Anaesthesia delivery for low resource setting

Country of origin | China

Health problem addressed

Unsafe anaesthesia causes morbidity/mortality with the problem being more pronounced in developing countries. In developed markets, anaesthesia related mortality is approx. 11,700/yr. for a population of 1B and 138M surgeries. For developing nations, the anaesthesia related mortality is approx. 45,000/yr. for a population of 6B and 96.2 surgeries. A 6 times increase in population, but the number of surgeries is less by 40%. So there is still a large % of population with no access to hospitals with OTs.

Product description

The proposed anaesthesia machine is a compact, integrated, and intuitive anaesthesia delivery system. The machine provides general inhalation anaesthesia and ventilatory support for patients during surgery as well as monitoring and displaying various patient parameters. The anaesthesia machine is composed of the anaesthetic breathing system, anaesthetic gas transfer and receiving systems, anaesthetic vapour delivery devices, anaesthetic ventilator, and accessories. The machine is lightweight and compact for easy manoeuvrability. The anaesthesia machine also offers enhanced monitoring capabilities (SpO2 monitoring) and advance ventilation that includes WYSIWYG (What You Set Is What You Get) Tidal Volume setting

Developer's claims of products benefits

The offerings from the leading vendors are primarily targeted for use in areas where resources, both physical and economical, are not constrained. Also, they are targeted to address a broad range of health cases thus driving up the costs of the equipment & increasing the complexity of the equipment. Local players focus on cost reduction, more often than not, at the expense of quality, safety and reliability. In all these areas, this equipment outscores them

Suitability for low-resource settings

Infrastructure: compact frame designed for mobility throughout the hospital. Extended battery life of up to 360 minutes, which allows continued work, even during extended procedures in unstable power environments.

Training Effort: decreases training effort with its intuitive design, straightforward User Interface, and an in-depth clinical training package that helps new users quickly acclimate to the machine's advanced features

Regulatory status

The equipment is CE certified.

Future work and challenges

Field trials are taking place in each of the target country/region. Anticipated challenges are in terms of underdeveloped infrastructure and personnel with reduced skill levels. The strategy to overcome the latter challenge is to educate the end user thoroughly about the product via focused trainings - both in theory and practice. The former challenge will be addressed feeding the learnings from the field trials into the next iteration of the product. Apart from this, there will be focused effort to train the personnel in the target areas on safe surgery practices and how the equipment enables them to perform the same

Use and maintenance

User: Intended to be used by a physician or technician.

Training: The manufacturer's representative in the region where the equipment is planned to be used will provide the training. The manufacturer will provide all the equipment required. Time required is 2 days.

Maintenance: Calibration required at time of use, along with scheduled annual maintenance.

Environment of use

Setting: Designed for use in indoor rural or urban settings in primary, secondary or tertiary levels of healthcare facilities

Energy and Other Requirements: Runs off either batteries or continuous power supply of 100-120V. Requires proprietary software, which ensures reliable working of the Anesthesia machine. Key functionality includes display, monitoring, ventilation, leak tests, self-tests & diagnostics. There is no specific license fee associated with the software. Necessary software for proper functioning of the machine is provided with every machine.

Pipeline input range: 280 kPa to 600 kPa/41 psi to 87 psi

Product specifications

Weight (kg): 70

Dimensions: 1480mm x 900mm x 700mm

Consumables: Inhalation Agents, Delivery gases - O2, N2O

Retail price (USD): 10 000

Other features: The software, along with user manuals, is available in following languages:

English, French, Spanish, Portuguese, Turkish, Russian, and Vietnamese & Indonesian. Breathing system auto-clavable at 134 °C

Year of commercialization: 2012

Currently sold in: India, Vietnam, Philippines, Malaysia, Indonesia, Singapore, Algeria, Nigeria, Kenya, Morocco, Senegal, Tanzania, Togo, Uganda, Cote D'ivoire, Honduras, Paraguay, Lebanon, Pakistan, Bangladesh

Contact Prasad Rotti | Email prasad.rotti@ge.com | Telephone 919845285658- | Web http://tinyurl.com/o2zdmn4