Innovative Healthcare

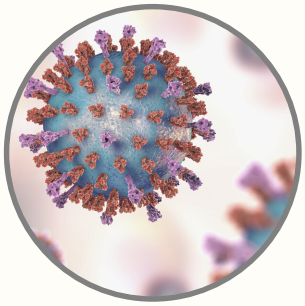
شركة رضاك الطبية

REDAK MEDICAL

Telemedicine Clinical Bag

Handheld Medical Diagnostic Devices of the 21st Century.

Introduction



With the escalating challenges imposed on the medical community by the novel Coronavirus (COVID-19), healthcare systems around the globe have been pushed to their limits. Medical institutions are currently facing the prospects of anxious patients reluctant to attend healthcare facilities due to fear of infection. In fact, statistics from all around the world have shown unprecedented numbers of appointment and elective surgery cancellations; all due to concern of contracting the coronavirus.

On the other end of the spectrum, demand for Telemedicine services has increased exponentially. Patients are enjoying the classic benefits of telemedicine services in terms of cost savings, convenience, increased access to the otherwise scarce specialist care, as well as the now precious reduction in risk of infection.

Redak Medical presents an innovative telemedicine clinical bag; aimed at boosting the global efforts in deploying telemedicine technology to stop the spread of COVID-19. The clinical bag is particularly targeted at the tele-diagnosis of patients at their place of residence to help limit their exposure to coronavirus infection.

Tele-diagnosis is a form of telemedicine concerned with the collection of raw patient data (samples, vital signs, etc.) for diagnosis by central automated systems or for distant manual processing. Tele-diagnosis has only been made possible through the innovative utilization of 21st century technologies in handheld medical equipment. We invite you to explore the product in more details in this brochure; in the hope we can help your institution deliver safer healthcare services to vulnerable patients and the wider community.

