Clinical Evaluation of the CM Device During Apheresis Blood Donation

NCT05012462

28-FEB-2022

CLINICAL PROTOCOL

TITLE	Clinical Evaluation of the CM Device During Apheresis Blood Donation
PROTOCOL	ZMS-1500-2021-Apheresis
SPONSOR	Zynex Monitoring Solutions (ZMS) 9555 Maroon Circle Englewood, CO 80112
PROTOCOL VERSION	2.0
DOCUMENT REVIEW & APPROVAL	

Sponsor Representative: [redacted]

Signature Date

Sponsor Representative: [redacted]

Signature Date

[redacted]

PROTOCOL SIGNATURE PAGE

TITLE	Clinical Evaluation of the CM Device During Apheresis Blood Donation
PROTOCOL	ZMS-1500-2021-Apheresis
SPONSOR	Zynex Monitoring Solutions (ZMS) 9655 Maroon Circle Englewood, CO 80112
PROTOCOL VERSION	2.0

[redacted]

[redacted]

Principal Investigator (PI): _____

PI Printed Name

_____

PI Signature

_____

Date (DD-MMM-YYYY)

[redacted]

PROTOCOL AMENDMENT HISTORY

Version Number	Description of Change(s)	Reason for Change
1.0	Initial protocol; no changes	N/A
2.0	Revise protocol to include the CM-1600	Collect study data using the latest CM device that wasn't previously available

[This space is intentionally left blank]

TABLE OF CONTENTS

FIGURES AND TABLES

1 INTRODUCTION

Intraoperative and postoperative hemorrhage incidence can vary depending on the type of surgery and can lead to severe clinical complications ranging from mild anemia to fatal hemorrhagic shock. [redacted]

[redacted]

Current methods for acutely monitoring blood volume and blood loss include monitoring of vital signs (such as heart rate, blood pressure respirations, and oxygen saturation), invasive central venous (right heart central venous pressure measurement and swan ganz pulmonary capillary wedge pressure measurements) and arterial catheters designed to monitor hemodynamic status centrally. [redacted]

The Zynex Cardiac Monitor (CM) Device, uses a relative patient standard approach by non-invasively and simultaneously monitoring [redacted] physiological parameters, including bioelectrical impedance, ECG amplitude, photoplethysmogram (PPG) amplitude, heart rate, and skin temperature. [redacted]

There are two (2) models of the CM Device, Model 1500 (CM-1500) and 1600 (CM-1600) [redacted]

1.1 CLINICAL RATIONALE

The proposed clinical study is designed to confirm that the Zynex non-invasive monitoring device can track blood volume changes in healthy individuals consented to undergo an apheresis blood donation. [redacted] Additional research is required to validate the sensitivity and specificity of the CM Device to tracking blood loss and blood volume changes during an apheresis blood donation as well as establish the changes in the RI with loss of different blood components.

2 INVESTIGATIONAL PLAN

2.1 OBJECTIVES

The primary objective of the study is to characterize changes in the CM Device Relative Index during an apheresis procedure.

The secondary objectives of the study are to characterize the following:

- Changes in blood pressure relative to changes in the Relative Index
- Relative Index changes when using Trima or Amicus apheresis devices
- CM Device's ability to detect different blood components and fluid

2.2 STUDY DURATION

Enrollment in the study is expected to take up to 12 months, and data analysis may take up to an additional 2 months to complete.

2.3 STUDY DESIGN

The study is a prospective, single-arm, non-randomized, non-blinded, non-controlled, non-significant risk, single center study enrolling up to 200 healthy adult subjects consented to undergo an apheresis donation procedure. [redacted]

3 STUDY DEVICE

3.1 CARDIAC MONITOR, MODEL 1500 (CM-1500)

The CM-1500 is a U.S. Food and Drug Administration (FDA) cleared non-invasive monitoring device that simultaneously monitors five (5) parameters of a patient's body. Parameters include bioelectrical impedance, heart rate, ECG amplitude, PPG amplitude, and skin temperature. A combination of these parameters is represented by a single number known as the Relative Index value. This value is indicative of relative changes in fluid volume. The Relative Index is a unique functionality of the Zynex Cardiac Monitoring Device.

