



Newsletter

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CONTENT

▮ Advisor Insight	1
▮ Expert Insight	2
▮ Stories of Hope	3
▮ Policy Insights	4
▮ Pipeline News	5
▮ Pharma and Medical Device Developments	6



Advisor Insight

According to recent data, cervical cancer is the India's second-most prevalent malignancy in women. The country also accounts for 25% of all cervical cancer-related fatalities worldwide. This discrepancy is brought on by inadequate screening and delayed access to care, compounded by the fear of cancer and the stigma associated with gynecological illnesses and vaccines have previously served as obstacles to education and screening for cervical cancer. Misconceptions about the screening procedure, a lack of community-level awareness of cervical cancer, and a failure to prioritise women's health have historically been additional barriers.

To address the gaps in cervical prevention and care, at JHPIEGO our interventions span across three geographies of the country, working mostly in the following areas of a) Competency building; b) Implementation model for new guidelines: 90-70-90; c) New modalities for screening and diagnosis through HPV DNA testing and AI powered Smart-scope for cervical cancer screening. It has been determined that a lack of screening and treatment contributes to the emergence of invasive cancer, which is fatal. Under these circumstances, in the state of Uttar Pradesh, we are working in the district of Amethi. The team holds demonstrations in public health settings and undertake screening services through three modalities as follows – Camp approach, Self-sampling, and Opportunistic screening. Following this, the screen positive clients are then treated on fixed day using cryotherapy, in the catering Community Health Centre

Further in the State of Sikkim, Jhpiego is operating in the districts of Gangtok and Sang to encourage primary screening for high-risk human papillomavirus. Efforts are being undertaken for the scaling of self-sampling modality followed by treatment through thermal ablation. The project is currently being carried out in partnership with National Institute of Cancer Prevention and Research. In addition to helping women who find it difficult to undergo speculum examinations, those with limited access to health services, or those who are alienated from health services, self-sampling can increase uptake among women who do not participate in routine cervical screening.

Additionally, for the districts of Ganjam and Khurda in the state of Odisha, stakeholder meetings were organised to identify gaps in screening. Following this, Jhpiego is now emphasising on strengthening of VIA as mandated by the state. In addition to this, newer modalities of improving interpretation of VIA, mainly through devices like smart scope is being introduced in selected geography, and subsequently operational feasibility will be demonstrated to the state.

It is essential to look at the areas susceptible to inadequate screening as well as trends and patterns in the prevalence of cervical cancer since India is working toward making the national level screening programme for the disease universal. Understanding the need for intervention in a diverse community like India requires a thorough understanding of screening and related socioeconomic variables. Primary preventive methods have made significant progress, which undoubtedly had an impact on cervical cancer incidence and death.



Dr Somesh Kumar
Country Director, Jhpiego

Expert Insight

According to the World Health Organisation, there are around 1.23 lakh new cases of cervical cancer annually in India and approximately 67,000 fatalities. This translates into a fifth of the global burden of cervical cancer. The majority of cervical cancer cases are caused by different strains of the Human Papillomavirus (HPV), a sexually transmitted infection. The elimination of cervical cancer is just one of the many issues that UHC aims to address. This is notable given that the disease is known to be prevented with a dose of the HPV vaccine, as well as by early detection and treatment of precancerous lesions. However, access to these services is out of reach for so many women. These disparities underline the critical need for sustained funding in the prevention, treatment, and palliative care phases of the cancer control continuum as well as in the creation of high-quality population-based cancer registries.

Cervical cancer control is one of the 16 basic health services included in the WHO's framework for universal health coverage as indicators of the degree and equality of coverage in various nations. Prioritizing preventative care coverage for treatments like HPV vaccination, HPV testing, and Pap tests would also help to assure universal access, especially so considering that the country will soon roll out its first Indigenous cervical cancer vaccine. Further, while the cervical cancer vaccination programme will be primarily targeted at girls, boys may potentially be vaccinated in the future because they can be HPV carriers. Additionally, HPV not only causes cervical cancer but also certain other forms, such as anal cancer.

It would be crucial for India to raise knowledge of the vaccine and develop demand for it in addition to supply-side actions. Cancer as a disease carries a great deal of societal stigma, which is sometimes made worse in the context of cervical cancer, a disease that mostly affects women. To ensure appropriate adoption, it is crucial to address any misunderstandings and misconceptions about the cervical cancer vaccination.

