CLAIMS

1. A catheter assembly comprising:

a catheter carried by a catheter adapter;

a needle having a sharp distal tip and disposed in the catheter such that in a first needle position, the needle extends beyond the catheter;

a septum actuator having openings extending through an outer wall of the septum actuator, the septum actuator disposed in the catheter adapter and configured to open a septum; and

a spring clip disposed in the septum actuator and engaging the openings of the septum actuator in the first needle position; wherein

the spring clip does not engage the catheter adapter.

2. The catheter assembly of claim 1, wherein

the spring clip includes one or more flexible arms;

the one or more flexible arms bias against the needle in the first needle position; and

the one or more flexible arms bias against each other to enclose the distal tip of the needle when the needle is in a second needle position.

3. The catheter assembly of claim 2, wherein

the one or more flexible arms engage the openings of the septum actuator in the first needle position to prevent removal of the spring clip from the catheter assembly.

4. The catheter assembly of claim 2, wherein

the one or more flexible arms disengage the openings of the septum actuator in the second needle position to allow removal of the spring clip from the catheter assembly.

5. The catheter assembly of claim 2, wherein

the flexible arms each have a width smaller than a width of the openings of the septum actuator.

6. The catheter assembly of claim 5, wherein

the flexible arms each include a proximal arm portion and a distal arm portion;

the distal arm portion is narrower in width than the proximal arm portion; and

the distal arm portion includes a curvature that is configured to eliminate contact with the opening of the septum actuator.

7. The catheter assembly of claim 5, wherein

the flexible arms each include a distal wall;

the distal wall includes a top wall portion and a bottom wall portion;

the top wall portion is narrower in width than the bottom wall portion; and

the top wall portion includes a curvature that is configured to eliminate contact with the opening of the septum actuator.

8. The catheter assembly of claim 1, wherein

when the needle is in a second needle position, the spring clip disengages the openings of the septum actuator.

9. The catheter assembly of claim 1, wherein

the spring clip does not contact the catheter adapter.

10. The catheter assembly of claim 1, wherein

the needle further includes a deformation; and

the deformation is enclosed by the spring clip when the needle is in a second needle position.

11. The catheter assembly of claim 10, wherein

the deformation in the needle is configured to cause the spring clip to axially move with respect to the septum actuator.

12. The catheter assembly of claim 1, wherein

the catheter adapter includes a mating portion at a proximal end of the catheter adapter that is configured to engage a Luer device; and

the mating portion has an engagement surface of at least 7.5 mm in length for engaging the Luer device.

13. The catheter assembly of claim 1, wherein

the septum actuator includes a distal opening in communication with an internal passage that extends throughout a length of the septum actuator for fluid to flow when the septum is opened.

14. The catheter assembly of claim 13, wherein

the openings of the septum actuator extend through the septum actuator in a direction substantially perpendicular to the internal passage for flushing fluid.

15. The catheter assembly of claim 1, wherein

the catheter adapter includes a retention feature; and

the septum actuator is retained in the catheter adapter by the retention feature.

16. The catheter assembly of claim 1, wherein

the needle manually moves from the first needle position to a second needle position.

17. The catheter assembly of claim 1, wherein

the septum actuator moves between a first actuator position to engage the septum and a second actuator position to disengage the septum; and

a return member returns the septum actuator from the first actuator position to the second actuator position.

18. The catheter assembly of claim 1, further comprising:

a spring disposed about the needle and extending between a needle hub and a proximal end of a barrel assembly; and

an activation button movably mounted adjacent to a distal end of the barrel assembly and adapted for selective engagement with the needle hub to hold the needle hub adjacent to the distal end of the barrel assembly against a bias of the spring in the first needle position; wherein

when the activation button is depressed, the spring is released to move the needle and the needle hub to a second needle position where the spring clip encloses the distal tip of the needle and subsequently to a third needle position where the needle and the spring clip are removed from the catheter adapter; and

a needle protection member encloses the needle completely in the third needle position.

19. The catheter assembly of claim 1, wherein

the spring clip cooperates with a spring housing;

a proximal end of the spring housing includes a tapered outer surface;

the needle moves to a second needle position enclosing the sharp distal tip; and

when the needle moves to a third needle position, the spring housing is guided by an engagement between the tapered outer surface of the spring housing and a tapered inner surface of a barrel assembly to dispose the spring clip and the spring housing into the barrel assembly.