



Panacea Medical Technologies

Area
Manufactures radiation therapy machines
Founder
GV SUBRAHMANYAM
Investor
New Enterprise Associates
Location
Bengaluru

GV Subramanyam,
Founder, Panacea Medical Technologies

'Our Machines do the Talking'

The \$10 billion radiotherapy and radiology space is dominated by just two companies in the world — Sweden's Elekta and Varian Medical Systems of the US. It is in this niche market that Bengaluru-based Panacea Medical Technologies is aiming to make a dent. Big ambitions maybe, but founder GV Subramanyam, or GVS as he is known to friends and associates, is modest, even apologetic, about his plans. He says his company wants to be the third one in this space.

Panacea, he says, is the only maker of medical equipment for radiotherapy in Asia. "We are a highly focussed company in radiation therapy, and this kind of focus gives us an edge," he says. The machine offers improved results in treating tumours at an affordable cost.

The 17-year old company has installed its machines in nearly 55 Indian hospitals since 2010, which has helped it clock a revenue of ₹28 crore. GVS concedes the numbers and his growth are humdrum. He blames a poor start for that.

It took Panacea almost a decade to find its feet and be recognised as a serious player. Those years were a struggle. Two of the co-founders left the firm.

"You spend time, money and still there is no income and results. They (co-founders) did not have patience and perseverance," he says.

The first product Panacea developed was a radiation device based on brachytherapy, an invasive radiation therapy for treating cancer. The product took two years to make but went out of the market four months after it was launched because the

radioactive isotopes which were designed for those machines were removed from medical use by regulators across the world.

GVS persevered with time and money, working on Bhabhatron, a device that not only offered precise targeted radiation therapy but also managed to make a case for peaceful use of atomic energy. While working on this product, he roped in Bhabha Atomic Research Centre (BARC) to collaborate in its manufacture. The product was launched three years later. But recognition poured in during the India's negotiation with the IAEA in 2008. "The IAEA donated our machine to Vietnam as a symbol of peaceful use of atom," says GVS.

Panacea had finally arrived, but it had taken nearly two decades. "When we started there was no acceptance of Indian technology, so we had to wait for that attitude to change, but we are glad that now our machines

do the talking for the technology," says GVS. Panacea has received investment from early stage PE player New Enterprise Associates; it is now looking for \$15 million as the next round of capital. GVS says he wants to capture 35% market share in the radiotherapy and radiology space. Owing to regulations related to nuclear energy, large parts of Europe and America are out of bounds for Panacea. So the company is targeting South East Asia and parts of east Africa. By 2021 GVS plans to take Panacea public and clock in ₹1,000 crore in revenues.

Panacea has received investment from early stage PE New Enterprise Associates

(From left) Guruswamy K, Nandakumar S and Puhazhendi K, co-founders of Perfint



services company, but there was more fun to be part of product creation."

Since 2008, Perfint has sold over 100 devices in various parts of the world. Around 10,000 surgeries have been performed using their device. With a growth rate of nearly 50%, the team hopes to be profitable by this financial year. But Nandakumar is not pleased with the revenue growth. He says cancer patients are largely treated by the public health care systems, given the high cost of cancer care, but the government's purchase systems, despite the potential for huge orders, are long and complex.

Despite these hiccups, Perfint aims to be one of the top five players in robotic based therapy.

The next step for Perfint is raise \$10-15 million. It will then go public.

FOUR INDIAN STARTUPS THAT ARE FIGHTING CANCER

A bunch of entrepreneurs are addressing unmet medical needs in cancer care, blurring the lines between business and social impact by harnessing sustainable models, writes Divya Rajagopal

Navya Network

Area
Online consultation platform for cancer patients
Founders
GITIKA SRIVASTAVA,
NARESH RAMARAJAN
Investor
Tata Trust
Location
Cambridge (Boston) and Mumbai

Gitika Srivastava, founder, Navya Network



For big pharma, a cure for cancer is still the holy grail but there has been some headway. In the past five years, drug companies have launched 70 drugs that treat 20 types of tumours. At least 500 companies are working to develop a molecule that might cure the disease, or at least prolong survival. The global market for cancer treatment shot up to nearly \$107 billion in 2015, according to consultancy IMS Health. Though these statistics presage a brighter future in the fight against cancer, most of the newer therapies or newer drugs in areas like immunotherapy have been limited to developed countries.