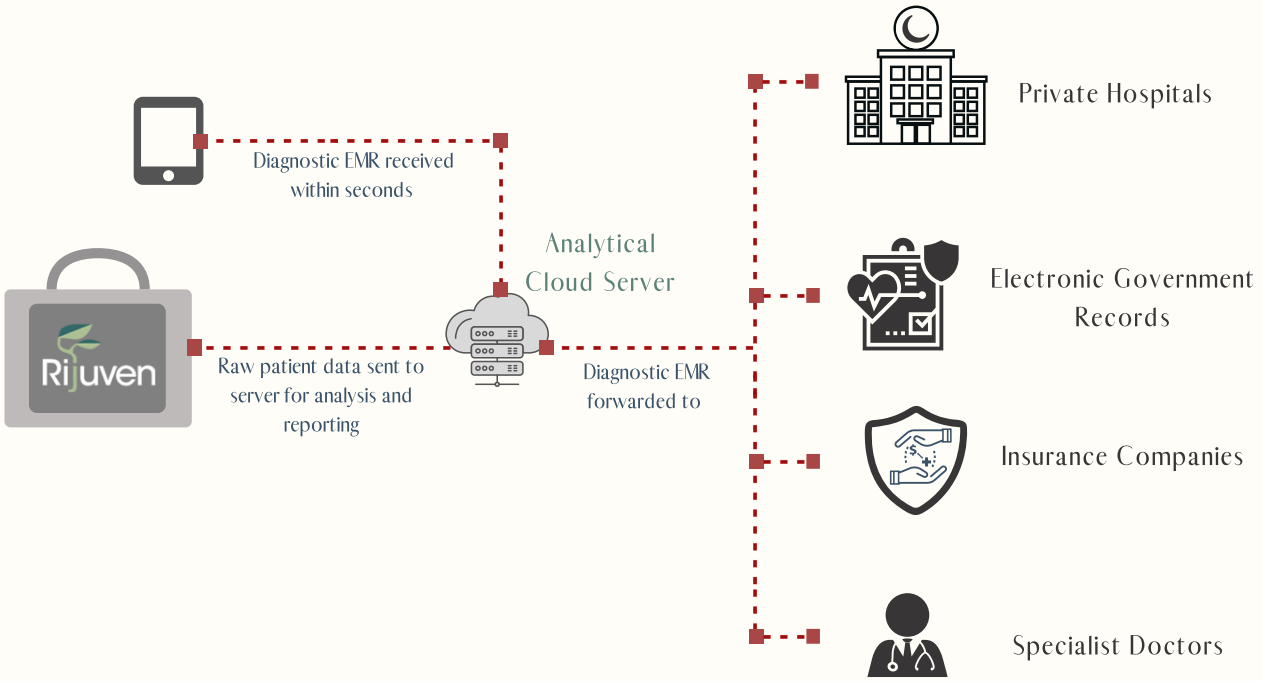
Product Information

Invented by Rijuven, the Clinic-in-a-Bag system offers a modern tele-diagnosis platform utilizing advanced medical technologies of the 21st century. The bag consist of a number of wireless and cellular-connected telemedicine devices that can collect diagnostic data at the patient site. It provides a comprehensive cloud-based examination platform that can collectively perform 118 tests, including:

- Spirometry, Lung Function
- Lipid Panel, Drug Toxicology, TSH, PSA, Blood Glucose, Urinalysis, Advanced Lab
- Auscultation, 3-Lead EKG, Heart Failure Analysis (SPI)
- Vascular, Thoracic and Abdominal Ultrasound
- Pulse Oximetry, Blood Pressure, Temperature, Digital Weight, Heart Rate, Breathing Rate
- Remote Consultation, HD Photo Visual Exam, Cloud EMR Reporting

Cloud Analysis and Reporting

The Clinic-in-a-Bag system utilizes a cloud-based analytical server to analyze the raw patient data collected at the site. The server is equipped with advanced algorithm and capabilities to produce results in a matter of seconds. Results are reported in standardised Electronic Medical Records (EMR) formats; however, clients can alter the reporting format to suit their purposes and data management needs. Additionally, reports can be automatically forwarded to third parties, including hospitals, insurance companies, treating physicians, and government health databases.



Specifications

While variations are possible with different versions of the Clinic-in-a-Bag system, specifications of the main devices are listed below:

CardioSleeve

ECG

- Leads ..... 3 Leads
- In Dynamic Range..... 3.7V Peak to Peak
- Recording Time ..... Min. 10s, Max. 30s
- ECG Amplification ..... 10x Gain

Circuitry

- Frequency Response..... 20-1000 Hz
- Sampling Frequency..... 2000 Hz
- Input Impedance..... >100 MOhm
- Differential Range.....+/-5 mV
- Data Resolution.....>12 bit

General

- Dimensions.....75x50x25 mm
- Weight.....50g
- ECG Material.....Silicon Nitride
- ECG Probe Size.....10x10mm
- Shelf Life.....Estimated 5 years

Portable Ultrasound

Transducer

- Type.....Convex
- Frequency..... 3.5MHz
- Element.....128
- Field of View..... 58.2°
- Max. Frame Rate..... 17

Imaging

- Depth..... 0-20cm
- Dynamic Range..... 30~96 dB
- Time Gain Compensator..... 4 area
- Focus..... Single
- Acoustic Power..... MI,TIB, TIC, TIS
- Technology..... Digital Beamforming

Measurement and Calculation

- Measurement..... Length, Ellipse
- Fetal Bio..... BPD, HC, FL, AC, CRL, EFW

Data Management

- Image Frame..... 150 Images (0.13MB)
- Cine Store..... 36sec (70MB)
- Image Format..... MPEG4, DICOM, JPEG

Portable Blood Pressure Monitor

Technical

- Measurement.....Oscillometric [Cuff]
- Measurement Range ..... 0-299 mmHg
- Pulse Range.....40-180 beats/min
- Accuracy..... ±3 mmHg/ ±5 beats/min
- Clinical Test..... ANSI / AAMI SP-10 1992

General

- Dimensions.....96x68x130 mm
- Weight.....250g
- Product Shelf Life..... 5 years
- Accessory Shelf Life..... 2 years [cuff]
- Operation.....10-40°C / 15-85 %RH
- Power supply..... 4x1.5V batteries
- No. of Tests..... 700 (with LR6 batteries)

