THE INVENTION CLAIMED IS:

1. A fluid transfer device comprising:

a catheter having a proximal end portion and a distal end portion and defining a lumen extending through the proximal end portion and the distal end portion;

an introducer having a proximal end portion and a distal end portion, the introducer defining an inner volume configured to movably receive the catheter, the distal end portion of the introducer having a lock configured to couple the introducer to an indwelling peripheral intravenous line;

an actuator movably coupled to the introducer, the actuator having a first portion disposed outside of the introducer and a second portion disposed in the inner volume of the introducer and coupled to the proximal end portion of the catheter, the actuator configured to move relative to the introducer to move the catheter between a first position, in which the catheter is disposed within the introducer, and a second position, in which the distal end portion of the catheter is disposed beyond the distal end portion of the introducer such that at least a first portion of the catheter is disposed within the peripheral intravenous line when the introducer is coupled to the peripheral intravenous line; and

a catheter support movably coupled to the introducer and positioned between the actuator and the distal end portion of the introducer, wherein the catheter support comprises:

a tether having a proximal end and a distal end;

a hub attached to the distal end of the tether; and

a passageway extending through the hub,

wherein the catheter extends from the second portion of the actuator through the passageway of the catheter support to the distal end portion of the introducer, and during movement of the actuator to move the catheter from the first position to the second position, the actuator contacts at least a portion of the catheter support and moves the catheter support with respect to the introducer.

2. The fluid transfer device of claim 1, wherein the tether comprises a beam, and the hub extends from a distal end of the beam.

3. The fluid transfer device of claim 2, wherein a first portion of the actuator and the beam of the catheter support are positioned within a first portion of the inner volume of the introducer and a second portion of the actuator and the hub of the catheter support are positioned within a second portion of the inner volume of the introducer, and wherein the first

portion of the inner volume defines an axis that is parallel to and offset from an axis defined by the second portion of the inner volume.

4. The fluid transfer device of claim 2, wherein the beam of the catheter support has a profile corresponding to an outer surface of a flange provided on an inner surface of the introducer, such that the beam fits over and at least partially covers the flange and is movable with respect to the introducer along the flange.

5. The fluid transfer device of claim 2, further comprising an attachment assembly comprising a first engagement portion on the flange provided on an inner surface of the introducer and a second engagement portion provided on the beam of the catheter support, wherein the engagement assembly holds the beam in place on the flange during movement of the catheter support with respect to the introducer.

6. The fluid transfer device of claim 5, wherein the first engagement surface comprises a groove on one of the flange and the beam and the second engagement portion comprises at least one protrusion on the other of the flange and the beam, and the at least one protrusion is received in the groove.

7. The fluid transfer device of claim 2, wherein a portion of the actuator is shaped to receive the beam and the flange such that the beam is nested within the portion of the actuator, and the flange is nested within a profile of the beam.

8. The fluid transfer device of claim 1, wherein the passageway is sized and shaped to allow the catheter to freely pass through the passageway while containing the catheter to prevent excessive movement of the catheter within the inner volume of the introducer.

9. The fluid transfer device of claim 1, wherein the passageway comprises a proximal portion adjacent to and in fluid communication with a proximal opening of the passageway and a distal portion adjacent to and in fluid communication with a distal opening of the passageway, the distal portion of the passageway is substantially cylindrical, and the proximal portion is cone-shaped or funnel shaped such that a diameter of the proximal portion decreases in a distal direction from the proximal opening to a juncture between the proximal portion of the passageway and the distal portion of the passageway.

10. The fluid transfer device of claim 9, wherein a diameter of the distal opening of the passageway is smaller than a diameter of the proximal opening of the passageway, and the diameter of the proximal portion decreases in the distal direction from the diameter of the proximal opening to the diameter of the distal opening of the passageway.

11. The fluid transfer device of claim 2, wherein the hub of the catheter support is positioned between the actuator and the distal end portion of the introducer, such that the hub divides an unsupported length of the catheter between the actuator and the distal end portion of the introducer into two smaller portions.

12. The fluid transfer device of claim 11, wherein a length of the beam of the catheter support is set such that, with the catheter in the first position, the position of the hub along the unsupported length of the catheter is offset from the center point of the unsupported length of the catheter.

13. The fluid transfer device of claim 12, wherein when the catheter is in the first position, the hub of the catheter support is located in a position corresponding to a position of the actuator when the advancement of the distal end portion of the catheter into the indwelling peripheral intravenous line meets resistance requiring additional force to be provided to the actuator to further advance the catheter.

14. The fluid transfer device of claim 2, wherein, when the actuator is moved in a distal direction partially advancing the catheter towards the second position, the actuator contacts the hub of the catheter support, and during further movement of the actuator in the distal direction, the actuator pushes the hub of the catheter support in the distal direction and the beam of the catheter support is advanced along the flange in the distal direction.

15. The fluid transfer device of claim 14, wherein a portion of the actuator is sized and shaped to be at least partially received within a portion of the passageway of the hub.

16. The fluid transfer device of claim 2, wherein a flange is provided at a proximal end of the beam of the catheter support, and when the catheter is in the second position and the actuator is moved in a proximal direction to move the catheter back to the first position,

the actuator contacts the flange of the catheter support, and during further movement of the actuator in the proximal direction, the actuator pushes the flange of the catheter support in the proximal direction and the beam of the catheter support is advanced along the flange in a proximal direction.

17. The fluid transfer device of claim 16, wherein the catheter support further comprises at least one locking protrusion extending from the catheter support through an opening in the introducer, and at least a portion of the locking protrusion extends in a distal direction along an outer surface of the introducer, and

wherein the at least one locking protrusion is sized and shaped such that, when the catheter support is positioned at the distal end portion of the introducer, the locking protrusion is positioned to interfere with the release of the lock such that the catheter support must be moved in the proximal direction in order to disconnect the lock from the indwelling peripheral intravenous line.

18. The fluid transfer device of claim 1, wherein the catheter support further comprises a bracket having a profile corresponding to an outer surface of a flange provided on an inner surface of the introducer, such that the bracket fits over and at least partially covers the flange and is movable with respect to the introducer along the flange,

wherein the hub extends from the bracket, and

the tether is a collapsible tether, the distal end of the tether is attached to the hub, a proximal end of the tether is attached to the proximal end portion of the introducer, and the tether passes through an opening in the actuator.

19. The fluid transfer device of claim 18, wherein a first portion of the actuator and the bracket are positioned within a first portion of the inner volume of the introducer; a second portion of the actuator, the hub, and the tether are positioned within a second portion of the inner volume of the introducer; and the first portion of the inner volume defines an axis that is parallel to and offset from an axis defined by the second portion of the inner volume.

20. The fluid transfer device of claim 18, further comprising an attachment assembly comprising a first engagement portion on the flange provided on the inner surface of the introducer and a second engagement portion provided on the bracket, wherein the

engagement assembly holds the bracket in place on the flange during movement of the catheter support with respect to the introducer.