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CURATED & WRITTEN BY

**Bharat Choudhary**

UPSC Educator & Content Creator

[in linkedin.com/in/epicbharat](https://www.linkedin.com/in/epicbharat)

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AstraZeneca's Amaravati Genomic Oncology Centre: AI, Genomics and Public Cancer Care

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✓ Every fact web-verified against primary sources

AstraZeneca India announced an integrated genomic solutions centre in Amaravati, Andhra Pradesh, partnering with the Andhra Pradesh government, Strand Life Sciences and Qure.ai, as part of India's first Integrated Precision Oncology programme, initially targeting lung and breast cancer.

WHAT THE PROGRAMME DOES

COMPONENT	FUNCTION
AI-powered X-ray screening (Qure.ai)	Flags suspicious findings on routine chest X-rays for early lung cancer detection
Genomic/biomarker testing (Strand Life Sciences)	Identifies the specific genetic mutations driving a patient's tumour
Treatment planning	Matches the genomic profile to targeted therapies, rather than a uniform chemotherapy protocol
Follow-up	Tracks treatment response and disease recurrence over time

The programme is designed as an **end-to-end pipeline** for government hospitals: from population-level AI screening at the front end, through molecular diagnosis, to a treatment decision informed by the tumour's actual genetic makeup, and then longitudinal follow-up. This is distinct from conventional cancer care pathways in the public system, which have typically relied on clinical staging and standard-protocol chemotherapy without routine genomic testing.

WHAT PRECISION ONCOLOGY MEANS

Precision oncology (also called personalised oncology) treats a cancer based on the specific molecular and genetic characteristics of an individual patient's tumour, rather than only its location and stage. Two tumours that look identical under a microscope can carry entirely different genetic mutations, and therefore respond

very differently to the same drug. **Genomic testing** identifies these mutations, allowing clinicians to select a **targeted therapy** designed to act on that specific molecular pathway, or to determine that a patient will not benefit from a therapy and should avoid its cost and side effects.

This approach depends on three things working together: a large enough population screened early (so cancers are caught while still treatable), a genomic testing infrastructure capable of processing that volume at reasonable cost, and access to the targeted drugs that make genomic information clinically actionable. The Amaravati centre is designed to build the first two pieces within India's public hospital system.

WHY LUNG AND BREAST CANCER

CANCER	WHY PRIORITISED
Lung cancer	Often diagnosed late in India because early symptoms are non-specific; AI-assisted chest X-ray screening can catch it earlier at a population scale using equipment India's hospitals already have
Breast cancer	India's most common cancer among women by incidence; genomic subtyping materially changes treatment choice (for example, identifying hormone-receptor or HER2 status)

FITTING INTO INDIA'S PUBLIC HEALTH ARCHITECTURE

The initiative sits at the intersection of two ongoing national efforts:

- **Ayushman Bharat**, India's flagship public health coverage scheme, under which diagnostic and treatment infrastructure gaps, particularly for high-cost interventions like genomic testing, remain a persistent implementation challenge.
- **National Programme for Prevention and Control of Non-Communicable Diseases (NP-NCD, earlier NPCDCS)**, under which cancer is one of the four major non-communicable diseases (along with cardiovascular disease, diabetes and stroke) targeted for early detection and management at the primary and secondary care level.

A private-sector-and-State-government partnership that embeds AI screening and genomic testing directly into government hospital workflows is one model for closing the diagnostic gap without requiring the public system to build this specialised capacity entirely on its own.

UPSC RELEVANCE

GS Paper 3: Science and Technology, developments in biotechnology, artificial intelligence and their application in healthcare; [indigenisation](#) of technology.

GS Paper 2: Issues relating to development and management of the health sector; public-private partnership models in service delivery; government policies for Non-Communicable Disease control.

Prelims pointers:

- The Amaravati centre is a partnership of **AstraZeneca India, the Andhra Pradesh government, Strand Life Sciences and Qure.ai**.
- Focus cancers: **lung and breast cancer**.
- **Precision/personalised oncology** uses a tumour's genomic profile to select **targeted therapy**.
- Cancer is one of the four major diseases addressed under India's **National Programme for Prevention and Control of Non-Communicable Diseases**.
- Breast cancer is India's **most common cancer among women** by incidence.

★ FACTS CORNER, KNOWLEDGE PEDIA

AMARAVATI GENOMIC ONCOLOGY CENTRE:

Partners: AstraZeneca India, Government of Andhra Pradesh, Strand Life Sciences, Qure.ai.

Components: AI-powered X-ray screening (Qure.ai), genomic/biomarker testing (Strand Life Sciences), targeted treatment planning, follow-up.

Focus: lung and breast cancer, deployed in government hospitals.

PRECISION ONCOLOGY:

Uses a tumour's specific genetic mutations, not just stage/location, to select therapy.

Requires population screening, genomic testing infrastructure, and access to targeted drugs.

POLICY CONTEXT:

Ayushman Bharat: India's flagship public health coverage scheme.

National Programme for Prevention and Control of Non-Communicable Diseases: covers cancer, cardiovascular disease, diabetes and stroke.

Sources: *PIB, Ministry of Health and Family Welfare, GKToday*

Source: AstraZeneca's Amaravati Genomic Oncology Centre: AI, Genomics and Public Cancer Care — Ujjayanti.com |
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Bharat Choudhary

UPSC Educator & Content Creator

 [linkedin.com/in/epicbharat](https://www.linkedin.com/in/epicbharat) [Read Full Article on Ujiyari →](#)<https://ujiyari.com/daily/2026/07/28/astrazeneca-genomic-oncology-amaravati-2026/>

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