

CLAIMS

1. A vascular access device, comprising:
 - a first lumen, comprising a distal end and a proximal end;
 - a second lumen, comprising a distal end and a proximal end, wherein the distal end of the second lumen is proximal to the distal end of the first lumen;
 - an opening or a valve adjacent to the distal end of the second lumen;
 - a first connector disposed at the proximal end of the first lumen; and
 - a second connector disposed at the proximal end of the second lumen.
2. The vascular access device of claim 1, wherein the first lumen and the second lumen within the catheter adapter are concentric.
3. The vascular access device of claim 1, wherein the first lumen and the second lumen are side by side.
4. The vascular access device of claim 1, wherein the vascular access device comprises:
 - a catheter adapter, comprising a distal end, a proximal end, and a divider extending between the distal end of the catheter adapter and the proximal end of the catheter adapter, wherein the divider separates the first lumen and the second lumen within the catheter adapter;
 - a first extension tube extending from the proximal end of the catheter adapter to the first connector;
 - a second extension tube extending from the proximal end of the catheter adapter to the second connector; and
 - a catheter extending from the proximal end of the catheter adapter,

wherein the first extension tube and an entire length of the catheter comprise the first lumen;

wherein the second extension tube and a proximal portion of the catheter comprise the second lumen, wherein the divider extends through the proximal portion of the catheter.

5. The vascular access device of claim 4, wherein the first lumen and the second lumen within the catheter adapter and the proximal portion are concentric, wherein the divider is tubular.
6. The vascular access device of claim 4, further comprising a plurality of side holes within a distal end of the catheter.
7. The vascular access device of claim 1, wherein the first lumen and the second lumen are side by side within the catheter adapter and the proximal portion.
8. The vascular access device of claim 1, further comprising a blood collection device coupled to the second connector, wherein the blood collection device comprises an instrument extending through the second lumen and out the opening or the valve.
9. The vascular access device of claim 1, further comprising a plurality of openings or a plurality of valves adjacent to the distal end of the second lumen, wherein the plurality of openings comprises the opening or the plurality of valves comprises the valve.
10. A vascular access device, comprising:
 - a first lumen, comprising a distal end and a proximal end;
 - a second lumen, comprising a distal end and a proximal end;
 - a third lumen, comprising a distal end and a proximal end, wherein the distal end of the second lumen is proximal to the distal end of the first lumen and the distal end of the third lumen;
 - an opening or a valve adjacent to the distal end of the second lumen;
 - a first connector disposed at the proximal end of the first lumen;

a second connector disposed at the proximal end of the second lumen; and
a third connector disposed at the proximal end of the third lumen.

11. The vascular access device of claim 10, wherein the first lumen, the second lumen, and the third lumen are side by side.

12. The vascular access device of claim 10, wherein the vascular access device comprises:

a catheter adapter, comprising a distal end, a proximal end, a first divider extending between the distal end of the catheter adapter and the proximal end of the catheter adapter, and a second divider extending between the distal end of the catheter adapter and the proximal end of the catheter adapter, wherein the first divider and the second divider separates the first lumen, the second lumen, and the third lumen within the catheter adapter;

a first extension tube extending from the proximal end of the catheter adapter to the first connector;

a second extension tube extending from the proximal end of the catheter adapter to the second connector;

a third extension tube extending from the proximal end of the catheter adapter to the third connector;

a catheter extending from the proximal end of the catheter adapter,

wherein the first extension tube and an entire length of the catheter comprise the first lumen;

wherein the second extension tube and a proximal portion of the catheter comprise the second lumen, wherein the first divider and the second divider extend through the proximal portion of the catheter;

wherein the third extension tube and an entire length of the catheter comprise the third lumen.

13. The vascular access device of claim 12, further comprising a plurality of holes within a distal end of the catheter.
14. The vascular access device of claim 10, further comprising a blood collection device coupled to the second connector, wherein the blood collection device comprises a tube extending through the second lumen and out the opening or the valve.
15. The vascular access device of claim 10, further comprising a plurality of openings or a plurality of valves adjacent to the distal end of the second lumen, wherein the plurality of openings comprises the opening or the plurality of valves comprises the valve.
16. A method, comprising:

inserting a vascular access device into a vasculature of a patient, wherein the vascular access device comprises:

a first lumen, comprising a distal end and a proximal end;

a second lumen, comprising a distal end and a proximal end, wherein the distal end of the second lumen is proximal to the distal end of the first lumen;

an opening or a valve adjacent to the distal end of the second lumen;

a first connector disposed at the proximal end of the first lumen; and

a second connector disposed at the proximal end of the second lumen;

collecting blood from the vasculature through the second lumen; and

infusing fluid into the vasculature through the first lumen at a same time as collecting the blood from the vasculature through the second lumen.

17. The method of claim 176, wherein the vascular access device comprises the valve adjacent to the distal end of the first lumen, wherein collecting the blood from the vasculature through the second lumen comprises coupling an evacuated blood collection container to the second connector, wherein in response to coupling the evacuated blood collection container to the second connector, the valve opens.
18. The method of claim 176, wherein collecting blood comprises coupling a blood collection device coupled to the second connector, wherein the blood collection device comprises a tube, wherein coupling the blood collection device to the second connector comprises inserting the tube through the second lumen and out the opening or the valve.
19. The method of claim 176, wherein the vascular device comprises:
- a third lumen, wherein the third lumen comprises a distal end and a proximal end, wherein the distal end of the second lumen is proximal to the distal end of the third lumen;
 - a third connector disposed at the proximal end of the third lumen,
 - further comprising infusing another fluid into the vasculature through the third lumen at a same time as infusing the fluid into the vasculature through the first lumen and collecting the blood from the vasculature through the second lumen.
20. The method of claim 176, wherein the vascular access device comprises:
- a catheter adapter, comprising a distal end, a proximal end, and a divider extending between the distal end of the catheter adapter and the proximal end of the catheter adapter, wherein the divider separates the first lumen and the second lumen within the catheter adapter;
 - a first extension tube extending from the proximal end of the catheter adapter to the first connector;

a second extension tube extending from the proximal end of the catheter adapter to the second connector; and

a catheter extending from the proximal end of the catheter adapter,

wherein the first extension tube and an entire length of the catheter comprise the first lumen;

wherein the second extension tube and a proximal portion of the catheter comprise the second lumen, wherein the divider extends through the proximal portion of the catheter.