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Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
AI-Driven Clinical Decision Support for Precision Oncology using Real-World Data.

Objectives:

- 1) Modern oncology generates large volumes of clinical, imaging and molecular NGS (Next Generation Sequencing) data, but integrating them into treatment decisions remains difficult.
- 2) Complex NGS interpretation is challenging, especially in tertiary and resource-limited settings without molecular tumor boards or expert genomic guidance.
- 3) Most precision oncology decisions rely on Western data, while Indian real-world factors such as tumor biology, affordability, and treatment access remain underutilized.
- 4) There is a need for a scalable AI-based clinical decision-support system to provide faster, accurate decision-making and practical precision oncology recommendations.

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.):

Proposed solution:

- 1) We propose a simple AI-based clinical decision-support platform for routine oncology practice:
 - Data Included -Clinical details and performance status, Comorbidities, Imaging findings
 - Histopathology, Molecular NGS reports, Treatment received, Patient outcomes (response, survival, toxicity)
 - The platform combines data from multiple cancer centers to create a real-world Indian oncology database.
 - It is designed specifically for Indian patients and integrates clinical, molecular, and outcome data to support practical treatment decisions.

2) How It Works

For every new patient, the system:

- Analyses all available clinical and molecular data
- Matches the patient with similar previously treated cases
- Suggests treatment options based on:

NCCN/ESMO/ASCO guidelines

Real-world treatment outcomes

Drug availability and cost in India

The platform continuously improves as more patient data is added.

3) Where It Helps

- NGS Interpretation - Priorities important mutations and links them to targeted therapies
- Complex Cases - Supports decision-making in rare or difficult situations
- Smaller Centers - Provides tumour board-level guidance where expertise is limited.

4) Implementation Plan

- Phase 1: Pilot in major cancer centers
- Phase 2: Expand to regional hospitals
- Phase 3: Develop a nationwide learning cancer data network

5) Safety and Control

The system supports oncologists but does not replace them. Final treatment decisions remain with the treating oncologist and tumor board.

6) Expected Benefits

- More accurate treatment selection
- Faster clinical decisions (time reduction)
- Better confidence in complex cases
- Development of Indian real-world cancer data
- Improved access to precision oncology in smaller centers

7) Conclusion

- Large amounts of molecular data are generated in oncology practice, but their clinical use remains challenging.

This platform converts complex molecular and clinical data into clear, practical treatment recommendations, making precision oncology more accessible and effective in real-world India settings.