

# HeRO®

AN EARLY WARNING PREDICTIVE TOOL FOR NEONATAL SEPSIS<sup>1,2</sup>



**Kiara MedTech** is committed to impacting lives by embracing effective healthcare technologies appropriate for the African continental setting.

**Medical Predictive Science Corporation (MPSC)** has developed a device to aid in clinical risk assessment and therapeutic decision-making.



## HeRO® (Heart Rate Observation)

A device that analyses heart rate characteristics (HRC) and uses predictive algorithms to help detect infection-related deterioration 4 to 48 hrs before it is clinically apparent.<sup>1</sup>

HeRO® device provides continuous, non-invasive patient monitoring for detection of pre-clinical sepsis (and other infection-related conditions) in neonates, allowing earlier intervention and significantly improving outcomes.<sup>1</sup>

## What is HeRO®?²

**HeRO®** is a system that supplements your existing multi-parameter monitors. It does not replace clinical expertise.

**HeRO®** is non-invasive and works from the data already being collected by the existing physiological monitor, with no additional leads or patient contact required.

- **HeRO®** was invented through the collaboration of a Neonatologist and a Cardiologist.
- **HeRO® detects neonatal distress** caused by conditions such as **sepsis, urinary tract infection** and **necrotising enterocolitis (NEC), before overt clinical signs appear.**
- **HeRO® anticipates declines due to infection-related conditions** in neonates, specifically by detecting changes in **heart rate characteristics (HRC).**
- **HeRO®** produces a **numeric score** indicating the **likelihood of an infection within the next 24 hours.**
- A rising **HeRO® Score** often precedes clinical signs and symptoms by hours to days. In many cases, a rise or multiple rises of a **HeRO® Score** will occur from **4 to 48 hours prior** to the presentation of clinical symptoms.
- Life-threatening clinical events may be prevented due to early action prompted by the rising **HeRO® Score.**

*In the vulnerable neonate, timing of the detection of clinical variances, can be a matter of life or death. The real benefit of **HeRO®** is early detection and intervention, impacting both morbidity and mortality.*

## Features of HeRO®: ²

**HeRO®** is compatible with virtually all ICU physiological monitors.

The system provides an **hourly HeRO® score** taking in the last 12 hours of HRC data and a continuing **5-day trend** of the **HeRO® score.** ¹

**Incorporation of HeRO® in decision making** was shown to decrease mortality in pre-term infants by >20 % in a 3,000-patient clinical trial - the largest NICU study to date. ¹

Additionally:

**HeRO®** is compatible with existing hospital IT Infrastructure.

**HeRO®** data can be exported to electronic medical records.

**HeRO®** provides remote accessibility.

**HeRO®** includes a web server to allow for any networked computer to view the **HeRO® scores** with a compatible web browser.

### Network Security

Patient data stays within the hospital. **HeRO®** supports a multitude of anti-virus solutions.

### Remote Support

With a hospital provided secure VPN connection, remote support can be provided to address your concerns.

Reference:

1. Hicks J.F., Fairchild K. HeRO monitoring in the NICU: sepsis detection and beyond. Infant 2013; 9(6): 187-91.

2. Heart Rate Characteristics (HeRO), MPSC-SAM-1905 (R14.1). [www.heroscore.com/references.htm](http://www.heroscore.com/references.htm)

For more information on the complete **HeRO®** system, please contact: [info@kiarahealth.com](mailto:info@kiarahealth.com)



## HeRO products

All of the HeRO® products utilize the same proprietary algorithms to compute the clinically proven HeRO® Score. Our products include the **HeRO® Symphony** system, our premier product, which supports central monitoring, research data collection, remote access, and HL7 data export to your Electronic Medical Records (EMR). Our standalone, bedside solutions include a limited feature set in **HeRO® ES**, **HeRO® solo** or **HeRO® duet**.

### HeRO® Symphony

With **HeRO® Symphony**, MPSC continues to improve upon the capabilities of our foremost HeRO® System with new advancements and capabilities. **Symphony** includes HL7<sup>β</sup> data export for sending HeRO® Scores directly to your electronic medical record, new data acquisition methods for easier setup, and improved monitor connection cables. **Symphony** represents the highest level of capability that HeRO® offers.

HeRO® Symphony  
central monitor



### HeRO® solo and duet

- **Designed for the unit that wants the flexibility of a mobile solution in a bedside monitor.**
- **HeRO® solo** and **duet** provide HeRO® monitoring for one or two patients, respectively.
- **HeRO® solo** and **duet** can be installed by the hospital engineers.

<sup>β</sup> HL7 and its members provide a framework (and related standards) for the exchange, integration, sharing, and retrieval of electronic health information. These standards define how information is packaged and communicated from one party to another, setting the language, structure and data types required for seamless integration between systems. HL7 standards support clinical practice and the management, delivery, and evaluation of health services, and are recognized as the most commonly used in the world. The HeRO® solo and HeRO® duet products do not support electronic export to medical record systems. The HeRO® Symphony system does support HL7 export to electronic medical records systems. Introduction to HL7 Standards. <http://www.hl7.org/Implement/standards/index.cfm?ref=nav> (Accessed 13 April 2021).



HeRO Duet

HeRO Solo

### HeRO® ES

- **HeRO® ES** integrates into iPC equipped Philips monitors.
- The only current way to embed HeRO® directly onto the patient monitor.
- Can be upgraded to **Symphony** to utilize both HeRO® central monitoring and HeRO® in the physiological monitor.

HeRO ES shown on a Phillips MX800



Feature	HeRO <sup>®</sup> Symphony	HeRO <sup>®</sup> solo / duet	HeRO <sup>®</sup> ES
Proprietary HeRO algorithm	✓	✓	✓
Proven HeRO Scores	✓	✓	✓
Five-day HeRO Score trend	✓	✓	✓
Hourly update of HeRO Score	✓	✓	✓
Patients/Beds Covered	All beds in unit	1 (solo), 2 (duet)	1
Storage of HeRO data	One year	Current patient only	Current patient only
Central HeRO monitors	✓	✗	✗
Networked to the hospital	✓	✗	✗
Supports patient transfer	✓	✗	✗
Export data to medical record	✓	✗	✗
Patient reports	✓	✗	✗
Remote access to data	✓	✗	✗
Remote technical support	✓	✗	✗
Software updates	✓	✗	By hospital engineers
Installation project scope		Self-install	
Standalone	✗	✓	✓
Bedside monitor	✗	✓	✓ Integrated into Philips MX monitor