

CLAIMS

What is claimed is:

1. A two-piece catheter, comprising:
 - a proximal catheter piece including:
 - a proximal catheter-hub piece of a two-piece catheter hub; and
 - one or more extension legs respectively including one or more extension-leg lumens, each extension leg of the one-or-more extension legs coupled to the proximal catheter-hub piece by a distal-end portion of the extension leg; and
 - a distal catheter piece including:
 - a distal catheter-hub piece of the two-piece catheter hub; and
 - a catheter tube including one or more catheter-tube lumens, the catheter tube coupled to the distal catheter-hub piece by a proximal-end portion of the catheter tube,

wherein the two-piece catheter has a connected state in which the proximal catheter-hub piece is connected to the distal catheter-hub piece such that the one-or-more catheter-tube lumens are respectively fluidly connected to the one-or-more extension-leg lumens across the two-piece catheter hub.
2. The two-piece catheter of claim 1, wherein the proximal catheter-hub piece includes one or more rigid tubes respectively disposed in one or more proximal catheter-hub lumens, the one-or-more rigid tubes extending from a distal end of the proximal catheter-hub piece.
3. The two-piece catheter of claim 2, wherein the distal catheter-hub piece includes one or more seals respectively disposed in one or more distal catheter-hub lumens, the one-or-more seals configured to sit between the one-or-more rigid tubes and the one-or-more distal catheter-hub lumens, respectively, in the connected state of the two-piece catheter assembly.
4. The two-piece catheter of claim 1, wherein the distal catheter-hub piece includes one or more rigid tubes respectively disposed in one or more distal catheter-hub lumens, the one-or-more rigid tubes extending from a proximal end of the distal catheter-hub piece.

5. The two-piece catheter of claim 4, wherein the proximal catheter-hub piece includes one or more seals respectively disposed in one or more proximal catheter-hub lumens, the one-or-more seals configured to sit between the one-or-more rigid tubes and the one-or-more proximal catheter-hub lumens, respectively, in the connected state of the two-piece catheter assembly.

6. The two-piece catheter of any of claims 1-5, wherein the distal catheter-hub piece includes an integral clip having tabbed arms proximally extending from the distal catheter-hub piece and the proximal catheter-hub piece includes surface recesses configured to seat tabs of the arms therein in the connected state of the two-piece catheter assembly.

7. The two-piece catheter of claim 6, wherein the proximal catheter-hub piece includes surface-undercut grooves configured to seat tips of the arms therein in the connected state of the two-piece catheter assembly.

8. The two-piece catheter of either claim 6 or 7, wherein the arms extend from major sides of the distal catheter-hub piece and the surface recesses are in major surfaces of the proximal catheter-hub piece.

9. The two-piece catheter of either claim 6 or 7, wherein the arms extend from minor sides of the distal catheter-hub piece and the surface recesses are in minor surfaces of the proximal catheter-hub piece.

10. The two-piece catheter of any of claims 1-5, wherein the proximal catheter-hub piece includes an integral clip having tabbed arms distally extending from the proximal catheter-hub piece and the distal catheter-hub piece includes surface recesses configured to seat tabs of the arms therein in the connected state of the two-piece catheter assembly.

11. The two-piece catheter of claim 10, wherein the distal catheter-hub piece includes surface-undercut grooves configured to seat tips of the arms therein in the connected state of the two-piece catheter assembly.

12. The two-piece catheter of either claim 10 or 11, wherein the arms extend from major sides of the proximal catheter-hub piece and the surface recesses are in major surfaces of the distal catheter-hub piece.

13. The two-piece catheter of either claim 10 or 11, wherein the arms extend from minor sides of the proximal catheter-hub piece and the surface recesses are in minor surfaces of the distal catheter-hub piece.

14. The two-piece catheter of any of claims 1-13, wherein the two-piece catheter includes a set of three lumens in the connected state of the two-piece catheter assembly, the set of three lumens including a primary lumen, a secondary lumen, and a tertiary lumen.

15. The two-piece catheter of claim 14, wherein the primary lumen has a primary-lumen aperture in a distal end of the two-piece catheter, the secondary lumen has a secondary-lumen aperture in a side of the catheter tube proximal of the primary-lumen aperture, and the tertiary lumen has a tertiary-lumen aperture in the side of the catheter tube proximal of the secondary-lumen aperture.

16. A method of using a two-piece catheter, comprising:
obtaining a two-piece catheter including a distal catheter piece and a proximal catheter piece, the distal catheter piece including a catheter tube coupled to a distal catheter-hub piece by a proximal-end portion of the catheter tube;
establishing a needle tract from an area of skin to a blood-vessel lumen of a patient with an introducer needle disposed in an introducing lumen of the distal catheter piece such that a needle tip of the introducer needle extends out of an introducing-lumen aperture of the introducing lumen;
withdrawing the introducer needle from the introducing lumen; and
clipping together the distal catheter-hub piece and a proximal catheter-hub piece, thereby respectively connecting one or more catheter-tube lumens of the catheter tube to one or more extension-leg lumens of one or more extension legs coupled to the proximal catheter-hub piece of the proximal catheter piece.

17. The method of claim 16, wherein clipping together the distal catheter-hub piece and the proximal catheter-hub piece includes clipping an integral clip of the distal catheter-hub piece onto the proximal catheter-hub piece such that tabs of arms of the integral clip seat in surface recesses in major or minor surfaces of the proximal catheter-hub piece.

18. The method of claim 16, wherein clipping together the distal catheter-hub piece and the proximal catheter-hub piece includes clipping an integral clip of the proximal catheter-

hub piece onto the distal catheter-hub piece such that tabs of arms of the integral clip seat in surface recesses in major or minor surfaces of the distal catheter-hub piece.

19. The method of claim 16, further comprising:
 - advancing an access guidewire disposed in a needle lumen of the introducer needle into the blood-vessel lumen beyond the needle tip;
 - advancing a distal-end portion of a first section of the catheter tube into the blood-vessel lumen over the introducer needle using the access guidewire as a guide; and
 - withdrawing the access guidewire together with the introducer needle when withdrawing the introducer needle from the introducing lumen.
20. The method of claim 16, further comprising:
 - advancing a maneuver guidewire into the blood-vessel lumen and to a target location by way of a primary lumen of the two-piece catheter established by clipping together the distal catheter-hub piece and the proximal catheter-hub piece;
 - advancing a remainder of the distal-end portion of the first section of the catheter tube into the blood-vessel lumen up to a proximal-end portion of a second section of the catheter tube using the maneuver guidewire as a guide, stopping the advancing when a distal end of the catheter tube arrives at the target location; and
 - withdrawing the maneuver guidewire and leaving the two-piece catheter in place in the patient.