CLAIMS

1. A catheter system, comprising:

an outer catheter adapter, comprising a distal end and a proximal end;

an outer catheter, comprising a distal end, a proximal end, an outer catheter lumen extending through the distal end of the outer catheter and the proximal end of the outer catheter, and an inner surface forming the outer catheter lumen, wherein the outer catheter extends distally from the distal end of the outer catheter adapter, wherein the distal end of the outer catheter comprises a distal opening;

an inner catheter adapter disposed within the outer catheter adapter, the inner catheter adapter, comprising a distal end, a proximal end, and an inner catheter lumen extending through the distal end of the inner catheter adapter and the proximal end of the inner catheter adapter; and

an inner catheter extending distally from the distal end of the inner catheter adapter, wherein the inner catheter is disposed within the outer catheter lumen, wherein the inner catheter and the inner catheter adapter are configured to move with respect to the outer catheter and the outer catheter adapter between a proximal position and a distal position.

2. The catheter system of claim 1, wherein in response to the inner catheter and the inner catheter adapter being in the distal position, a distal end of the inner catheter is disposed distal to the distal end of the outer catheter.

3. The catheter system of claim 1, further comprising a gap disposed between an outer surface of the inner catheter and the inner surface of the outer catheter, wherein in response to the inner catheter and the inner catheter adapter being in the distal position, the inner catheter is disposed within the distal opening to restrict flow distally into the gap, wherein in response to movement of

the inner catheter from the distal position to the proximal position, the inner catheter is disposed proximal to the distal opening and the gap is in fluid communication with the distal opening.

4. The catheter system of claim 1, wherein the inner catheter adapter is slidable relative to outer catheter adapter to move the inner catheter adapter and the inner catheter between the proximal position and the distal position.

5. The catheter system of claim 4, further comprising a toggle joint, comprising a distal end coupled to the outer catheter adapter and a proximal end coupled to the inner catheter adapter.

6. The catheter system of claim 5, wherein the toggle joint is configured to depress to move the inner catheter and the inner catheter adapter to the proximal position.

7. The catheter system of claim 1, comprising:

the catheter system further comprising a plurality of fenestrations disposed within the outer catheter or the inner catheter, wherein the plurality of fenestrations are blocked when the inner catheter is in the first position, wherein in response to movement of the inner catheter from the first position to the second position, the plurality of fenestrations are unblocked to allow fluid to flow through the plurality of fenestrations into the inner catheter lumen.

8. The catheter system of claim 7, wherein the plurality of fenestrations are disposed within the outer catheter, further comprising another plurality of fenestrations disposed within the inner catheter, wherein the inner catheter and the inner catheter adapter are configured to rotate with respect to the outer catheter and the outer catheter adapter between the first position and the second position, wherein in response to the inner catheter and the inner catheter adapter being in the second position, the plurality of fenestrations and the other plurality of fenestrations are aligned, wherein in response to the inner catheter and the inner catheter adapter being in the first position, the plurality of fenestrations and the other plurality of fenestrations are misaligned.

9. The catheter system of claim 7, wherein the inner catheter and the inner catheter adapter are configured to slide with respect to the outer catheter and the outer catheter adapter between the first position and the second position.

10. The catheter system of claim 9, wherein in response to the inner catheter being in the second position, the inner catheter extends through the distal opening of the outer catheter.

11. The catheter system of claim 10, wherein the plurality of fenestrations are disposed within the distal end of the inner catheter, wherein the plurality of fenestrations are disposed distal to the distal opening of the outer catheter in response to movement of the inner catheter from the first position to the second position.

12. The catheter system of claim 9, wherein the plurality of fenestrations are disposed within the outer catheter, further comprising another plurality of fenestrations disposed within the inner catheter, wherein in response to the inner catheter and the inner catheter adapter being in the second position, the plurality of fenestrations and the other plurality of fenestrations are aligned, wherein in response to the inner catheter and the inner catheter adapter being in the first position, the plurality of fenestrations and the other plurality of fenestrations are misaligned.

13. The catheter system of claim 12, wherein the plurality of fenestrations are disposed within the distal end of the outer catheter or within the proximal end of the outer catheter.

14. The catheter system of claim 7, wherein the inner catheter and the inner catheter adapter are configured to slide with respect to the outer catheter and the outer catheter adapter between the first position and the second position, wherein the plurality of fenestrations are disposed within the outer catheter.

15. The catheter system of claim 14, wherein in response to the inner catheter moving between the first position and the second position, the distal end of the inner catheter moves distal to the plurality of fenestrations.