The new drugs and therapies are out of reach for most emerging economies like India. It is not hard to see why. Striking a balance between the affordability of life saving cancer medications and rewards for research is complicated. Cancer research has set off a raging debate between entrepreneurs with a

social mission and investors who sense ripe business potential.

India is one of the few countries afflicted by a sharp rise in cancer-related fatalities. Nearly 70% of the healthcare expenses are out of pocket — most patients lack insurance cover, shutting them from best treatment practices — and there is a severe shortage of trained oncologists and good hospitals.

Still, there is hope. A bunch of investors have invested in drug discovery companies. They have also stepped in to improve cancer healthcare delivery. Their companies might not be working on life saving medications, but they are trying to fill the gaps in every step of the healthcare delivery. From using robotics for treating tumours to enabling patients to access consultations from top oncologists in the comforts of their homes, these startups in India are doing their bit in the fight against cancer. These are their stories.

Divya.Rajagopal@timesgroup.com

The Holy Grail in Medicine

70 new cancer treatments launched in last five years

Targets 20 types of tumours

500 companies have molecules that target cancer

Approval time of oncology drugs in US is coming down

Immunotherapy drugs, which use the body's immunity to fight cancer cells, are seen as a future treatment paradigm

*Source: Global Oncology Trend Report: IMS, American Society of Clinical Oncology

The Glitches

Most new cancer therapies

6 launched only in developed countries

In non-US countries, the cost of treatment has jumped 50% to

\$107 b was the total cost of cancer treatment in 2015, up from \$84 billion in 2010

\$13 bn

Cancer drugs most expensive in the US, cheapest in India and South Africa

But also least unaffordable in India and China

Debate on cost vs benefit still rages as doctors question survival benefits of some new drugs



'We Were Warned Nobody Would Pay Over Internet'

In 2014, venture capital investor Gitika Srivastava learned that a close relative was diagnosed with cancer at her hometown in Jamshedpur. It was a particularly harrowing time for her family. There was a deluge of advice, but to the hundreds of questions in their mind — should they start chemotherapy, should they fly down to Mumbai to get direct access to the best oncologists, was it the right time for surgery — no answers were coming.

Srivastava was certain thousands of families in India shared her family's dilemma. She soon began work along with her college friend from Harvard Dr Naresh Ramarajan to offer a solution. That's how Navya Network, an online platform for cancer patients and their families that provides consultations with leading oncologists from Tata Medical Centre (TMC) for a nominal fee, took shape.

"When we started Navya, we were warned that nobody would be willing to pay for consultations over the internet. We were apprehensive too but we were proved wrong," says Srivastava, 41, a serial entrepreneur who shuttles between Boston and Mumbai.

Six lakh people are diagnosed with cancer every year, but they have only 1,500 cancer specialists to go to, according to data from TMC. Adding to the healthcare and treatment costs are ancillary costs, including travel to healthcare centres.

Navya, launched in 2015, was built, and proven in clinical trials, to be able to make similar decisions as expert oncologists. Now, it runs as a service to empower cancer patients by relying on evidence and experience of the system as well as the expertise of global expert

oncologists at institutions such as Tata Memorial Centre. Navya uses clinical data to zero in on the exact treatment to patients so that they can cut down on wasteful trips to hospitals.

At ₹5,000 per consultation, Srivastava says patients and their families can get the same consultation which they receive if they visited the hospital. Within a year of launch, Navya has offered consultancy to nearly 6,000 patients through TMC. The number is modest, concedes Srivastava, but she is glad that the service is being looked at seriously.

The next goal is to bring down the cost of consultation, which is possi-

ble by increasing the number of people using this platform not only in India but also from neighbouring countries. Gitika is hesitant to talk about the venture in purely commercial terms, but she is also pragmatic that for a

venture to make a difference it needs to be sustainable. "Anything that wants to make an impact can happen only through grant funding, she says.

Srivastava is well connected in the VC circle of Boston, which has emerged as a hotspot for biotech companies. Ergo, fundraising is not an issue. The money is required primarily for marketing and outreach programs. The next step for Navya is to expand services, currently limited to breast cancer, to other forms of cancer. Navya aims to become the first source of consultations for patients who not only have to deal with emotional stress of cancer, but also have to battle the confusion about the right treatment.

'Nobody is Using Robotics the Way We Do'

More than a decade ago, three former colleagues of GE who quit their jobs in healthcare met in Chennai. As it happens on such occasions, the meeting was replete with nostalgia about the good old days. The discussion soon veered to the buzzing startup scene in India. Nandakumar S, Guruswamy K, and Puhazhendi K had moved to different paths in finance, technology and automobiles but were connected by one core idea — design and product development.