3.1.1 DEVICE DESIGN AND COMPONENTS

The CM-1500 is an all-inclusive device that includes the following components: display monitor (1), power supply (1), trunk cable (1), wrist cuff with attached PPG finger glove (1), wrist strap (1), and electrode array set (2). The wrist cuff with attached PPG finger glove may be cleaned and reused. The wrist strap is single-subject use. The electrode array sets are single-use, single-subject.

3.1.2 PRINCIPLES OF OPERATION

The CM-1500 measures bioelectrical impedance (ohms), heart rate (BPM), ECG amplitude, PPG amplitude, and skin temperature (°C or °F). [redacted]

3.1.3 INDICATIONS FOR USE

Per the device's FDA clearance, the CM-1500 is indicated for monitoring bioelectrical impedance, heart rate, ECG amplitude, and PPG amplitude and their relative changes, indicative of relative changes in fluid volume in adult patients.

3.1.4 INTENDED USE

Per the device's FDA clearance, the CM-1500 is intended to be used in professional medical environments, i.e., hospitals, clinics, and research institutions. The CM-1500 is a standalone device intended for desktop use, where device operation is to be performed as uninterrupted patient monitoring. The CM-1500 shall only be used by a qualified device operator. The operator shall have knowledge of the system and data interpretation obtained via medical education, system documentation, and specific courses. The device does not report any diagnosis but provides numerical values; it is ultimately the physician's responsibility to make proper diagnosis and judgments based on these values.

3.2 CARDIAC MONITOR, MODEL 1600 (CM-1600)

The CM-1600 is a non-invasive monitoring device predicated by the CM-1500 that simultaneously monitors [redacted] parameters of a patient's body and represents a combination of these parameters as a single Relative Index. The device has been submitted for 510(k) approval from the FDA, but since it has not yet received clearance, it will be labeled as a non-significant risk investigational device when used in the study.

3.2.1 DEVICE DESIGN AND COMPONENTS

The CM-1600 is an all-inclusive device that includes the following components: display monitor (1), power supply (1), wrist wearable (1), and electrode array set (2). The wrist wearable may be cleaned and reused. The electrode array sets are single-use, single-subject.

3.2.2 PRINCIPLES OF OPERATION

[redacted]

3.2.3 INDICATIONS FOR USE

[redacted]

3.2.4 INTENDED USE

[redacted]

4 SUBJECT POPULATION AND SELECTION

4.1 POPULATION AND ANTICIPATED NUMBER OF SUBJECTS

Up to 200 healthy adult subjects who meet the inclusion and exclusion criteria will be consecutively enrolled in the study. [redacted] Subjects who enroll in the study but withdraw before using the device will not be included in the total number of subjects and will be replaced.

4.2 SUBJECT INCLUSION CRITERIA

I.1 Ability to provide written informed consent

I.2 Ability and willingness to comply with the study procedures and duration requirements

I.3 18 years of age or older

I.4 Consented to undergo an apheresis procedure with an automated blood component device

4.3 SUBJECT EXCLUSION CRITERIA

E.1 Females who are pregnant or breastfeeding

E.2 Undergone an amputation of the left upper extremity

E.3 Diagnosed with dextrocardia

E.4 Subjects who have a pacemaker

4.4 SUBJECT WITHDRAW / EARLY TERMINATION

Subjects who withdraw from the study before using the CM Device will be replaced. The reason the subject withdrew from the study may be recorded; subjects are not required to provide a reason. Subject withdrawal / early termination criteria may include but are not limited to:

W.1 Subject requests to be withdrawn from the study or withdraws consent.

