience more than standardized scoring systems.

The solution is workflow integration, not additional paperwork. RAMs should be embedded into electronic records, chemotherapy templates and nursing triage systems so that scores are generated automatically during consultations. High-risk alerts can trigger thromboprophylaxis evaluation, genetic counselling, ICU monitoring or nutritional intervention. In resource-limited settings of Tamil Nadu, simplified paper-based or mobile-app versions can still be highly effective.

Training is equally important. Residents, nurses and junior oncologists should be taught not just how to calculate scores, but how those scores alter outcomes and resource utilization. Periodic audits should evaluate whether RAM-guided decisions actually improve toxicity, admissions and survival.

Roche can contribute through digital-support tools, educational initiatives and real-world registry collaborations.

A great oncology system does not wait for complications to happen. It identifies vulnerable patients early and intervenes before suffering becomes irreversible.

Full Name:

Dr. Chilamkurty Maitreyi

Name of the Institution:

Stanley Medical College

State:

Tamil Nadu

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

Problem statement: Validated Oncology risk assessment models exist, but adoption into real world practice remains poor. The issue is not lack of evidence, it is workflow failure. Clinicians in busy oncology settings rarely have time to manually calculate risk scores, fragmented data sits across pathology, imaging, labs, case sheets, Electronic health records and many RAMs are perceived as academic rather than actionable. As a result high risk patients are missed, treatment decisions vary between clinicians and preventable complications occur

Objective: To Embed evidence-based oncology RAMs directly into routine clinical care, transforming passive scoring tools into active decision support systems that improve consistency, safety and outcomes.

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.):**Solution:**

ONCO NUDGE-A behavioural clinical intelligence model that pushes RAM driven decisions at the exact care moment.

Work flow-

- 1.AUTODETECT-pulls existing data automatically (CBC, diagnosis, treatment taken).
- 2.AUTO SCORE-Calculates relevant RAMs invisibly in the background (example-Khorana score, PREDICT, CPS-EG, etc)
- 3.SMART NUDGE-Real time prompts-"High VTE risk detected-consider thromboprophylaxis review".
- 4.ACTION PATHWAY-One click guideline-based recommendation, documentation, referral.
- 5.AUDIT LOOP-Tracks Adoption, overrides and outcomes.

CASE SOLUTION: 45-year-old male, diagnosed pancreatic cancer, starting chemotherapy with high platelet count and anaemia may never be risk stratified, later presenting with a life-threatening pulmonary embolism that could have been prevented.

ONCO NUDGE applied-instantly flagged high risk, nudging the clinician toward thromboprophylaxis, preventing avoidable pulmonary embolism, timely evidence-based intervention.

Full Name:

Livin T

Name of the Institution:

Madurai Medical College, Kanyakumari

State:

Tamil Nadu

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

We should finally start making genuinely informed, evidence-based calls about whether to resect upfront or delay surgery to manage the systemic disease first.

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.):

Figuring out who actually survives a major liver resection for colorectal metastases remains incredibly debated. We have tools like the Fong Clinical Risk Score. It carefully tracks parameters like the disease-free interval and preoperative CEA levels to gauge long-term survival. But almost no one actually uses in outpatient clinic.

Why they have not been used? Because as surgeons, we tend to just see the cross-sectional imaging. We look to see if we can technically achieve an R0 margin. If the lesions are resectable, we simply book the OR. We essentially ignore the underlying biological behaviour of the tumor. And digging through archived pathology reports just to manually calculate a risk score is incredibly difficult for surgeons.

But bypassing these validated biological models totally contradicts the precision frameworks pushed by recent NCCN and ESMO guidelines. To actually force adoption of this risk assessment, you have to completely rip out the manual labour. The smartest fix is hardwiring the calculator straight into the hospital's electronic health record.

