can reside in a user terminal. In the alternative, the processor and the storage medium can reside as discrete components in a user terminal.

Conditional language used herein, such as, among others, "can," "might," "may," "e.g.," and the like, unless specifically stated otherwise, or otherwise understood within the context as used, is generally intended to convey that certain embodiments include, while other embodiments do not include, certain features, elements and/or states. Thus, such conditional language is not generally intended to imply that features, elements and/or states are in any way required for one or more embodiments or that one or more embodiments necessarily include logic for deciding, with or without author input or prompting, whether these features, elements and/or states are included or are to be performed in any particular embodiment. The terms "comprising," "including," "having," and the like are synonymous and are used inclusively, in an open-ended fashion, and do not exclude additional elements, features, acts, operations, and so forth. Also, the term "or" is used in its inclusive sense (and not in its exclusive sense) so that when used, for example, to connect a list of elements, the term "or" means one, some, or all of the elements in the list.

While the above detailed description has shown, described, and pointed out novel features as applied to various embodiments, it will be understood that various omissions, substitutions, and changes in the form and details of the devices or algorithms illustrated can be made without departing from the spirit of the disclosure. As will be recognized, certain embodiments of the inventions described herein can be embodied within a form that does not provide all of the features and benefits set forth herein, as some features can be used or practiced separately from others.

What is claimed is:

1. A method of monitoring blood pressure of a patient, the method comprising:

receiving a physiological electrical signal from an electrical sensor coupled with a patient, the physiological electrical signal configured to reflect electrical activity of the patient's heart;

receiving a plethysmograph signal from an optical sensor coupled with a patient;

receiving a cardiac ejection signal from a first piezoelectric acoustic sensor coupled proximate the patient's heart, the cardiac ejection signal reflecting a cardiac ejection event associated with ejection of blood from the patient's heart;

calculating a centroid of a first feature in the cardiac ejection signal, the centroid corresponding to a first heart sound (S1) from the patient's heart;

receiving an arterial pulse signal from a second piezoelectric acoustic sensor coupled with a limb of the patient, said second piezoelectric acoustic sensor at a first distance away from the heart of the patient;

receiving a carotid pulse signal from a third piezoelectric acoustic sensor coupled near a carotid artery of the patient, said third piezoelectric acoustic sensor at a second distance away from the heart of the patient;

estimating, using one or more hardware processors, a pre-ejection period based on the physiological electrical signal and the cardiac ejection signal from the first piezoelectric acoustic sensor;

estimating uncompensated pulse wave transit time (PWTT) from the plethysmograph signal and the physiological electrical signal;

determining a first arterial PWTT that compensates for the estimated pre-ejection period of a cardiac cycle associated with the patient's heart from the uncompensated PWTT; and

determining a second arterial PWTT based at least partly on the cardiac ejection signal from the centroid of the first feature in the first acoustic sensor and the arterial pulse signal from the second piezoelectric acoustic sensor;

determining a third arterial PWTT based at least partly on the cardiac ejection signal from the centroid of the first feature in the first piezoelectric acoustic sensor and the carotid pulse signal from the third piezoelectric acoustic sensor;

comparing the first arterial PWTT, the second arterial PWTT, and the third arterial PWTT;

determining a final arterial PWTT based on said comparison; and

triggering an occlusive blood pressure cuff to obtain a blood pressure measurement from the patient responsive to a change in the final arterial PWTT thereby reducing instances of triggering of said occlusive blood pressure cuff for blood pressure measurement.

2. The method of claim **1**, further comprising using a previously-calculated estimated pre-ejection period to calculate the first arterial PWTT in place of the calculated pre-ejection period in response to determining that the cardiac ejection signal is insufficiently indicative of the cardiac ejection signal.

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