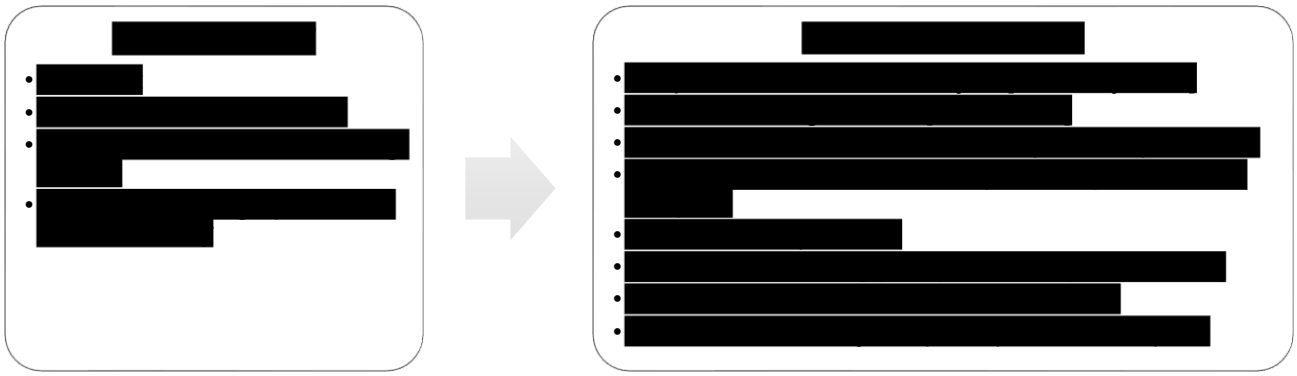
W.2 Subject refuses to comply with required study procedures.

W.3 An Adverse Event (“AE”) makes the continuation of the subject impossible or inadvisable

W.4 The Investigator determines it is in the subject’s best interest to discontinue from the study.

5 STUDY PROCEDURES

[redacted]



5.1 ENROLLMENT

A subject will be considered enrolled in the study after provided written informed consent.

5.1.1 INFORMED CONSENT

The Investigator or qualified designated study personnel will complete the Informed Consent process before any study procedures may occur. The subject will be provided an IRB-approved version of the Informed Consent Form (ICF). The subject will have an ample amount of time to

read the ICF and ask questions before providing written consent. The subject will receive a signed copy of the ICF. The Investigator or qualified designated study personnel will record that consent was obtained prior to performing study procedures.

5.2 BASELINE DATA

Baseline data collection will include obtaining health screening data directly from the standard research screening record at the study site. Data not available on the apheresis procedure record will be captured on a paper case report form (CRF). These data will include skin tone, smoking history, and if they are currently taking any cardiovascular medications or supplements that could impact their physiological response to the donation procedure. Subjects will self-report they are not currently pregnant or have been pregnant in the previous 6-weeks, and that will be captured on the research screening record.

5.3 STUDY PROCEDURE

The study procedure will consist of connecting the CM Device to the study subject and starting a monitoring session [redacted], wearing the monitor during the blood component donation, and continuing to wear the monitor [redacted] after the apheresis procedure is complete.

5.3.1 PREPARING DEVICE FOR OPERATION

The Investigator or qualified designated study personnel will prepare the device for use by following the directions within the CM Instructions for Use (IFU) manual.

[redacted]

[redacted]

After the device is prepared for operation, the Investigator or qualified designated study personnel will prepare the subject for device operation by referencing the Instructions for Use (IFU) manual. The subject will be placed in a supine position after the device is prepared for operation and maintain this position through observation.

5.3.2 CM DEVICE MONITORING SESSION

The Investigator or designated study personnel will operate the device by referencing the Instructions for Use (IFU) manual and following the study-specific steps outlined below.

[redacted]

[redacted]

5.4 ADVERSE EVENTS

Adverse Events (AE), Serious Adverse Events (SAE), or Unanticipated Adverse Device Effect (UADE) that occur after informed consent and before completion of the study will be recorded. SAE's may require follow-up contact via a telephone call, depending on the nature of the SAE.

5.5 SUBJECT COMPLETION

Subjects' participation in the study will be considered complete once the monitoring session has ended and device removed.

6 DEVICE MANAGEMENT

6.1 UNPACKING AND INSPECTION

It is the responsibility of the Principal Investigator (PI) to ensure that all study devices are unpacked and inspected prior to using in any study procedures. Upon arrival, the Investigator or designated study personnel will remove the device display monitor and accessories from the shipping container; ensure all device components are received. The study site must inform the

Sponsor of any missing or damaged items within seven (7) days. Devices with any missing or damaged items cannot be used and shall be replaced.

