

CLAIMS

1. ~~A catheter assembly, comprising:

a catheter adapter having a distal end, a proximal end, a lumen extending between the distal end and the proximal end, and a side port, wherein a central axis of a fluid path extending through the side port is disposed at an angle with respect to a longitudinal axis of the catheter adapter, wherein the angle is less than 45°.~~
2. ~~The catheter assembly of claim 1, wherein the angle is about 25°.~~
3. ~~The catheter assembly of claim 1, further comprising:

a wedge disposed within the lumen of the catheter adapter; and

an insert proximate the wedge, wherein the insert is configured to guide an instrument moving from the side port distally through the catheter adapter.~~
4. ~~The catheter assembly of claim 3, wherein the insert is constructed of a rigid or semi-rigid material.~~
5. ~~The catheter assembly of claim 3, wherein the wedge is constructed of metal.~~
6. ~~The catheter assembly of claim 3, wherein an inner surface of the wedge or the insert comprises a lubricant.~~
7. ~~The catheter assembly of claim 3, wherein the insert comprises a groove extending along an entire length of the insert, wherein the groove is aligned with the side port fluid path such that fluid may flow from the side port fluid path distally through the insert.~~
8. ~~The catheter assembly of claim 7, wherein the wedge comprises a mouth that includes a shape of a truncated cone, wherein a distal end of the insert comprises a tapered portion that contacts an inner surface of the mouth.~~

9. ~~The catheter assembly of claim 8, wherein the wedge further comprises a stem proximate the mouth, wherein a portion of the groove is disposed proximate the stem and aligned with a central axis of the stem, wherein an inner diameter of the portion of the groove is less than or equal to an inner diameter of the stem.~~
10. ~~The catheter assembly of claim 1, further comprising a septum disposed within the lumen of the catheter adapter, wherein the septum comprises a guide portion to direct movement of an instrument as the instrument is advanced distally from the side port through the catheter adapter.~~
11. ~~The catheter assembly of claim 1, further comprising a wedge comprising a groove proximate a tunnel, wherein the groove is aligned with the side port fluid path such that fluid may flow from the side port fluid path distally through the groove and into the tunnel.~~
12. ~~The catheter assembly of claim 1, further comprising a catheter extending distally from the catheter adapter, wherein a proximal end of the catheter is glued within a distal end of the catheter adapter.~~
13. ~~The catheter assembly of claim 1, further comprising a wedge disposed within the lumen of the catheter adapter, wherein the wedge is disposed within a distal end of the catheter adapter such that an instrument advanced distally from the side port through the catheter adapter contacts an inner surface of a body of the catheter adapter prior to contacting the wedge.~~
14. ~~The catheter assembly of claim 1, further comprising a wedge disposed within the lumen of the catheter adapter, wherein the wedge is disposed within a distal end of the catheter adapter such that an instrument advanced distally from the side port through the catheter~~

- ~~adapter contacts an inner surface of a body of the catheter adapter prior to contacting the wedge.~~
- ~~15. The catheter assembly of claim 1, further comprising a wedge disposed within the lumen of the catheter adapter, wherein the wedge comprises a mouth that includes a shape of a truncated cone, wherein the wedge further comprises a stem proximate the mouth, wherein the wedge is configured such that an instrument advanced distally from the side port through the catheter adapter contacts an inner surface of the stem without contacting an inner surface of the mouth.~~
- ~~16. The catheter assembly of claim 1, further comprising a wedge disposed within the lumen of the catheter adapter, wherein the wedge comprises a mouth that includes a shape of a truncated cone, wherein an inner surface of the mouth is angled between about 60° and about 90° with respect to the longitudinal axis, wherein an instrument advanced distally from the side port through the catheter adapter contacts an inner surface of a first side of the mouth closer to the side port without or prior to a side of the mouth opposite the first side.~~
- ~~17. The catheter assembly of claim 1, further comprising an instrument, wherein the instrument comprises a tube, further comprising a guidewire extending through the tube.~~
- ~~18. The catheter assembly of claim 1, further comprising a platform protruding from a bottom of the catheter adapter and configured to contact skin of a patient, wherein the platform is angled between about 3° and about 30° with respect to the longitudinal axis.~~
- ~~19. The catheter assembly of claim 1, wherein a bottom of the catheter adapter comprises a securement platform configured to contact skin of a patient, wherein the securement platform comprises a groove aligned with the longitudinal axis.~~

