CLAIMS :

1. An intravenous therapy system, comprising:

a stand-alone device comprising a housing, the housing comprising:

a processor;

a data storage device; and

a handheld ultrasound probe to detect a blood vessel within a patient's body, the handheld ultrasound probe comprising:

a video display device physically and operatively coupled to the handheld ultrasound probe, wherein the video display device is configured to display the blood vessel, and wherein the video display device presents a mapping of blood vessels within the patient's body and maintains that mapping within the data storage device; and

a magnetic field detector configured to determine a position of a needle of a vascular access device (VAD) and provide closed-loop feedback indicating whether a projected path of the needle is within the blood vessel detected by the ultrasound probe.

2. The intravenous therapy system of claim 1, further comprising a VAD advancement system to advance the needle into the patient's body automatically using a motor.

3. The intravenous therapy system of claim 1, wherein the handheld ultrasound probe identifies, on the video display, a vein via a transverse planar image of the blood vessel within the patient's body.

4. The intravenous therapy system of claim 1, further comprising a VAD recommendation module to provide feedback, via the video display, a recommendation of which of a plurality of different VADs are to be used to access the blood vessel.

5. The intravenous therapy system of claim 1, wherein the video display device provides a coronal planar view of the blood vessels within the patient's body depicting the projected path of the needle within the patient's body and a transverse planar view depicting projected path of the needle within the patient's body.

6. The intravenous therapy system of claim 1, further comprising an audio feedback device, a haptic feedback device, or visual feedback to indicate in response to the needle being inserted into the blood vessel within the patient's body is not projected to be positioned within a blood vessel or is projected to be positioned within a blood vessel.