6.2 ACCOUNTABILITY, STORAGE & DISPENSATION

It is the responsibility of the Principal Investigator to ensure all study devices are inventoried and accounted for. The Investigator or qualified designated study personnel will record all information on the Device Accountability forms maintained in the Investigator Site Files (ISF).

The investigational device will be stored at the study center. When not in use, the device will be stored in a secure location (i.e., area with limited access or in a locked cabinet) under appropriate environmental conditions found in the Instructions for Use (IFU) manual.

The study device shall only be used under the supervision of the Principal Investigator or designated study personnel on authorized study subjects.

6.3 CLEANING & RETURN

The study device shall be cleaned before each use. Cleaning procedures will be followed per the Instructions for Use (IFU) manual. The device should always be turned off and disconnected before cleaning. The study device and any unused accessories shall be returned to the Sponsor after study completion.

7 RISKS & BENEFITS

7.1 RISK DETERMINTATION & REDUCTION

This study is determined to be exempt, non-significant risk. An Investigational Device Exemption will not be submitted based on this determination.

Study subjects are subject to risk no greater than or similar to risks associated with undergoing a blood donation. The study device and use of the device do not meet the definition of significant risk under 21CRF 812.3 (m). All adverse events will be recorded and analyzed to evaluate their significance. Possible risks may include:

- [Possible, Rare] Skin irritation or discomfort could occur from the electrodes
- [Possible, Mild] Discomfort could occur due to lying in a supine position for duration of the donation procedure.

Every possible effort will be made to reduce the risks to a minimum. Investigators or qualified designated study personnel will be experienced and skilled in apheresis procedures, receive training on the protocol and use of the device. All adverse events will be documented and reported to the Sponsor.

7.2 BENEFITS

This study is for research purposes only. There is no direct benefit to subjects participating in the study. Information from this study may help other people in the future.

8 SAFETY ASSESSMENT AND MANAGEMENT

Safety will be assessed by reviewing and summarizing adverse events.

8.1 SAFETY DEFINITIONS

8.1.1 ADVERSE EVENT (AE)

An Adverse Event (AE) is defined as any untoward medical occurrence, whether or not related to the study device or study procedure. AE's are characterized by grading, actions taken, relationship to donation or study procedure, and outcome. These definitions are in the corresponding tables below. All adverse events related to the blood donation procedure will be recorded and reported in addition to those that may occur specific to the protocol-defined study procedure. All attempts should be made to ensure resolution of the adverse event upon study completion.

Table 1: Adverse Event Severity Grading

Severity	Description
Grade 1: Mild	Awareness of signs or symptoms, but they are easily tolerated
Grade 2: Moderate	Enough discomfort to cause interference with usual activity
Grade 3: Severe	Incapacitating, with the inability to work or do usual activity
Grade 4: Fatal	Subject expired/death occurred

Table 2: Adverse Events Action(s) Taken

Action Taken (Check all that apply)	Description
None	No actions were taken, observation only.
Medications	Subject required medication(s)
Other Treatment	Subject required other treatment(s)
Early Withdrawal	Adverse event led to early study withdrawal

Table 3: Adverse Event Relationship to Donation or Study Procedure

Relationship	Description
None	Causal relationship can be ruled out
Possible – Donation Procedure	Causal relationship is reasonably possible to the blood donation procedure (i.e., the relationship cannot be ruled out)
Possible – Study Procedure/Device	Causal relationship is reasonably possible to the protocol-required study procedure and/or device (i.e., the relationship cannot be ruled out)
Yes – Donation Procedure	Causal relationship to the donation procedure is certain
Yes – Study Procedure/Device	Causal relationship to the study procedure and/or device is certain

Table 4: Adverse Event Outcome

Outcome	Description
Recovered/Resolved	Subject recovered and event was resolved upon study completion
Recovered/Resolved with Sequelae	Subject recovered but exhibited lingering minor symptoms upon study completion
Recovering	Adverse event persisted upon study completion but was improving
Not Recovered	Adverse event persisted upon study completion and was not exhibiting any signs of improvement
Death	Subject expired
Unknown	Status of the adverse event was unknown upon study completion

8.1.2 SERIOUS ADVERSE EVENT (SAE)

An SAE is defined as an AE that meets any of the following criteria: Fatal or life-threatening*; requires or prolongs in-subject hospitalization**; results in persistent or significant disability/incapacity; congenital anomaly/birth defect; important medical event. An event's severity grading, action(s) taken, relationship to the donation or study procedure, and the outcome will all be used for SAE's.