They decided to float a R&D servicing company in 2005, specifically in the area of medical diagnostics. The founders wanted their company to be the Infosys in healthcare technology. Perfint started as an engineering and advisory firm, helping companies make surgical machines.

But when the first seed funding came through by Accel Partners, Perfint decided to make machines themselves on the advice of the investor. The outcome was India's first robotic navigation solution for treating painful tumour surgeries.

"Nobody is really using robotics the way we do for guiding therapy," says Nandakumar S. "Patient specific treatment plan will be, in a way, a part of personalised healthcare in the future", he explains.

Perfint's robotic device — branded as Maxio — creates a patient specific treatment plan and then guides the physician to precisely place multiple needles during complex, minimally invasive interventional treatment of multiple tumours. The device guides physicians minimise residual tumour and recurrence while minimising needle manipulations, pain, radiation exposure and procedure time.

Puhazhendi says the three co-founders were part of various teams that had developed products for GE for the Indian and the global markets. "So that gave us the confidence to create products under the new company. We could have remained a product

services company, but there was more fun to be part of product creation."

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Perfint Healthcare

Area
Robotic device that detects and removes cancerous tumours

Founders
NANDAKUMAR S,
GURUSWAMY K AND
PUHAZHENDI K

Investors
Accel, Innoven, IDG, Norwest Venture Partners

Location
Chennai

'We Want to Cut Costs Further'



UE Lifesciences

Area
Breast cancer screening device

Founders
MIHIR SHAH,
MATTHEW CAMPISI

Investors
Manipal Hospitals,
Unitus Seed Fund,
Arian Capital

Location
Mumbai, Philadelphia

In 2006, Mihir Shah, a computer engineer by training who was working on various ideas on non-invasive medical technologies in Philadelphia, decided to tackle the growing number of cancer deaths among Indian patients. They zeroed in on breast cancer; one of Shah's close relatives was diagnosed with the disease. "When it happened I couldn't help asking the larger questions about cancer and the survival rate. That's when I realised there are two worlds when it comes to treating the disease," says Shah. "The developed world has access to early detection, better treatment and hence the outcomes were fantastic, unlike the low and middle income countries like India where the survival rate was poor because of lack of early detection."

Indeed, nearly 40,000 women in the US are diagnosed with breast cancer every year, but that number is shrink-

ing. In India, the opposite is the case, with half of the women dying under the age of 50. "We are losing far younger women to cancer," says Shah.

Shah and Matthew Campisi, a polytechnic professor, set up UE Lifesciences in 2009. They developed

iBreastExam, a non-invasive hand-held device that is used for early detection of breast cancer. The palm-sized device works by identifying minute differences in tissue elasticity between hard and stiff

breast cancer tumours versus normal, benign breast tissues.

The existing infrastructure around detection is built around mammography, a single purpose system which is expensive, sometimes painful and needs to be operated by a specialist. It

creates a huge barrier to access, especially in a country like India, according to Shah. He says the accuracy of mammography detecting a tumour among young women is also only 50%. With this problem in mind, UE wanted to develop a device that was portable, inexpensive and could be operated by non-medical health workers. So when the team was looking for a technology to develop the device, they found researchers at Philadelphia based Drexel University had invented a sensor technology that could detect lesions or tumours in breast tissues. Shah and Campisi scrambled to get hold of the licence. They beat healthcare giants such as J&J and Medtronic to win the licence.

The next hurdle was funding. "We had no capital, and tech development of a medical device is too expensive because there is so much regulation," says Shah. But "the universe conspired to make my idea become a reality", he says quoting a line from the bestseller *The Alchemist*.

The Pennsylvania State health department opened a grant for ideas based on cancer detection. iBreastExam received a grant of \$500,000. This was in 2010. It took the duo nearly four years to bring the product to the commercial stage. Along the way, the idea attracted grants and investors like angel investment firm Unitus Seed Fund and Ranjan Pai of Manipal Institute, who have committed funding worth \$5 million. Since the launch of the device in India last year, Shah and his team have screened 10,000 women. Their target is a lakh by the end of this year. The cost per screening is ₹500-1,000 in private clinics and ₹80-150 for governments.

Shah is betting on state health departments and corporates to drive revenue. "We want to cut the cost further," he says. "We want to bring this to \$1, which would mean that even if we screen a million women we can make our money."