The Road Less Travelled

In the rather inaccessible and turbulent northeast of India, Babina Diagnostics opted for the high-end Siemens StreamLAB Analytical Workcell. With more than one million laboratory tests performed each year, this investment is helping to increase workflow and patient satisfaction.

Text: Archis Mohan  Photos: Atul Looke
K. Lungrei Ekhrol, 60, a farmer, sits watching television in the spacious hall of Babina Diagnostics in Imphal, the capital of Manipur, a state in northeastern India the size of Slovakia. It’s nine in the morning but the hall is already full. Like Ekhrol, all patients are awaiting their turn to have their blood drawn for various clinical diagnostic tests.

Most of the patients started from their homes in the rural countryside at the crack of dawn. They walked several kilometers to reach the nearest paved road before they boarded a bus to get to this sleek four-storey building that houses Babina Diagnostics.

Ekhrol says he would need to return home before sundown. The good news is that everyone in the hall can expect their blood reports by lunchtime. It will leave him, says Ekhrol, ample time to visit his doctor and share the report, do some shopping, and still manage to return home before dusk.

The reason for Ekhrol’s calm confidence, although he is quite unaware of it, sits some meters above his head. At the center of a similarly-sized hall on the third floor of the building sits a gleaming Siemens StreamLAB™ Analytical Workcell, the only one in India.

“StreamLAB is the pride of this laboratory,” says Dr. Th. Dhabali Singh, the founder and Managing Director of Babina Diagnostics. Babina acquired the StreamLAB solution just over two years ago. It is an investment that Singh says he has never regretted.

StreamLAB is an intuitive automation solution that consolidates all tasks in a single workstation that helps streamline workflow. It is fully-automated,...
loads and unloads the test tubes from one single location, accommodates different tube types, has an efficient tube sharing system and accelerated turnaround times, offers extensive immunoassay menu options, and is compact in size. Its small footprint, and productivity equalling systems twice its size, convinced Singh to include the StreamLAB solution in his armory of diagnostic instruments.

Betting Big on Automation

Singh says he always had a burning ambition to do something for his homeland. He studied at a government school, walking several kilometers carrying his own gunny bag, used for sitting on the ground as the classes took place out in the open during winter season. He says it was his father who, despite being a small trader, motivated all his children to study. “He realized the importance of education and loved the medical profession. He kept pushing me to study medicine,” says Singh.

To the surprise of most of his friends and relatives, the future entrepreneur returned home to Imphal after his medical studies in faraway Chandigarh. A stint at a hospital in Imphal made him realize that Manipur didn’t have the facilities to do even the most basic
of diagnostic tests. Financial assistance from his father-in-law and help from friends, including a microscope rented at INR 175 (US$ 3), helped him start the laboratory in November of 1983. It did well and by 1994 he quit his job as an associate professor in the local government-run medical college. Singh is proud of the fact that he came back to his homeland when his contemporaries were busy making a beeline for the UK and the USA.

With time, Singh realized the need for an automated solution that could reduce turnaround times significantly and be error-free. He had set his heart on acquiring the StreamLAB solution for Babina Diagnostics from the time it was launched. “We had been looking for a complete automation solution for Babina Diagnostics for some time, especially clinical chemistry and immunoassay, of which our sample volumes are considerably high,” he says. Good after-sales service from Siemens convinced him further.

He says at times his children and relatives berate him for investing so much money in expensive diagnostic equipment in a place like Manipur, where purchasing power is low. “The investment in StreamLAB was significant, but I was confident it was viable,” says Singh.

And indeed: The StreamLAB solution has helped Babina Diagnostics carry out an impressive one million tests a year, most of which are processed between morning and early afternoon so that customers can reach their homes in distant places before the sun sets on the valley. Singh says the laboratory’s turnaround times have reduced by 30-35 percent with the introduction of the StreamLAB solution, and errors have been significantly reduced.

Currently, Babina Diagnostics commands a 70 percent share of the diagnostic market in Manipur, processing nearly 1,000 patient samples per day. Singh says approximately 70 percent of diagnostic tests are from walk-in patients. The rest of the samples reach Babina Diagnostics from its 100 collection centers across Manipur and from major cities across the northeast – such as Agartala in Tripura, Silchar and Guwahati in Assam, and Dimapur and Kohima in Nagaland. Of late, a couple of dozen samples come daily from the border towns of Myanmar, which is 117 kilometers from Imphal.

Minimizing Errors With Automation

Singh named Babina Diagnostics after his daughter, Babina. His daughter, who is also a doctor, helps him run the laboratory. She says mistakes occur primarily due to human error and automation is the only solution for minimizing them.
Healthcare in India

With the advent of the StreamLAB solution, Babina Diagnostics’ operations have significantly reduced errors.

The entire process from collecting blood samples to issuing test reports requires minimal human intervention at Babina Diagnostics. The tubes with blood samples collected from the patients on the first floor are barcoded. Bundles of these barcoded tubes are then put into plastic bottles that are pushed into an automated pneumatic sample delivery system that reaches the third floor. There, the tube bundles are brought out of the bottles and put onto the StreamLAB track.