*Life-threatening is defined as an event in which the subject was at risk of death at the time of the event. It does not refer to an event that hypothetically may have caused death if it was more severe.

**In-subject hospitalization is defined as an event in which the subject was admitted to the hospital for one or more days, even if released on the same day or an emergency room visit, which results in admission to the hospital. Emergency room visits that do not result in admission to the hospital should be evaluated for one of the other serious outcomes criteria.

8.1.3 UNANTICIPATED ADVERSE DEVICE EFFECT (UADE)

An unanticipated adverse device effect is defined by 21 CFR 812.3 as any serious adverse effect on the health of safety or life-threatening problem or death caused by or associated with, a device, if that effect, problem, or death was not previously identified in nature, severity, or degree of incidence in the investigational plan or application (including supplementary plan or application, or any other unanticipated serious problem associated with the device that relates to the rights, safety, or welfare of subjects. The Investigator or designee will indicate if they believe an event was an unanticipated adverse device effect on the case report form, and the Sponsor will evaluate for reporting requirements defined below.

8.2 SAFETY REPORTING

Safety reporting begins at the time of signed Informed Consent and ends at subject study completion.

Investigators shall submit to the Sponsor a report of any AE's or SAE's that occur during the study within five (5) working days but no later than ten (10) days after the Investigator learns of the event.

Investigators shall submit to the Sponsor and to the reviewing IRB a report of any UADE(s) that occur during the study as soon as possible but no later than five (5) working days after the Investigator learns of the effect. Sponsors will evaluate UADE's.

8.2.1 REPORTING EVENTS & SAFETY CONTACTS

Events will be reported, in writing, to the Sponsor as soon as possible but no later than five (5) working days after the Investigator learns of the event. In an event resulting in the death of the subject, the event will be reported within 24-hours of knowledge of the event. The Sponsor is responsible for fulfilling IRB and regulatory reporting requirements.

Table 5: Study Reporting Contacts

Contact	Contact Information
Principal Investigator	Samantha Mack, MD [redacted]
Sponsor Representative	Zynex Monitoring Solutions [redacted]
IRB	[redacted]
Mailing Address	Zynex Monitoring Solutions Attn: ZMS Clinical 9555 Maroon Circle Englewood, CO 80112

9 STATISTICAL METHODS AND CONSIDERATIONS

9.1 SAMPLE SIZE DETERMINATION

This is a two-phase hypothesis generating study; therefore, hypothesis testing will not be performed. [redacted]

9.2 ANALYSIS SET

All eligible subjects who were enrolled in the study and used the study device will be included in the analyses. Subjects who withdraw after enrollment and before device use will be excluded from the analyses.

9.3 DESCRIPTIVE STATISTICS

Descriptive statistics will be calculated for all endpoints and measures. Continuous variables will be summarized in terms of the mean, standard deviation (SD), median, quartiles, minimum, maximum and number of observations. Categorical variables will be summarized in terms of the number of subjects providing data, frequency count and percentage.

9.4 DEMOGRAPHIC AND BASELINE CHARACTERISTICS

All demographic and baseline variables collected at enrollment will be summarized using descriptive statistics.

9.5 STATISTICAL ANALYSIS

The data for this study will be summarized using descriptive statistics. There is no formal hypothesis testing planned for this study. Point estimates and the corresponding confidence intervals will be presented for the statistical analysis. If data are normally distributed, the confidence interval of the mean will be constructed based on a t-distribution. Otherwise if data are skewed, distribution-free confidence interval of the median will be calculated. For proportions, a two-sided 95% confidence interval will be calculated using the Clopper-Pearson method.