Cervical cancer education and screening have historically been hampered, just as they have in other parts of the world, by cancer fear, the stigma associated with gynaecological disorders, and vaccinations. In the past, there have also been misconceptions about the screening process, a lack of community-level awareness of cervical cancer, a failure to prioritise women's health, poor communication between healthcare providers and women, and a lack of dependable referral tracking systems, which has compromised follow-up.

It is important to use a variety of outlets to spread awareness, including the media and the appeal of celebrities. Implementing grassroots, targeted efforts that reach out to various demographic groups is equally vital. It is crucial to involve community leaders, religious leaders, and panchayat heads since they are respected and prominent voices in society.

Additionally, women-led self-help organisations can be a crucial channel for disseminating knowledge about the vaccine and encouraging girls to be immunised. In order to combat social stigma and promote vaccination knowledge, the primary healthcare staff at the HWCs will be crucial.



Ms Urvashi Prasad

Director-Development
Monitoring and Evaluation
Office (DMEO), Niti Aayog

Stories of Hope

I was diagnosed with cancer in 2005. On learning about it from the doctors, I was left in shock. But at that moment I did not react and all I wanted to do was to go home, close the door and cry loudly, why did this happen and why did this happen to me? My husband was extremely supportive and told me that I should not be scared as there is treatment available. We did not waste any time and went to the Rajiv Gandhi Hospital. After 2-3 days I got the operation done, then chemotherapy and radiation, and within 6 months all the required procedures were complete. After a year I faced some problems. I got the laparoscopy test for my liver, still was not getting any better. In the third year, I got diagnosed in uterus, and then with the operation being done, my uterus, ovary, and tubes were all removed. Following this, I decided that no matter what happens I will not lose courage. I then started going to the Indian Cancer Society and started meeting and interacting with cancer patients in hospitals. I was counselled and at the same time, I was counselling other people. The times were tough, but today, when we go as volunteers and provide moral support to the patients standing all fit in front of them, seeing the smile on their faces, gives us peace knowing that we have been able to bring out people from the place of fear.

The rest of it is that my daughter was unmarried and people told me that I should get her married as we never know whether I would

survive or not. I did not let this affect my daughter's life. She completed her MBA, and around the time of my third operation, she got married. Around that time, my weight was 30 kgs and 5 gms of blood was there, and it felt like I would not survive, and the doctors did not give any false hopes and conveyed to me and my family that looking at my condition it is difficult for me able to live long and that I need utmost care and should spend ample time with family at home. Yet I did not lose courage; after getting my daughter married, I asked the doctors to look into my condition and do the required tests so that I can be diagnosed accordingly. I kept a positive attitude even during the toughest times; Now I am in my best condition and everything is all right.



Ms. Kulbir Kaur

Volunteer and Coordinator,
Indian Cancer Society

National Developments



Policy Insight

- **THEME:** Cancer innovation
- **UPDATE:** Lack of generic options for anti-cancer drugs increasing patients' economic burden in India

Key Highlights

- In spite of the increasing incidence of non-communicable diseases (NCDs), cancer remains one of the leading causes of mortality in the world. According to the GLOBOCAN study of the International Agency for Research on Cancer, the burden of cancer will nearly double to 1.7 million cases in 2035 compared to 2012, when roughly one million cases were reported, and the number of cancer-related fatalities would rise from 0.68 to 1.2 million.
- A parliamentary panel requested the Centre earlier this month to cap cancer detection and treatment services in public and private hospitals and to offer free cancer care to middle-class households through a government-funded health insurance programme.
- Due to their high price tags, these branded medications are frequently out of reach and expensive, particularly for the underprivileged. When the drug's patent expires, other pharmaceutical companies may begin creating and marketing the generic version of the medication, which lowers the price of the medication.

- The Lancet Citizens' Commission on Reimagining India's Health System, according to Dr. Parth Sharma, a public health physician and researcher, says that while there are currently generic options for chemotherapy agents, which have helped to lower costs, there are still few options for immunotherapies or targeted therapy.

Policy Insight

- **THEME:** Cancer innovation
- **UPDATE:** SII launches India's first indigenously made cervical cancer vaccine

Key Highlights

- On the occasion of National Girl Child Day on February 24, the Serum Institute of India (SII) announced the launch of CERVAVAC, the country's first locally made quadrivalent human papillomavirus (qHPV) vaccine.
- SII declared the scientific completion of the cervical cancer vaccination in September 2022. Three vaccinations, Gardasil, Gardasil 9, and Cervarix, which prevent infection with disease-causing HPV, are presently being sold in several nations throughout the world, according to the US National Institutes of Health's (NIH) National Cancer Institute.

