CLAIMS

We claim:

1. A catheter system, comprising:

a catheter adapter, comprising a distal end, a proximal end, and a wall forming a lumen;

a catheter extending distally from the distal end of the catheter adapter; and

a needle assembly coupled to the catheter adapter, the needle assembly comprising:

an introducer needle, comprising a distal tip and a bump feature, wherein the distal tip is disposed distal to the catheter in a first position; and

a housing, comprising:

a distal opening;

a proximal opening, wherein a diameter of the proximal opening is less than an outer diameter of the bump feature;

a pathway extending between the distal opening and the proximal opening, wherein the introducer needle extends through the pathway; and

a first portion, comprising a magnet extending through the first portion, wherein the magnet comprises a first magnetic pole and a second magnetic pole;

a second portion comprising another magnet, wherein the other magnet comprises a first magnetic pole and a second magnetic pole, wherein the second magnetic pole of the other magnet is proximal to the first magnetic pole of the other magnet, wherein the second magnetic pole of the magnet is generally aligned with and repelled by the second magnetic pole of the other magnet, wherein the introducer needle is disposed between the second magnetic pole of the magnet and the second magnetic pole of the other magnet,

wherein the distal tip of the introducer needle is configured to be withdrawn proximally from the first position to a second position in which the bump feature contacts the proximal opening and proximally from the second position to a third position, wherein in response to withdrawing the distal tip of the introducer needle proximally from the second position to the third position, the second portion slides proximally with respect to the first portion and the second magnetic pole of the magnet is aligned with and attracted to the first magnetic pole of the other magnet such that the magnet moves inwardly towards the other magnet.

2. The catheter system of claim 1, wherein in response to withdrawing the distal tip of the introducer needle proximally from the second position to the third position, the second magnetic pole of the magnet is aligned with and attracted to the first magnetic pole of the other magnet such that the magnet moves inwardly towards the other magnet to block the distal opening.

3. The catheter system of claim 1, wherein the wall of the catheter adapter comprises a slot, wherein the first magnetic pole of the magnet is disposed within the slot, wherein in response to withdrawing the distal tip of the introducer needle proximally from the second position to the third position, the second magnetic pole of the magnet is aligned with and attracted to the first magnetic pole of the other magnet such that the magnet moves inwardly towards the other magnet and is removed from the slot.

4. The catheter system of claim 3, wherein in response to the magnet being removed from the slot, the catheter adapter and the needle assembly are uncoupled.

5. The catheter system of claim 1, wherein the second magnetic pole of the magnet and the second magnetic pole of the other magnet are spaced apart from an outer surface of the introducer needle.

6. The catheter system of claim 1, wherein the magnet is oriented generally perpendicular to a longitudinal axis of the catheter system.

7. The catheter system of claim 1, wherein the other magnet is oriented generally parallel to a longitudinal axis of the catheter system.

8. The catheter system of claim 1, wherein the magnet is proximate the pathway.

9. The catheter system of claim 1, wherein the other magnet is proximate the pathway.

10. The catheter system of claim 1, wherein the magnet and the other magnet are permanent magnets.

11. The catheter system of claim 1, wherein the proximal end of the introducer needle is secured within a needle hub, wherein the needle hub is proximate the housing.

12. A catheter system, comprising:

a catheter adapter, comprising a distal end, a proximal end, and a wall forming a lumen;

a catheter extending distally from the distal end of the catheter adapter; and

a needle assembly coupled to the catheter adapter, the needle assembly comprising:

an introducer needle, comprising a distal tip and a bump feature, wherein the distal tip is disposed distal to the catheter in a first position; and

a housing, comprising:

a distal opening;

a proximal opening, wherein a diameter of the proximal opening is less than an outer diameter of the bump feature;

a pathway extending between the distal opening and the proximal opening, wherein the introducer needle extends through the pathway;

a first portion comprising a temporary magnet extending through the first portion; and

a second portion comprising a permanent magnet secured within the second portion, wherein the permanent magnet comprises a first magnetic pole and a second magnetic pole, wherein the introducer needle is disposed between the temporary magnet and the permanent magnet,

wherein the distal tip of the introducer needle is configured to be withdrawn proximally from the first position to a second position in which the distal tip is disposed proximal to the temporary magnet and the permanent magnet, wherein in response to withdrawing the distal tip of the introducer needle proximally from the first position to the second position, the bump feature contacts the proximal opening to cause the second portion to move proximally relative to the first portion, the proximal movement of the second portion relative to the first portion causing the temporary magnet to move inwardly towards the permanent magnet.

13. The catheter system of claim 12, wherein the proximal movement of the second portion relative to the first portion causes the temporary magnet to align with the first magnetic pole.

14. The catheter system of claim 12, wherein the wall of the catheter adapter comprises a slot, wherein the temporary magnet is disposed within the slot, wherein in response to withdrawing the distal tip of the introducer needle proximally from the first position to the second position, the temporary magnet moves inwardly towards the permanent magnet and is removed from the slot.

15. The catheter system of claim 14, wherein in response to the temporary magnet being removed from the slot, the catheter adapter and the needle assembly are uncoupled.

16. The catheter system of claim 12, wherein the temporary magnet is proximate the pathway.

17. The catheter system of claim 12, wherein the permanent magnet is proximate the pathway.

18. The catheter system of claim 12, wherein the temporary magnet comprises steel.

19. The catheter system of claim 12, wherein the permanent magnet is spaced apart from the introducer needle, wherein the temporary magnet contacts the introducer needle.

20. The catheter system of claim 12, wherein the proximal end of the introducer needle is secured within a needle hub.