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are shown at intermediate points along on the exemplary cuff volume constraining device 401.

FIG. 6A is a perspective view of an exemplary embodiment of the cuff volume constraining device 601 manufactured of a flexible inelastic material comprising a first hollow member 602 and a second hollow member 603, both being adapted in this example by way of their respective tubular apertures 606, 607 to receive a blood pressure cuff. The material may be fixedly attached to itself along one or more seams 604, 605 via, for example, stitches. This exemplary embodiment of the cuff volume constraining device 601 is thus able to constrain blood pressure cuffs across two ranges of volumes. For example, a first chamber or cuff volume constraining aperture 606 may be dimensioned to constrain a blood pressure cuff to approximately 100 ml and the second cuff volume constraining aperture 607 may be dimensioned to constrain a blood pressure cuff to approximately 400 ml. This constraining device 601 is thus able to support the simulation and test for at least two volumetric ranges of cuff expansion, for example, to constrain the blood pressure cuff to a volume applicable or otherwise suitable for toddlers or small children 607, and the other cuff volume area suitable for adults 607. Other variations of the constraining device may also be created, such as a device having more than two hollow members 602, 603 each sized or adapted to constrain cuffs to differing pre-set volumes. These hollow members may be connected in various ways along a line or region 608, for example, sewn together, attached by ties or cords, by hook and loop attachments such as VELCRO®, and the like and may be made by stitches interposed between a longitudinal stitch line and the fold of an otherwise one-piece looped fabric, for example. FIG. 6B is a side view of an exemplary embodiment of the cuff volume constraining device showing a rounded fold 620 on one side of the device and a seam 604 opposite the side of the rounded fold 620 where an interposed stitch line 622 supports the second cuff volume constraining aperture 607 and where the interposed stitch 622 along with a stitched seam 604 support the first cuff volume constraining aperture 606. FIG. 6C is a top view of the exemplary embodiment of the cuff volume constraining device illustrating exemplary stitch lines 604, 622.

FIG. 7A is a diagram of the cuff volume constraining device 101 as it may be deployed in testing a non-invasive blood pressure measurement device where the cuff volume constraining device 101 is positioned about the blood pressure cuff 701 which is pneumatically connected via a tube 702 to a blood pressure simulator 703 and a blood pressure monitor 704. Typically, the blood pressure cuff is inserted into the constraining device 101. The simulator 703 typically generates pressure signals that approximate those created by a patient's arm in surface contact with a blood pressure cuff where the pulses are measured by the blood pressure monitor 704 having its cuff volumetrically constrained by the exemplary cuff volume constraining device 101. FIG. 7B is a diagram of the cuff volume constraining device 601 as it may be used in testing a non-invasive blood pressure measurement device where a portion of the cuff volume constraining device 601 is positioned about the blood pressure cuff 701 which is pneumatically connected via a tube 702 to a blood pressure simulator 703 and a blood pressure monitor 704. Typically, the blood pressure cuff is inserted into one of the hollow members of differing diameters when expanded, i.e., in this exemplary embodiment either the first, or larger, hollow member 602 or the second, or smaller, hollow

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member 603, and in FIG. 7B is shown inserted into the second, or smaller, hollow member 603 of the cuff volume constraining device 601.

The embodiments of the cuff volume constraining device shown in the various figures are for illustration purposes. Variations on the shape of the cuff volume constraining device may also be implemented, for example, having a constraining device that is hexagonal, octagonal, or any polygonal shape. This shape may be obtained before and/or even after the blood pressure cuff placed inside or inserted into the cuff volume area of the constraining device and inflated or expanded. One of ordinary skill in the art will also realize that the hollow member may be made in many ways, so that a cuff volume area is created thereby constraining the expansion of a blood pressure cuff. Furthermore, in some embodiments, the cuff volume constraining device may be enclosed in one end, for example, forming a cup-like device wherein a blood pressure cuff may still be inserted into the open end or into the cuff volume area of the constraining device. Other flexible and inelastic materials may also be used.

Many alterations and modifications may be made by those having ordinary skill in the art without departing from the spirit and scope of the invention. Therefore, it must be understood that the illustrated embodiments have been set forth only for the purposes of example and that it should not be taken as limiting the invention as defined by the following claims.

The definitions of the words or elements of the following claims are, therefore, defined in this specification to include not only the combination of elements which are literally set forth, but all equivalent structure, material or acts for performing substantially the same function in substantially the same way to obtain substantially the same result. In addition to the equivalents of the claimed elements, obvious substitutions now or later known to one with ordinary skill in the art are defined to be within the scope of the defined elements.

What is claimed is:

1. A system for testing a non-invasive blood pressure measurement device, wherein the blood pressure measurement device includes a blood pressure monitor and a blood pressure cuff, the system comprising:
  - the blood pressure monitor and the blood pressure cuff;
  - a blood pressure simulator adapted to pneumatically connect to the blood pressure cuff and blood pressure monitor; and
  - at least one hollow member adapted to receive and volumetrically constrain the blood pressure cuff.
2. The system of claim 1, wherein the at least one hollow member is tubular.
3. The system of claim 1, wherein the at least one hollow member is cylindrical.
4. The system of claim 1, wherein the at least one hollow member comprises two connected hollow members.
5. The system of claim 4, wherein a first connected hollow member of the two connected hollow members limits the blood pressure cuff to a volume less than approximately 400 ml and a second connected hollow member of the two connected hollow members limits the blood pressure cuff to a volume less than approximately 100 ml.
6. The system of claim 1, wherein the at least one hollow member is flexible and substantially inelastic.
7. The system of claim 1, wherein the at least one hollow member limits the maximum diameter and volume to which the blood pressure cuff may expand.