Policy Insight

- **THEME:** Cancer burden
- **UPDATE:** India Accounts For Highest Number Of Cervical Cancer Cases Worldwide

Key Highlights

- The majority of cervical cancer cases have been recorded from low- and middle-income nations, including India, South Africa (SA), China, and Brazil. Cervical cancer is thought to be the fourth most frequent malignancy in women worldwide. According to WHO projections, 342,000 cervical cancer-related deaths and 604,000 new cases were recorded globally in 2020, with 90% of these cases and fatalities taking place in low- and middle-income nations.
- According to a Lancet research, India has the most cervical cancer incidences recorded worldwide. Basis the report, which was based on The Global Cancer Observatory (GLOBOCAN) 2020, Asia accounted for more than 58% of all instances of cervical cancer and more than 50% of all fatalities. India had the greatest percentage of new cases (21%) and fatalities (23%) in Asia, followed by China (18 per cent cases and 17 per cent deaths).

Policy Insight

- **THEME:** Cancer burden
- **UPDATE:** Arsenic in water raises risk of gallbladder cancer: Study

Key Highlights

- According to a recent study, many of the poorest of the poor have been at risk for gall bladder cancer in areas of India's Bihar and Assam that are known to be arsenic-contaminated.
- The study, which was based on field research, discovered an increase in the occurrence of groundwater pollution with arsenic, which is widely recognised as posing a serious health risk. What is noteworthy, according to the report, is the connection between gallbladder cancer and arsenic in drinking water. The poorest of the poor are most negatively impacted because they must consume water that is tainted with arsenic owing to a lack of access to safe and clean drinking water.
- One of the team's principal investigators, Professor Ashok Kumar Ghosh, told NewsClick on Monday that persons from the lowest socioeconomic stratum were particularly at risk for gallbladder cancer as a result of arsenic pollution of groundwater.

- More than one-third of research participants had exposures that above the World Health Organization's 10 g/L recommended limit, and 6% had exposures that were greater than or equivalent to 50 g/L. Compared to participants in locations with the lowest levels of arsenic, more participants in regions with the highest levels of arsenic reported ingesting tubewell water with sediments and that it had an unpleasant colour, odour, and taste.

Pipeline News

- **THEME:** Cancer innovation
- **UPDATE:** Indian scientists discover new anti-cancer agent showing huge promise

Key Highlights

- In order to increase the chances of patients surviving oral cancer, a simple saliva test and a liquid biopsy may now be used to detect the disease early enough. Given that it is one of the tumours with the quickest rate of spread, early diagnosis is crucial, and PGI Chandigarh has created a ground-breaking liquid biopsy technology that achieves this. In terms of oral cancer research in the nation, this is a first.
- Treatment planning is improved by a non-invasive method of diagnosis made well before a standard clinical examination or radiological evidence. When the main tumour has already been removed and cannot be biopsied again, it can be used to detect disease recurrence following therapy.
- The test is affordable since it uses a non-invasive procedure that does not demand for specialised equipment and is not very difficult technically. Additionally, it was created in-house. PGI provided the project's first financing. The team and department have now been given a funding by the Indian Council of Medical Research (ICMR) to create the test for patient care. Prof. Pal notes that the exorbitant cost and lack of specialised instrumentation make liquid biopsy less common in India.

Pipeline News

- **THEME:** Cancer infrastructure
- **UPDATE:** Japan aided Cancer Hospital and Research Centre to be set up in Mizoram: Governor

Key Highlights

- Hari Babu Kambhampati, the governor of Mizoram, said on Thursday that the Japan International Cooperation Agency will provide funding for the construction of a Super-Speciality Cancer Hospital and Research Center in Aizawl (JICA). The governor stated that the Union Ministry of Health and Family Welfare is now considering the 700 crore project that received foreign assistance.

Pipeline News

- **THEME:** Cancer Treatment
- **UPDATE:** In a first in UP thyroid cancer removed by robotic surgery

Key Highlights

- Robotic surgery has successfully removed thyroid cancer for the first time in Uttar Pradesh. A 21-year-old woman with papillary thyroid carcinoma was successfully treated by surgeons at the Sanjay Gandhi Postgraduate Institute of Medical Sciences (SGPGIMS) using robotic surgery. According to a hospital press statement, the robotic operation performed at a government facility to completely remove a malignant thyroid gland was a first for India.
- The Prayagraj-born patient had a lump discovered, which led doctors at Kamala Nehru Cancer Hospital to make a diagnosis.
- According to Dr. Gyan Chand, the robotic thyroid surgeon at SGPGIMS, she was transferred to the Lucknow hospital since surgery without a throat incision was not possible owing to problems.