The primary evaluations pertaining to the performance of the CM Device will examine the behavior the Relative Index value in accordance with subject outcomes and conditions that present during the apheresis donation procedures. Baseline performance of the CM Device will be set in the Relative Index before the procedure. The primary analysis will utilize the descriptive statistics to characterize the changes in the CM Device Relative Index during an apheresis procedure comparing to the baseline values. The analysis, however, can include investigation into individual vital sign parameters that the CM Device (or another source) produces during a subject's donation or [redacted] post-donation observation period.

Analysis of data sets collected from all subjects aim to satisfy the following purposes, included but not limited to:

- Examine, on a case-by-case review basis, the results produced by the CM Device for relevant subject case results. This could include analyzing data and comparing to expected/observed information as a result of this trial, from either the CM Device, from the principal investigator, designated study personnel, or Sponsor observers.
- Classify aggregate results by subject outcomes, particularly nominal and hemorrhagic shock/complications (if observed), and evaluate the performance of the CM Device to indicate either the presence of the presenting complication or specify the absence of presenting complications.
- Investigate statistical relevance of aggregate subject outcomes (where applicable for similar resulting outcomes and/or presenting complications), with analytic components possibly including but not limited to:

- Determination of the sensitivity for the CM Device to identify fluid changes in study subjects
- Determination of the specificity of the CM Device to identify normal recovery conditions of a subject after the apheresis donation procedure where no cases of hemorrhage, related shock, or other complications present.
- Compilation of relevant trends and patterns, including applicable metrics such as mean, max/min, standard deviation, expected linear trajectories, etc. of the Relative Index data results for aggregate data, as classified by patient outcomes and total fluid lost and re-infused.

[redacted]

10 DATA COLLECTION, RETENTION, AND MONITORING

10.1 DATA COLLECTION

The Investigator will prepare, maintain, and retain complete, current, accurate, organized, and legible Source Documents to record all observations and other pertinent data for each subject. In some instances, case report forms (CRFs) will serve as source documentation. The Investigator or designated study personnel will provide the Sponsor redacted standard procedure records with the subject ID number for the majority of the data collection requirements. Any required data not collected as standard of care for the apheresis procedure will be captured on study-specific paper case report forms.

Corrections of data on paper CRFs or source documents will be made by crossing out the incorrect data and making the correction. Each correction will be initialed and dated by the study personnel making the correction.

The Investigator is responsible for the information collected on subjects enrolled in the study. All data collected during the study must be reviewed and verified for completeness and accuracy by the Investigator. If any corrections are made after the Investigators signature, the Investigator will also initial and date the correction.

10.1.1 SUBJECT CONFIDENTIALITY

In order to maintain subject confidentiality, records identifying the subject will be kept in a safe and secure location; access to these records will be on a limited basis. Only the subject identification number, gender, and age will identify study subjects on CRFs and other documentation submitted to the Sponsor. A limited number of Sponsor representatives may have access to identifiable information and will take reasonable precautions to maintain the confidentiality of the subject's identity.

10.2 DATA RETENTION

All study records will be stored in a safe and secure location. Records will be retained per applicable regulatory requirements, which include for a period of 2 years after the latter of the

following two days: the date which the investigation is terminated or completed, or the date that records are no longer required for purposes of supporting premarket approval applications or a notice of completion of a product development protocol. The Investigator site may transfer custody or records to the Sponsor with appropriate documentation recording the transfer.

10.3 MONITORING

10.3.1 MONITORING PLAN

Monitoring visits will be conducted by representatives of the Sponsor or study site or both according to 21 CFR 812. (c) for non-significant risk device studies and ICH Guidelines. By signing this protocol, the Investigator grants permission to the Sponsor (or designee) and all appropriate regulatory authorities to conduct on-site or electronic monitoring or auditing or both of all appropriate study documentation.

11 STUDY ADMINISTRATION

11.1 AUDITS AND INSPECTIONS

External auditors and government inspectors may evaluate the study and must be allowed access to CRFs, source documents, and other study files. Audit reports will be confidential.

