COMPANY AND PRODUCT SUMMARY

Elastic Care® is a highly cost-effective and secure platform for medical-grade Remote Patient Monitoring and Telemedicine. Medical professionals can use it to easily monitor, collect and analyze critical patient vital signs, in real-time or on-demand, any time of the day, regardless of patient or physician location. Multiple, wireless-enabled medical devices stream encrypted data to our secure cloud. High-efficiency predictive algorithms, filters and machine learning techniques clean and analyze the data. The system automatically generates alerts, histories, trends and predictions. It uses AI methods to analyse information from different sources (sensor fusion) to support decision making and aid diagnostics.

Patient-physician-provider video consultation and collaboration assist in diagnoses. This also enables patients to seek medical advice, counselling and support 24 hours a day. Medical information is quickly integrated into EMRs, EHRs and billing systems.

Elastic Care has also developed LifePath®, a novel, wearable, wireless medical device which continuously and accurately tracks over 20 different medical parameters. This includes full, 12-lead ECG, heart rate, HRV and other cardiac measures; several respiratory parameters; temperature; posture and activities and fall detection. This small (40mm x 40mm x 25mm), highly portable, unit replaces instruments costing over $35,000. Elastic Care is working on other appliances: one to track FeNO (Fractional Exhaled Nitric Oxide) to detect COPD exacerbations and another, an impedance-based device, for cardiography and assessment of thoracic fluid level. This is vital for patients suffering from congestive heart failure.

Third party, FDA-approved, wireless diagnostic instruments can be rapidly added to the platform. Using these, we currently monitor blood pressure, blood glucose, ketones, cholesterol and blood oxygen. Devices for handheld sonography and various POC blood assays will be incorporated next year. The platform is customizable, highly cost-effective, scalable and extensible. It is, perhaps, the only telemedicine platform to obtain full, end-to-end regulatory approval from the FDA, Health Canada and CE.

Elastic Care is a division of the Pathway Group, a Canadian technology company which has been in business for 22 years. The Pathway Group is led by a group of seasoned entrepreneurs. It employs close to 200 staff in three continents and offers services across Canada and the US with a communications office in India.

USE CASE: HOSPITALS

Cardiology

Cardiovascular disease is the leading cause (26%) of death in India.

- Follow-up and monitoring of patients who are known to be at risk of cardiovascular diseases or for those who are recovering from surgery or other medical procedures is unavailable or inadequate. This leads to unwarranted complications, poor patient outcomes, high readmission rates and increased mortality.
- With Elastic Care, physicians and clinicians continuously monitor ambulatory ECG and other cardiac parameters to obtain valuable information on patient condition and/or recovery.
- Analyzing reliable cardiac data and combining them with other parameters (e.g. respiration, blood pressure) leads to improved diagnoses and better patient outcomes.

Pulmonology

Respiratory diseases make up 13% of India’s annual deaths.

- Early detection, adequate oxygenation and prompt intervention is vital to the health and survival of patients with respiratory illnesses such as COPD, pneumonia and sleep apnea.
- Elastic Care monitors a range of respiratory parameters, with more on the way, so that physicians can interpret trends and statistics to gain a deeper understanding of patients’ respiratory condition.
- Using patient-specific thresholds and changes in respiratory status, physicians can be alerted to impending respiratory distress or acute exacerbations early, and in real-time. Correlating this information with data from other lightweight, portable devices such as ECG and spirometry, physicians obtain a clearer and early picture of true status.

Diabetes/Endocrinology

India is the “diabetes capital” of the world and it faces a potentially overwhelming diabetes epidemic. Over 62 million individuals are currently diagnosed with diabetes. By 2030, this number is projected to reach 80 million.
- Given the seriousness of diabetic complications, early identification of comorbidities is essential. The Elastic Care platform allows easy and accurate tracking of patient status 24 hours a day. By using a low-cost, wireless glucometer, blood glucose levels, alerts and reminders are available to patient, caregiver and the attending physician. Other measured parameters provides clinicians with a more complete picture of how the patient is managing the disease.
THE ELASTIC CARE ADVANTAGE

✔ Complete, end-to-end service: The Elastic Care service includes everything a physician, hospital or nursing home needs for remote monitoring and telemedicine:

- An increasing range of FDA approved monitoring devices.
- A secure tablet or cell phone which functions as a transmission hub, medium for video and audio communications.
- A mobile app and web portal for text based alerts and access to reports and histories.
- Bluetooth range extenders.
- A 24 hour service help desk and
- A contact centre staffed by qualified medical technicians who respond to alerts and alarms and are available 24 hours a day.

✔ Very low cost: One primary wearable device tracks over 20 medical signal parameters. It saves over $35,000 in alternate medical device costs. Additional, third-party diagnostic devices can be rapidly added to the platform to track additional medical parameters.

✔ Accuracy: Top of the line hardware components and sensors, advanced signal processing techniques, machine learning and AI technologies and agile software development. All these, and more, ensure that medical grade accuracy and reliability is stringently and continuously maintained.

✔ Flexibility: Clinical workflows can be easily modified in the field using a wizard-driven process. Reports and views are entirely customisable.

✔ Reliability: The platform is fully fault tolerant. It uses multiple levels of redundancy, backups and disaster recovery ensure uptime. Our data centre where servers are located has multiple advanced certifications including Tier III, SOC 3 Type II, ISO 9001-2008, ISO 27018, HIPAA and PCI DSS.

✔ Safety and security: All data is encrypted in transmission and at rest. The physical devices, computing platform and system architecture will be reviewed by the FDA, Health Canada, and EC for conformity with regulatory standards and processes. Every component, in every device, is tested for ISO 60601 compliance and bio-compatibility. Manufacture is undertaken in ISO 13485 certified establishments.

✔ Usability and ease of use: Real-time access from mobile and desktop machines is available for all data and analyses - on demand, or on a push basis. No training is required to use the system. It is intuitive and easy to use and has been designed for the non-technical user. The small form factor device and novel, low profile harness provides increased and improved wearability and user compliance.

PHYSIOLOGICAL PARAMETERS MONITORED

CURRENT

Cardiac
One, four or full 12-lead ECG trace, heart rate and HR variability, QRS timing parameters.

Respiration
Respiration trace, respiration rate, tidal volume and TV variability, inspiration and expiration ratio.

Temperature
Skin temperature, time-based temperature trends.

Falls/movement
Fall detection, posture identification, activity level; step count, calories.

Blood oxygen
FDA-Approved Third Party Device
SpO2, SaO2, Arterial pulse trace.

Blood pressure
FDA-Approved Third Party Device

Blood chemistry
FDA-Approved Third Party Device
Blood glucose, cholesterol, ketones and hematocrit

PHASE TWO (2018-19)

Spirometer
FDA-Approved Third Party Device
COPD and asthma

Portable sonogram
FDA-Approved Third Party Device
Multiple conditions (cardiac, other)

FeNo (Fractional Exhaled Nitric Oxide)
COPD exacerbation

Impedance cardiography
Multiple cardiac pathologies

Thoracic fluid level (impedance based)
CHF (Congestive Heart Failure)

Advanced diagnostics and predictions
Using additional machine learning, AI, sensor fusion