Pharma and Medical Device

- **THEME:** Cancer burden
- **UPDATE:** Prostate cancer drug now available at one-third cost in India

Key Highlights

- In India, the first generic version of Apalutamide, a medication used to treat prostate cancer, has been made available at one-third of the original price. The medication will soon be accessible across the nation and is used to treat both non-metastatic castration-resistant prostate cancer and metastatic castration-sensitive prostate cancer.
- According to Mumbai-based BDR Pharmaceuticals, the company that makes the generic version, the medicine known under the brand name Apatide will cost Rs 22,500 for a bottle of 60 pills and Rs 45,000 for 120 tablets.
- Apalutamide, in conjunction with anti-androgen treatment, significantly extended median metastasis-free life by two years, according to clinical data from phase 3 clinical studies.

International Developments



Policy Insight

■ **THEME:** Cancer burden

■ **UPDATE:** No amount of alcohol is safe, 200 million Europeans at risk of developing cancer: WHO

Key Highlights

- There is no safe level of alcohol that has no negative effects on health, according to the World Health Organization's (WHO) most recent evaluation. According to a statement by the international health organisation published in The Lancet Public Health, 200 million individuals in Europe are at risk of acquiring cancer that may be attributed to alcohol use.
- It was stated that the most recent data analysis showed that "light" and "moderate" alcohol consumption, defined as less than 1.5 litres of wine, less than 3.5 litres of beer, or less than 450 millilitres of spirits per week, is the cause of half of all alcohol-related cancers in the WHO European Region.
- The health organisation claimed that in order to establish a "safe" level of alcohol consumption, credible scientific proof would have to show that, at and below that level, drinking alcohol carries no danger of disease or harm. The statement goes on to say that there is no threshold at which alcohol's carcinogenic effects "turn on" and begin to appear in the human body, according to the research that is currently available.

Policy Insight

■ **THEME:** Cancer burden

■ **UPDATE:** Cancer deaths are dropping, but disparities persist in women, minority groups

Key Highlights

- Although cancer mortality rates are declining, significant inequities between women and minority groups are still present, according to a recent report by the American Cancer Society. The American Cancer Society stated this week that prostate cancer incidence is increasing for the first time in 20 years. Between 2014 and 2019, an average of 99,000 new cases of prostate cancer were diagnosed each year. The data is the result of a shift in screening standards that took place years ago.
- In general, women's cancer incidence rates didn't advance as quickly as men's did. According to the cancer organisation, lung cancer reduced in women approximately half as quickly as it did in males. Since 2006–2007, the incidence of lung cancer in males has decreased 2.6% yearly, but it has decreased 1.1% yearly in women.
- Melanoma and liver cancer incidence rates were also greater in women, while these malignancies' incidence rates declined in males under 50 and remained stable in older men. According to the Cancer Society, women also had greater incidences of endometrial and breast cancer.

Policy Insight

■ **THEME:** Cancer Awareness

■ **UPDATE:** New Mammography Study Reveals Mixed Awareness on Breast Cancer Risks

Key Highlights

- In a recent study that looked at 1,800 women who had had a mammogram and their beliefs of breast cancer risk, 65 percent said that being overweight or obese was a larger risk factor than breast density, and more than a quarter said they were unaware of any ways to lower their risk. The study, which was released earlier today in JAMA Network Open, was based in large part on a telephone survey of 1,858 women aged 40 to 76 who had a mammography during the previous two years, had no prior history of breast cancer, and were aware of breast density.
- Despite reported estimates that have noted a 1.2 to 4 times higher risk depending on the degree of breast density in comparison to a doubling of risk for those with a first-degree family history of breast cancer, 93% of survey respondents (1,706) indicated that a family history of breast cancer was a stronger risk factor than breast density for future breast cancer.

- The researchers noticed that many of people surveyed mentioned mammograms and self-breast exams as preventative methods when asked about steps to lower breast cancer risk. Exercise, dietary modifications, quitting smoking, and drinking less alcohol were all mentioned by interviewees; however, Gunn and colleagues highlighted that there was "little clarity regarding the direct influence on their breast cancer risk."
- The researchers went on to say that collaborations between radiology and primary care might help this patient population better understand preventative actions and additional imaging possibilities.