- ~~20. The catheter assembly of claim 19, wherein the groove extends through the securement platform.~~

CLAIMS

1. A catheter assembly, comprising:
a catheter adapter having a distal end, a proximal end, a lumen extending between the distal end and the proximal end, and a side port, wherein a central axis of a fluid path extending through the side port is disposed at an angle with respect to a longitudinal axis of the catheter adapter;
a septum disposed within the lumen of the catheter adapter;
a wedge disposed within the lumen of the catheter adapter and distal to the septum; and
an insert proximate the wedge, wherein the insert is configured to guide an instrument moving from the side port distally through the catheter adapter.
2. The catheter assembly of claim 1, wherein the angle is about 25°.
3. The catheter assembly of claim 1, wherein the insert is constructed of a rigid or semi-rigid material.
4. The catheter assembly of claim 1, wherein the wedge is constructed of metal.
5. The catheter assembly of claim 1, wherein an inner surface of the wedge or the insert comprises a lubricant.
6. The catheter assembly of claim 1, wherein the insert comprises a groove extending along an entire length of the insert and forming a side opening in the insert, wherein the groove is aligned with the side port fluid path such that fluid may flow from the side port fluid path distally through the insert.
7. The catheter assembly of claim 6, wherein the wedge comprises a mouth that includes a shape of a truncated cone, wherein a distal end of the insert comprises a tapered portion that contacts an inner surface of the mouth.

8. The catheter assembly of claim 7, wherein the wedge further comprises a stem proximate the mouth, wherein a portion of the groove is disposed proximate the stem and aligned with a central axis of the stem, wherein an inner diameter of the portion of the groove is less than or equal to an inner diameter of the stem.
9. The catheter assembly of claim 1, further comprising a catheter extending distally from the catheter adapter, wherein a proximal end of the catheter is glued within a distal end of the catheter adapter.
10. The catheter assembly of claim 1, wherein the wedge comprises a mouth that includes a shape of a truncated cone, wherein the wedge further comprises a stem proximate the mouth, wherein the wedge is configured such that the instrument advanced distally from the side port through the catheter adapter contacts an inner surface of the stem without contacting an inner surface of the mouth.
11. The catheter assembly of claim 1, wherein the wedge comprises a mouth that includes a shape of a truncated cone, wherein an inner surface of the mouth is angled between about 60° and about 90° with respect to the longitudinal axis, wherein the instrument advanced distally from the side port through the catheter adapter contacts an inner surface of a first side of the mouth closer to the side port without or prior to a side of the mouth opposite the first side.
12. The catheter assembly of claim 1, wherein the instrument comprises a tube, further comprising a guidewire extending through the tube.
13. The catheter assembly of claim 1, further comprising a platform protruding from a bottom of the catheter adapter and configured to contact skin of a patient, wherein the platform is angled between about 3° and about 30° with respect to the longitudinal axis.

14. The catheter assembly of claim 1, wherein a bottom of the catheter adapter comprises a securement platform configured to contact skin of a patient, wherein the securement platform comprises a groove aligned with the longitudinal axis.
15. The catheter assembly of claim 14, wherein the groove extends through the securement platform.
16. A catheter assembly, comprising:
a catheter adapter having a distal end, a proximal end, a lumen extending between the distal end and the proximal end, and a side port, wherein a central axis of a fluid path extending through the side port is disposed at an angle with respect to a longitudinal axis of the catheter adapter;
a wedge disposed within the lumen of the catheter adapter; and
a septum disposed within the lumen of the catheter adapter, wherein the septum comprises a guide portion to direct movement of an instrument as the instrument is advanced distally from the side port through the catheter adapter, wherein the guide portion comprises a smooth curve extending into the wedge.
17. A catheter assembly, comprising:
a catheter adapter having a distal end, a proximal end, a lumen extending between the distal end and the proximal end, and a side port, wherein a central axis of a fluid path extending through the side port is disposed at an angle with respect to a longitudinal axis of the catheter adapter; and
a wedge comprising a groove proximate a tunnel, wherein the groove forms a side opening in the wedge that is aligned with the side port fluid path such that a fluid may flow from the side port fluid path distally through the groove and into the tunnel.