

Background

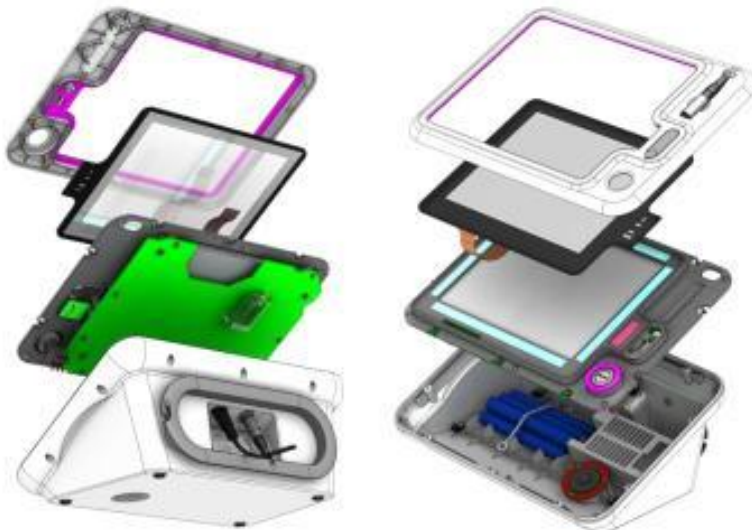
Dysphagia, the inability to swallow, is experienced by many stroke survivors. It has a significant impact on quality of life and affects mortality with a much increased risk of pneumonia. Many, but not all patients, recover the ability to swallow due to neuroplasticity which allows the patient to develop the ability to control swallowing with a different part of the brain. However there have been significant numbers of patients who do not recover this ability and the available treatment strategies were based on compensating for the issue rather than solving the underlying problem.

Dr Shaheen Hamdy at the University of Manchester discovered that electrical stimulation of the nerves in the Pharynx significantly improved patient's recovery of the ability to swallow. Based on this, Phagenesis identified a commercial opportunity for a device which could treat this common and chronic condition and for which there was no effective means of treatment.

Solution

With Phagenesis, Tactiq developed a treatment system consisting of a base station and consumable element. The base station comprises treatment electronics and a touch screen user interface. The single patient, multiple use consumable element consists of a feeding tube with stimulation electrodes and treatment record storage.

Tactiq were responsible for the electronics and software design ensuring that the device is safe, easy and attractive to use and complies with the regulatory requirements of a Class IIa medical device.



The base station controls the electrical stimulation being applied by the disposable. The level of stimulation is determined by the tolerance level of the patient. The user is helped to find this tolerance through steps provided in the user interface which Tactiq implemented.

Three treatments, 24 hours apart are required. Storing the patient and treatment details with the feeding tube means that once set up, all treatments can be performed easily even if a different base station is used. The communication to the disposable is encrypted providing security and ensuring that a genuine Phagenesis consumable is

used. Recording of the treatments performed and patient data in the consumable ensures that it cannot be reused on a different patient and the patient cannot be over treated.

Tactiq worked closely with Phagenesis to select the correct manufacturing partners and still continue to support and further develop the device.

Phagenesis received the Bionow Healthcare Project of the year award in 2012 for this product.