

## CLAIMS

1. A catheter system, comprising:

a catheter adapter, comprising a distal end, a proximal end, and a lumen extending through the distal end and the proximal end;

a concertinaed tube, comprising a distal end coupled to the proximal end of the catheter adapter and disposed in a collapsed position, wherein the concertinaed tube is movable between the collapsed position and an expanded position;

a luer connector coupled to a proximal end of the concertinaed tube; and

a needle assembly, comprising a needle hub and an introducer needle extending distally from the needle hub, wherein the concertinaed tube and the luer connector are disposed within the needle hub.

2. The catheter system of claim 1, further comprising a catheter extending from the distal end of the catheter adapter, wherein a distal end of the catheter comprises a plurality of side holes.
3. The catheter system of claim 2, wherein the catheter is configured to provide a flow rate of 1.235 mL/hr to 5.400 mL/hr, inclusive.
4. The catheter system of claim 1, further comprising a passive needle safety clip disposed within the needle hub between the luer connector and a proximal end of the needle hub, wherein the introducer needle extends through the passive needle safety clip.
5. The catheter system of claim 4, wherein the passive needle safety clip comprises a proximal opening, wherein an outer surface of the introducer needle comprises a feature, wherein an

outer diameter of the feature is greater than a diameter of the proximal opening such that the feature is prevented from moving proximal to the proximal opening.

6. The catheter system of claim 1, wherein in response to the concertinaed tube moving between the expanded position and the collapsed position, a length of the concertinaed tube is reduced by 50% to 70%, inclusive.
7. The catheter system of claim 1, wherein the luer connector comprises a cannula and a slit septum surrounding the cannula, wherein the cannula comprises a plurality of openings.
8. The catheter system of claim 7, a proximal end of the slit septum forms a seal with an inner surface of the luer connector.
9. The catheter system of claim 1, wherein a proximal end of the needle hub comprises a flashback chamber and a hydrophobic filter proximate the flashback chamber.
10. The catheter system of claim 1, where the catheter system has a length of 75 mm or less.
11. The catheter system of claim 1, wherein the catheter adapter comprises one or more push tabs.
12. The catheter system of claim 1, wherein the catheter adapter comprises a first wing and a second wing, wherein the first wing and the second wing extend outwardly from opposite sides of a body of the catheter adapter.
13. The catheter system of claim 1, wherein a proximal end of the needle hub comprises a hydrophobic filter.
14. A method, comprising:  
  
inserting a catheter system into vasculature of a patient, wherein the catheter system comprises:

a catheter adapter, comprising a distal end, a proximal end, and a lumen extending through the distal end and the proximal end;

a concertinaed tube, comprising a distal end coupled to the proximal end of the catheter adapter and disposed in a collapsed position, wherein the concertinaed tube is movable between the collapsed position and an expanded position;

a luer connector coupled to a proximal end of the concertinaed tube; and

a needle assembly, comprising a needle hub and an introducer needle extending distally from the needle hub, wherein the concertinaed tube and the luer connector are disposed within the needle hub;

removing the needle assembly from the catheter system inserted within the vasculature of the patient;

after removing the needle assembly from the catheter system, moving the concertinaed tube from the collapsed position to the expanded position.

15. The method of claim 14, further comprising coupling an extension set to the proximal end of the concertinaed tube after moving the concertinaed tube from the collapsed position to the expanded position.

16. The method of claim 15, further comprising administering a drug to the patient through the extension set.

17. The method of claim 14, further comprising coupling an infusion device to the proximal end of the concertinaed tube after moving the concertinaed tube from the collapsed position to the expanded position.

18. The method of claim 14, wherein no priming of the catheter system occurs prior to inserting the catheter system into the vasculature of the patient.
19. The method of claim 14, wherein a single hand is used for inserting the catheter system into the vasculature of the patient.
20. The method of claim 14, wherein in response to removing the needle assembly from the catheter system inserted within the vasculature of the patient, a drag force on the introducer needle is less than 1.1 N.