Pipeline News

■ **THEME:** Cancer treatment

■ **UPDATE:** Knife that 'smells tumours' can detect womb cancer within seconds

Key Highlights

■ In a discovery that might help thousands of healthy women receive the all-clear sooner, researchers have discovered that a cutting-edge surgical knife that "smells tumours" can quickly identify womb cancer.

■ The iKnife, a technology that is currently used to treat breast and brain malignancies, may now be used to properly detect the existence of endometrial cancer, according to researchers at Imperial College London.

The iKnife analyses the smoke that is released when the biopsy tissue is vaporised after it has been extracted from the womb in order to distinguish

■ between malignant and healthy tissue using electrical currents.

■ Its efficacy, according to the researchers, was demonstrated using biopsy tissue samples from 150 women suspected of having womb cancer, and the outcomes were compared with existing diagnostic techniques. The team intends to start a significant clinical trial that could result in it being widely used.

Pipeline News

- **THEME:** Cancer treatment
- **UPDATE:** AI predicts lung cancer risk six years into the future using single CT scan: study

Key Highlights

- In the United States and around the world, lung cancer is the leading cause of cancer-related mortality. For people aged 50 to 80 with a considerable smoking history or who are currently smoking, low-dose chest computed tomography (LDCT) is advised. It has been shown that using LDCT for lung cancer screening can reduce mortality from the disease by up to 24%. However, new approaches are required to screen and reliably forecast lung cancer risk across a larger population as incidence of lung cancer among non-smokers rise.
- Researchers at the Massachusetts Institute of Technology (MIT) and the Mass General Cancer Center worked together to build and test Sybil, an artificial intelligence tool. Sybil was created as part of the study. The risk of lung cancer for those with or without a substantial smoking history was correctly predicted by Sybil using studies of LDCT scans from patients in the U.S. and Taiwan. The Journal of Clinical Oncology publishes the findings.

- Barzilay and her associates used LDCTs from the National Lung Screening Trial to train the model, which they dubbed Sybil (NLST). More than 6,000 NLST scans that were not included in the training dataset, over 9,000 scans from Massachusetts General Hospital (MGH), and more than 12,000 scans from Chang Gung Memorial Hospital (CGMH) in Taiwan were used to verify the model. The other datasets only comprised scans of smokers, but the CGMH LDCTs also included scans of nonsmokers. The findings gave the researchers motivation to keep refining the model. The model's performance in patient populations that were underrepresented in the validation datasets, such as those of African-American and Hispanic/Latino heritage, as well as how it generalises to non-smokers and can be helpful to radiologists, are among the current priorities.

Pipeline News

- **THEME:** Cancer treatment
- **UPDATE:** A team of researchers has identified the molecular mechanism by which a key protein regulates LDL cholesterol

Key Highlights

- In a crucial step towards understanding the mechanisms involved in cardiovascular disease and certain cancers, a biochemical neuroendocrinology research unit at the Montreal Clinical Research Institute has succeeded in finding the molecular mechanism by which the protein PCSK9 degrades the receptor of low density lipoproteins, the richest cholesterol particles in the bloodstream.
- Low density lipoproteins, or LDL, can accumulate in the blood and lead to atherosclerosis and heart disease. The level of LDL and the cholesterol associated with it (LDLc), is directly modulated by the ability of LDL receptors (LDLR) to collect LDL from the bloodstream and internalize it, mainly into the cells of the liver. The surface LDLR drives LDL into the cell where it is captured, and the LDLR returns to the surface for another round of capture. PCSK9 is also present in the bloodstream where it associates with LDLR and promotes its degradation by liver cells, preventing it from returning to the surface to capture LDL. Some hypercholesterolemic patients have a "super PCSK9" that enhances the degradation of the LDLR.

- The structural analyses revealed the formation of a complex of three PCSK9 partner proteins, including the LDLR, CAP1 and HLA-C. A key protein in the immune system, HLA-C was found to play a critical role: it directs the entire complex to the lysosomes. HLA-C allows the recognition of the "self," and also stimulates the anti-tumor activity of T lymphocytes. PCSK9, for its part, helps protect against the growth of tumours and associated metastasis by increasing the level of HLA-C on the cell surface. Ultimately, the hope is that inhibitors can be developed that would prevent the interaction of PCSK9 and HLA-C and block the function of PCSK9 on LDLR and HLA-C. This breakthrough could be applied in clinical practice to treat cardiovascular pathologies as well various types of cancer and metastases in patients.