11.2 PROTOCOL AND ICF AMENDMENTS

Sponsor approval is required for any protocol or ICF amendment. Protocol or ICF amendments will not be implemented without prior written IRB approval except as allowed per the IRB procedures/approval and as necessary to eliminate immediate safety hazards to subjects. A protocol amendment intended to eliminate an apparent immediate hazard to subjects may be implemented immediately, provided IRBs are notified within five (5) working days. The Informed Consent form will be reviewed and updated as necessary at the time of the protocol amendment.

11.3 PROTOCOL DEVIATIONS

A protocol deviation is defined as any accidental or unintentional changes to, or non-compliance with the IRB approved research protocol. Any deviation from the protocol must be documented and reported to the Sponsor within 10 working days and reported to the IRB as applicable to regulatory requirements. Protocol deviations that pose an immediate risk or significant hazard to subjects must be reported to the Sponsor within 24 hours and reported to the IRB no later than 5 working days after the emergency occurred. In the instance, an Investigator uses a device without obtaining informed consent; the Investigator shall report to the Sponsor and the IRB within 5 working days as per 21 CFR 812.150 (1) (5).

12 ETHICAL AND OTHER REGULATORY CONSIDERATIONS

It is the responsibility of the Investigator that the study is conducted according to the Declaration of Helsinki, Protection of Human Volunteers (21 CFR 50), Institutional Review Board (21 CFR 56), and Responsibilities of Clinical Investigators (21 CFR 812 (e)).

12.1 INSTITUTIONAL REVIEW BOARD (IRB) REVIEW

The Protocol, ICF, and any subject facing material will be reviewed and approved by the IRB prior to study initiation. The Sponsor will maintain responsibility for obtaining IRB approval and

submitting all required study reports to the IRB. Amendments to the Protocol, ICF, or any subject facing material will not be implemented without prior written IRB approval unless to eliminate an apparent immediate hazard to subjects. All IRB approvals will be kept in the Trial Master File and Investigator Site File.

12.2 WRITTEN INFORMED CONSENT

The Informed Consent Form (ICF) and Informed Consent process will include all elements required by applicable regulations. Informed consent will be obtained in accordance with the Declaration of Helsinki, ICH, Good Clinical Practice, and US Code of Federal Regulations for Protection of Human Subjects (21 CFR 50.25 [a,b], 21 CFR 50.27, and 21 CFR Part 56, Subpart A), the Health Insurance Portability and Accountability Act (HIPAA) when applicable, and local regulations.

A properly executed, written informed consent will be obtained from all subjects prior to entering the subject into the trial, unless waived by the IRB. ICF information will be given in both verbal and written form. The subject must be given an ample amount of time to read the ICF. The subject must provide written consent by signing and dating the approved ICF. A signed copy of the ICF will be provided to the subject; originals will be maintained with the subject's study records.

Assents Forms will not be permitted as subjects must be over the age of 18 to meet the Inclusion/Exclusion criteria. Legally Authorized Representatives will not be permitted as subjects must have the ability to provide written consent to meet the Inclusion/Exclusion criteria.

[redacted]

13 ABBREVIATIONS AND DEFINITIONS OF TERMS

Table 6: Abbreviations and Definition of Terms

Abbreviation	Definition
AE	Adverse event
BPM	Beats per minute
BP	Blood pressure
C	Celsius
CFR	U.S. Code of Federal Regulations
CM-1500	Cardiac Monitor, Model 1500
CM-1600	Cardiac Monitor, Model 1600
CRF	Case report form
ECG	Electrocardiogram
e.g.	Exempli Gratia (for example)
FDA	U.S. Food and Drug Administration
GCP	Good Clinical Practice
HIPAA	Health Insurance Portability and Accountability Act
HR	Heart rate
ICF	Informed Consent Form
ICH	International Council for Harmonization
IFU	Instructions for Use
IRB	Institutional Review Board
ISF	Investigator Site File
ISO	International Organization for Standardization
lb.	Pound; unit of mass
ohms	Plural unit of electrical resistance
mL	Milliliter
PHI	Protected Health Information
PI	Principal Investigator
PPG	Photoplethysmogram
SAE	Serious adverse event
UADE	Unanticipated Adverse Device Event
ZMS	Zynex Monitoring Solutions