Singh says the StreamLAB solution can accommodate different kinds of tubes that may come from the collection

Setting an Example

India’s northeastern region is both relatively inaccessible and underdeveloped. Good healthcare services are mostly unavailable. Babina Diagnostics is an exception. For the last 30 years, it has made quality healthcare services accessible to the people of Manipur. It turned to automation to handle its huge volume of samples. The StreamLAB Automation Solution has helped reduce turnaround times, increase employee efficiency, and improve physician and patient satisfaction.

At the StreamLAB track: Only minimal staff is required to process the 1,000 tests per day.
Laboratory Diagnostics

centers, does centrifugation to separate plasma or serum from other components of blood like leucocytes for better test results, reads the barcodes to conduct the prescribed tests, and updates the test results in the master server.

The results are then sent by email or the printout is given to the patient waiting in the ground floor hall. The entire procedure doesn’t take more than three to four hours. Patients that walked into the laboratory at 9 a.m. can collect their test report by 1 p.m. There are also times when the laboratory does emergency tests for samples from collection centers and results are communicated immediately, either via fax, the Internet, or by phone.

Babina Diagnostics conducts routine skill development training sessions for its technicians. The doctor says maintenance is the key to ensuring reliability and efficiency of the lab automation systems. “We have our own quality policy in place that takes care of the maintenance,” he says.

Some of the most common medical problems in northeastern India are endocrine disorders, autoimmune disorders, diabetes, infectious diseases, conditions like HIV and hepatitis, and

“Babina Diagnostics changed the market scenario in the region, benefitting both doctors and patients.”

Dr. Th. Dhabali Singh, founder and owner of Babina Diagnostics, Imphal, India
The barcoded vials are put into plastic bottles on the ground floor and then pushed into an automated pneumatic sample delivery system that reaches the lab automation on the third floor.

cancer. These are also the most commonly performed tests at Babina Diagnostics to detect and diagnose these diseases.

**Braving the Odds**

The diagnostics market in Manipur is relatively small compared with metropolitan cities in other parts of India. Manipur with a geographical area of 22,347 square kilometers is one of the smaller states in India and, with 2.7 million inhabitants, also one of its least populous. “But most physicians and people in the region trust Babina Diagnostics. The sample load has been increasing by the day,” says Singh.

Babina Diagnostics ushered in qualitative changes in healthcare in Manipur, which lacked a diagnostic culture. “In time, physicians and patients began to realize the importance of correct diagnosis and accurate test reports,” says Singh. Earlier, people from Manipur sent patient samples to laboratories in Kolkata and Delhi, which are 1,500 and over 2,000 kilometers from Imphal, respectively. “We know the importance of timely diagnosis in the treatment of a disease. Babina Diagnostics changed the market scenario, benefitting both doctors and patients,” says Singh.

Singh says his wide network of collection centers and joint venture units have made health services more accessible. Babina Diagnostics is the preeminent diagnostic centre in the region. It was also the first pathological laboratory run by a pathologist in Manipur. “Being a pathologist myself, I was aware of the needs of the treating physicians and the people. It has always been my dream to run a diagnostic laboratory of my own. Fortunately, all my instincts and gambles proved right. There were financial risks involved, but I was confident they would pay off,” says Singh.

“The law-and-order situation, the frequent blockades on the highways, the geographical terrain, and the natural calamities such as landslides, as well as the erratic power supply, are problems that we have to encounter as entrepreneurs,” he says. Poor power
supply has meant the laboratory has to rely on diesel generators for power, which is expensive. Blockades of highways lead to total stoppage of samples coming from outside Manipur.

Despite these problems, Singh is optimistic about the future. Manipur’s connectivity with the rest of the country and the larger southeastern region of Asia is set to become better with Imphal expected to have a rail link with the rest of India by 2016. There are also plans for an international airport.

The doctor says Imphal could become the center of medical tourism not only for people from other northeastern states, but also from neighboring Myanmar. Babina Diagnostics already has customers from Myanmar, with two of its collection centers situated in the bordertown of Moreh. In collaboration with pharmaceutical companies, Babina Diagnostics conducts free health camps on a regular basis in Moreh and inside Myanmar.

The investments in instruments and automation have not caused Singh to increase the cost of the tests. Babina Diagnostics has rates that are less expensive than in cities. Singh plans to promote a multispecialty or cancer hospital in Imphal in the future and even a medical college to improve the doctor-patient ratio, which is currently at one doctor for 1,660 patients.

“The potential is huge. I would like to see many more hospitals and diagnostic centers offering premium services at affordable rates," says Singh. Despite the challenges, Singh is unwavering in his commitment to “give the best to the people of Manipur and the northeast region.”

Archis Mohan is a New Delhi-based freelance journalist. He writes on a range of issues for both Indian and foreign print and television media outlets, including Hindustan Times, The Telegraph, NDTV and Times Now.

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