Spirometer

Technical

- Parameters ..... FEV1, PEF
- Max. Volume.....10 L
- Flow Range..... ± 960 L/min
- Volume/Flow Accuracy..... ± 3%/± 5%
- Dynamic Resistance ..... <0.5cm H2O/L/s

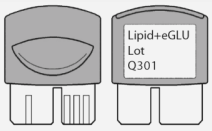
General

- Dimensions..... 109x49x21 mm
- Weight..... 60.7g

Portable Whole Blood Test System

Technical

- PTS Panels ..... color-coded MEMo Chips (Chemistry)
- Test Strips..... Reflectance, Electrochemical
- Result Time..... 1-2 mins
- Sensitivity..... Bright Light (Outdoor)
- Operating Temp..... 20–27° C



General

- Dimensions..... 81.3x152x38 mm
- Weight..... approx 156g

Pulse Oximeter

Technical

- Oxygen Saturation Range..... 35-100%
- Pulse Rate Range..... 25-250 bpm
- Precision..... ±2% (70-100%)/±2 bpm
- Peak Wavelength..... red light 660 nm ± 3
- Peak Wavelength..... infrared 905 nm ± 5
- Max. Optical Output..... 1.2 mW

Thermometer

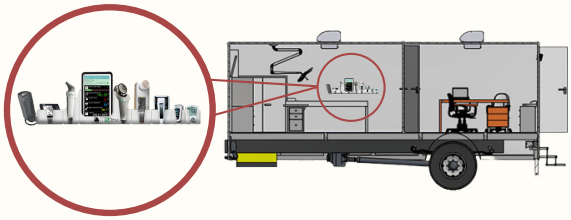
Technical

- Measurement..... Ear, Forehead
- Range ..... 20-42.2°C
- Precision..... ±0.2°C
- Operating Conditions..... 16-35°C/ <85 %RH
- Power Supply..... 1 lithium battery 3V
- No. of Tests..... approx 5000 (per battery)

Applications

With the excellent versatility of the product, clients of Redak Medical have adopted the clinic-in-a-bag system in different ways. The below information exemplify some of these uses:

Mobile Clinics



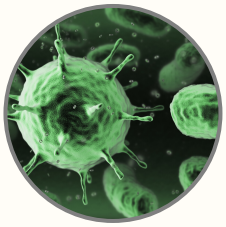
Equipping a mobile clinic with Rijuven's clinic-in-a-bag system is advantageous in many aspects. It expands the clinic diagnostic capabilities, streamline reporting and administrative duties, and provides public health benefits in terms of cancer screening and expert tele-consultation.

Doctors to Doors

For physicians who visit patients at their workplace or residence, the Rijuven clinical bag is an ideal solution. It allows physicians to seamlessly collect patient data for cloud analysis, seek a second opinion through tele-consultation, advice the patient based on reliable data, and confidently refer patients to suitable specialists.

Benefits

The benefits of using technology to enhance healthcare services are numerous; the list below provide a snapshot of some of the anticipated benefits of using the Clinic-in-a-Bag system:



- Reduction in Hospital-acquired Infections: the ability to diagnose and treat patients at their place of residence reduces the risk of infection. In fact, hospital-acquired infections are caused by viral, bacterial, and fungal pathogens; with the most common types being bloodstream infection (BSI), pneumonia (eg, ventilator-associated pneumonia [VAP]), urinary tract infection (UTI), and surgical site infection (SSI).

- Chronic Patients: improve the lives of chronic patients by delivering timely healthcare services, reduce vulnerability to infections, and reduce dependency on carers.
- Healthcare Access and Convenience: telemedicine healthcare has been proven to increase access to services for: daytime employees, regional and remote patients, as well as persons with limited mobility.

- Cost Savings: for patients (e.g. transportation, time, hospital fees, etc.) and for providers (e.g. administrative duties, shorter bed occupancy in wards, etc.).

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