Pipeline News

- **THEME:** Cancer treatment
- **UPDATE:** Researchers develop artificial intelligence tool to predict risk of lung cancer

Key Highlights

- In the United States and around the world, lung cancer is the leading cause of cancer-related mortality. For people aged 50 to 80 with a considerable smoking history or who are currently smoking, low-dose chest computed tomography (LDCT) is advised. It has been shown that using LDCT for lung cancer screening can reduce mortality from the disease by up to 24%. However, new approaches are required to screen and reliably forecast lung cancer risk across a larger population as incidence of lung cancer among non-smokers rise.
- Researchers at the Massachusetts Institute of Technology (MIT) and the Mass General Cancer Center worked together to build and test Sybil, an artificial intelligence tool. Sybil was created as part of the study. The risk of lung cancer for those with or without a substantial smoking history was correctly predicted by Sybil using studies of LDCT scans from patients in the U.S. and Taiwan. The Journal of Clinical Oncology publishes the findings.

Pipeline News

- **THEME:** Cancer treatment
- **UPDATE:** AI Model Developed At Massachusetts Institute Of Technology To Detect Future Lung Cancer Risk

Key Highlights

- The majority of lung cancer patients still succumb to the disease, despite the recent spike in innovative medicines developed to treat the condition. The majority of people are presently checked for lung cancer using low-dose computed tomography (LDCT) scans of the lung in an effort to detect the disease when it is still treatable surgically. By evaluating the LDCT image data without the help of a radiologist, Sybil advances the screening process by estimating the likelihood that a patient would get lung cancer in the following six years.
- Fintelmann and his colleagues labelled hundreds of CT scans with apparent malignant tumours that would be used to train Sybil before testing the model on CT scans without obvious symptoms of cancer in order to guarantee that Sybil would be able to appropriately predict cancer risk.

Pipeline News

- **THEME:** Cancer treatment
- **UPDATE:** Researchers have identified a previously unknown signaling pathway cells use to protect the DNA while it is being copied.

Key Highlights

- The genome, a cell's complete set of DNA is most vulnerable while it is being duplicated before a cell divides. Cancer cells constantly are dividing, so their genomes are constantly in jeopardy. Researchers at Washington University School of Medicine in St. Louis have identified a previously unknown signaling pathway cells use to protect the DNA while it is being copied. The study suggests that targeting this pathway potentially could boost the potency of cancer therapeutics.
 - This newest study describes the discovery of DNA fragments as the warning signal that sets off the whole genome-protection response. Lung, ovarian and breast cancer are intrinsically under replication stress. Other cancers are put under replication stress by chemotherapy drugs. This pathway protects cells from replication stress, so if we could block the pathway, it might improve patients' response to cancer therapies.
- Several of the proteins in this pathway also play a role in other critical biological processes, including immunity, metabolism and autophagy, the process by which cells break down their own unwanted materials. This can also be applied to auto-immune diseases once the relationship between this replication-stress response pathway and the innate immune response pathway is thoroughly understood.

Pharma and Medical device

■ **THEME:** Cancer treatment

■ **UPDATE:** AI tool for breast cancer can tell you if you need chemotherapy or not

Key Highlights

- Breast cancer patients would be able to save time and money if they had a simple instrument that could determine whether or not they needed treatment. With their most recent creation, a scientist of Indian descent living in the UK named Dr. Hemmel Amrania and his colleagues have made their life a little bit simpler. It is a quick screening device created to spare patients with breast cancer from needless treatment.
- The technologically assisted detection kit was created by a medical company called Digistain at London's Imperial College and Cancer Research Centre with input from over 1,500 oncologists and under the direction of pathologists. At the Charing Cross Hospital in London and the Nottingham University Hospital, it has undergone a successful trial. The Apollo group is evaluating it for widespread usage in India.

- The latest innovation employs mid-infrared imaging to map the nuclear-to-cytoplasmic chemical ratio (NCR), or the fractional concentration of nucleic acids, over an unstained biopsy segment. It enables the quantitative Digistain index (DI) score to be derived from an objective physical assessment of a tumour, which corresponds to the NCR.
- The instrument offers a reasonably priced test and has the ability to end the disparity in care procedures in the treatment of cancer all around the world.