When we submit a borderline GI case to the multidisciplinary tumor board, the software should automatically scrape the recent lab values and the primary tumor data. It needs to spit out the Fong score right at the very top of the digital proforma. And that objective biological risk number absolutely must be visible before medical oncology even brings up a potential trial arm for neoadjuvant systemic control. If you force the entire room to confront that data immediately, it totally shifts the dynamic. We finally start making genuinely informed, evidence-based calls about whether to resect upfront or delay surgery to manage the systemic disease first.

Full Name:

Krishna Khushiram Ratanchandani

Name of the Institution:

Aster CMI Hospital, Bangalore

State:

Karnataka

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

Cancer is increasingly becoming a disease of the ageing population. According to global cancer statistics, the number of older adults diagnosed with cancer continues to rise due to increased life expectancy and population ageing. However, treatment decisions for elderly patients are still frequently based on chronological age and ECOG performance status alone. While ECOG assesses general functional status, it does not capture important geriatric vulnerabilities such as falls, frailty, hearing impairment, social support, nutritional status, and functional dependence. As a result, two elderly patients with the same ECOG score may have vastly different abilities to tolerate chemotherapy.

The importance of geriatric assessment was highlighted by the landmark GAP70+ randomized controlled trial, published in The Lancet in 2021, which demonstrated that geriatric assessment-guided interventions significantly reduced Grade 3–5 chemotherapy toxicity from 71% to 51% without compromising outcomes. Despite endorsement by ASCO, ESMO, and NCCN guidelines, geriatric risk assessment models such as the CARG score remain underutilized in routine oncology practice because of time constraints, lack of awareness, and poor integration into clinical workflow.

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.):

I propose the implementation of an Electronic CARG Platform (E-CARG) to enable universal adoption of the Cancer and Aging Research Group (CARG) score in oncology practice.

The system begins at the point of hospital registration. Whenever a patient aged 65 years or older registers in the hospital information system, an automated WhatsApp message containing a secure QR code link to the CARG assessment questionnaire is instantly sent to the patient's registered mobile number. The questionnaire is designed in simple language and can be completed by the patient or caregiver within a few minutes.

Completion of the assessment becomes a standard part of the registration process. Once submitted, the system automatically calculates the CARG score and uploads it directly into the patient's electronic medical record without requiring any manual data entry by healthcare providers.

When the patient attends the oncology outpatient clinic, the oncologist can immediately view the result on the hospital dashboard. The score is displayed using a simple color-coded system:

Green — Low Risk

Yellow — Intermediate Risk

Red — High Risk

Alongside the score, the platform generates evidence-based recommendations such as consideration of dose reduction, enhanced toxicity monitoring, nutrition consultation, physiotherapy referral, falls prevention strategies, medication review, or comprehensive geriatric assessment referral where appropriate.

By embedding the CARG score directly into routine registration and electronic medical records, this solution eliminates additional workload for clinicians while ensuring that every older adult receives a personalized risk assessment. This approach transforms geriatric oncology from a guideline recommendation into a standard component of everyday cancer care, improving treatment safety and quality of life for elderly patients.

Full Name:

Jagga Sankalp Harish

Name of the Institution:

Kidwai Memorial Institute of Oncology, Bengaluru

State:

Karnataka

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

To evaluate the role of validated Risk Assessment Models (RAMs) such as ROMA, OVA1, mammography-based risk assessment, PSA testing, and colonoscopy in identifying high-risk individuals and enabling early cancer detection.

To identify barriers limiting the adoption of RAMs in routine oncology practice and develop practical strategies for their integration into clinical workflows.

To promote risk-adapted screening and surveillance through multidisciplinary collaboration, EMR-based decision support systems, and personalized patient management approaches.

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 (RAMs) help identify patients at increased risk of developing cancer or experiencing adverse outcomes, enabling earlier diagnosis, personalized screening, and timely intervention. Common examples include ROMA and OVA1 for ovarian cancer, mammography-based risk assessment for breast cancer, PSA testing for prostate cancer, and colonoscopy-based screening for colorectal cancer.

