

**PROJECT SUMMARY  
TIMPEL  
(BR-L1558)**

When this document was being prepared, Brazil had registered more than 1.6 million confirmed cases of coronavirus and over 64,000 deaths, making it the Latin American country most affected by the pandemic in terms of number of deaths in the region. COVID-19 pandemic is quickly spreading to the interior of the country, after making more than 40,000 deaths in capital cities. At the same time, capital cities are relaxing social distancing measures and beginning to reopen restaurants, shops and other nonessential businesses. It is possible that the number of COVID-19 cases in Brazil surpasses the United States' and that Brazil becomes the country worst hit by the virus.

In this context, health care systems (public and private) have struggled to answer the exponential increase of COVID-19 patients. The country lacks health care professional's personal protective equipment (PPE), ventilators and tomographs – among other healthcare services and goods. Ventilators have become the most important piece of equipment to save COVID-19 patients, alongside with tomographs.

The purpose of mechanical ventilation is to rest the respiratory muscles while providing adequate gas exchange in the lung. Ventilatory support is crucial to aid patients with respiratory distress, and indispensable for those in acute clinical situations. The COVID-19 pandemic has increased the demand for mechanical ventilators and ICU units worldwide.

Despite the clear benefits of mechanical ventilators, complications from its use are common and patients may die after the initiation of mechanical ventilation, even though their blood oxygen levels may have normalized. In the 50s, during the polio epidemic, investigators noted that mechanical ventilation could cause structural damage to the lung and increase mortality of patients under ventilation. Since then, more research has been done regarding the injuries that mechanical ventilation can cause in the lungs.<sup>1</sup> Mortality has been ascribed to multiple factors: too much pressure can compromise the lung tissue, causing potential ventilation induced lung injuries (such as barotrauma<sup>2</sup>, pneumothorax and hemodynamic instability<sup>3</sup>). Too low pressure can cause an oxygenation drop, atelectasis (lung collapse) and inflammatory response. Complications caused by mechanical ventilation is therefore a major health problem and now, more than ever, physicians need intelligent tools to help them in their clinical decision-making process and be able to choose individualized ventilation strategies for each patient.

TimpeL S/A ("TimpeL" or the "Company"), a Brazilian startup, has developed a bedside electrical impedance tomography (EIT) equipment – called ENLIGHT – that enables a non-invasive and non-radioactive real time lung monitoring, giving physicians and caregivers information on what is happening inside their patient's lung, enabling them to individualize ventilation decisions, evaluating the strategy for each patient. ENLIGHT (a) fosters informed decisions and individualized treatment, minimizing uncertainties, (b) guides the application of protective ventilation, simply and quickly, reducing complications and increasing the chances of survival and (c) gives early visibility of hidden situations saving time at critical moments.

This equipment therefore reduces the risks of lung injuries during mechanical ventilation, increases patient safety and the survival rate in Intensive Care Units (ICUs). It also reduces the need to move the patient to conduct x-rays in Radiology Units. This is especially important for COVID-19 patients who should be kept in isolation. Furthermore, being able to monitor lung performance in real time, helps doctors know the right timing for letting the patient out of ventilation, giving them a better treatment and making ventilators available for other patients that might need it.

---

<sup>1</sup> <https://www.nejm.org/doi/full/10.1056/nejmra1208707>

<sup>2</sup> Lung tissue damage caused by too much lung pressure

<sup>3</sup> Abnormal cardiac function

Due to growth in demand for ENLIGHT equipment the Company has the need to finance its current expansion. Part of this expansion is to export to other countries – including countries in LAC besides Brazil. The Company has great prospects to increase its revenues making it a safe bet for an IDB Lab's LIFESS senior loan operation.

We consider Timpel has a good fit with LIFESS' thesis and objectives given the following: 1) the product is directly linked to COVID-19. Their main clients are hospitals; 2) the Company has a good track record and robust and well-presented financials; 3) the Company is backed by a strong investor that will co-finance this operation; 4) the product has a direct impact in hospitals patients/client's health and well-being. Timpel's tomograph makes the treatment more comfortable and safer, saving patients' lives; 5) the Company has a well-known team with a good reputation in the healthcare market in Brazil; and 6) it was invested by a health specialized VC fund – FinHealth.