Why are RAMs Underused?

Despite their proven value, RAMs remain underutilized due to:

- Limited awareness and familiarity among healthcare providers.
- Lack of standardized implementation protocols.
- Limited access to specialized tests and screening facilities.
- Concerns about false-positive results, overdiagnosis, and overtreatment.
- Poor integration into electronic medical records (EMRs).
- Low patient awareness and poor adherence to screening recommendations.

Solutions for Clinical Integration

- Embed RAMs into EMRs with automated reminders and clinical decision-support alerts.
- Develop standardized screening and referral pathways based on risk categories.
- Provide regular clinician education and patient awareness programs.
- Establish multidisciplinary review of high-risk patients.
- Monitor outcomes through audits and quality-improvement initiatives.

Examples of RAM Application

- ROMA (Risk of Ovarian Malignancy Algorithm) and OVA1 can improve triage of women with adnexal masses, ensuring timely referral to gynaecologic oncologists.
- Mammography, combined with family history and genetic risk factors, can identify women who require intensified surveillance.
- PSA testing helps identify men at increased risk of prostate cancer and guides further investigations such as MRI and biopsy.
- Colonoscopy remains the gold standard for detecting and removing premalignant colorectal lesions, reducing cancer incidence and mortality.

In my view, the main challenge is not the absence of RAMs but their inconsistent use in routine clinical practice. These tools should complement — not replace — clinical judgment. Future oncology care should move toward risk-adapted screening and surveillance, in which screening intensity and follow-up are tailored to individual patients' risk. Integration of clinical data, imaging, pathology, biomarkers, and genomics — supported by AI — can create dynamic risk models that continuously update over time.

Full Name:

Dr. Chirag Gajera

Name of the Institution:

JNMC, Belagavi

State:

Karnataka

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

To implement effective risk assessment models (RAMs) in oncology practice to enable early identification of high-risk individuals, support personalized screening and treatment decisions, and improve prevention, early detection, and patient outcomes through data-driven 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.):

Risk assessment models should be selected according to the specific cancer type and clinical objective. Examples include breast cancer risk prediction models for hereditary and sporadic risk assessment, colorectal cancer risk calculators for early detection strategies, lung cancer risk models for screening eligibility, and prognostic models for predicting recurrence or treatment outcomes.

Despite their clinical value, RAMs are underused due to limited awareness among healthcare providers, lack of integration with electronic health records, complexity of interpretation, inadequate validation in diverse populations, limited access to genetic testing, and uncertainty regarding how results should influence clinical decisions.

Solutions include integrating validated RAMs into electronic medical record systems with automated risk calculation, developing user-friendly clinical decision support tools, and providing training programs for physicians and healthcare teams. Risk assessment should be incorporated into routine clinical pathways, including primary care referrals, cancer screening programs, and multidisciplinary discussions.

Implementation should include regular validation using local patient data, monitoring of clinical outcomes, and periodic model updates. Collaboration between oncologists, genetic counsellors, data scientists, healthcare institutions, and policymakers can support sustainable adoption.

A standardized workflow involving patient risk identification, assessment, counselling, appropriate screening or preventive intervention, and follow-up monitoring can make RAMs a practical component of modern oncology care.

Full Name:

Kashinath Benakatti

Name of the Institution:

Kidwai Memorial Institute of Oncology, Bangalore

State:

Karnataka

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

To evaluate the barriers to adoption of a Risk Assessment Model (RAM) in oncology and develop strategies for its integration into routine clinical workflows to improve identification of high-risk patients, support evidence-based decision-making, and enhance patient outcomes.

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.):

Adoption of Risk Assessment Models (RAMs) in Oncology

Risk Assessment Models (RAMs) facilitate personalized cancer prevention, screening, treatment planning, and survivorship care by identifying individuals at increased risk of adverse outcomes. Successful adoption requires selecting an appropriate model, understanding barriers to implementation, and integrating it into routine clinical practice.

Focus on a Specific RAM

One widely used RAM is the Gail Model for breast cancer risk assessment. It estimates a woman's risk of developing invasive breast cancer using factors such as age, reproductive history, family history, and previous breast biopsies. Similar validated RAMs are available for lung cancer screening, hereditary cancer syndromes, colorectal cancer risk, and cancer-associated thrombosis. The chosen RAM should be evidence-based, clinically relevant, and validated in the target population.

Why Are RAMs Underused?

Despite proven utility, RAMs remain underutilized in oncology due to several barriers:

- Limited awareness and training among healthcare professionals.
- Time constraints in busy outpatient clinics.
- Lack of integration with electronic health records (EHRs).
- Dependence on manual data entry and additional documentation.
- Concerns regarding predictive accuracy in diverse populations.
- Absence of institutional protocols mandating risk assessment.
- Limited patient awareness of risk-based screening and prevention.

These challenges prevent routine use and limit personalized decision-making.

Strategies for Adoption

- Integrate RAM calculators into EHR systems with automated data extraction.
- Generate real-time risk scores and clinical alerts during patient visits.
- Link risk categories to evidence-based screening and management pathways.
- Train clinicians through continuing medical education and decision-support tools.
- Incorporate risk assessment into outpatient registration and preventive oncology clinics.
- Use digital questionnaires or patient portals to collect risk information before consultations.
- Conduct periodic audits to evaluate utilization, accuracy, and impact on outcomes.

Effective adoption of RAMs enables early identification of high-risk individuals, improves resource allocation, supports personalized oncology care, and ultimately enhances patient outcomes.

Full Name:

Thapashwi B G

Name of the Institution:

Sri Shankara Cancer Hospital & Research Centre, Bengaluru

State:

Karnataka

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

Mr. D, a 74-year-old with metastatic gastric cancer, looked fit enough in clinic, so we started full-dose doublet chemotherapy. Ten days later he was in intensive care with grade 4 neutropenic sepsis. He never recovered enough to continue treatment. A validated tool, the CARG geriatric chemotherapy-toxicity score would likely have flagged his high risk and prompted a gentler regimen. But CARG needs information we rarely record such as whether he had fallen recently, could walk a block, managed his own medication, or had help at home. ASCO recommends this assessment for every patient over 65 starting chemotherapy but in our clinics it is almost never done, due to extremely high clinical load and the questions live nowhere in the chart.

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.):

I propose RiskScout, a module that closes the gap for risk models whose key inputs are not all in the EMR, by doing the collection work the clinic has no time for. It runs quietly alongside the visit.

1. First, it continuously scans the EMR and flags everyone who should be scored. For CARG, any patient aged 65 or older starting chemotherapy, so no high-risk patient is silently missed.
2. For each, it pre-fills what the chart already holds such as age, cancer type, regimen and number of agents, haemoglobin and creatinine clearance and leaving only the few items the record cannot supply.

3. Those missing items are precisely the ones that predict toxicity, recent falls, whether the patient can walk a block, manages their own medication, hears well, or has withdrawn socially. So RiskScout turns them into a short, personalised question set, delivered either as a prompt to the doctor during the visit or as a simple form sent to the patient by SMS or app beforehand.

4. Once those four or five answers return, the score completes itself, and a high-risk result prompts a guideline-concordant response like dose reduction, a gentler regimen, pre-habilitation or a geriatric referral before the first cycle rather than after a toxic event.

5. Over time it compares its predictions against the toxicity our patients actually experience, recalibrating its thresholds for a population where frailty and undernutrition differ from trial cohorts.

The principle throughout is that adoption fails for lack of time, not evidence and by finding the right patients and asking only what is missing, RiskScout makes a guideline recommended but abandoned assessment finally happen.
