CLAIMS

What is claimed is:

1. A catheter placement system, comprising:

a housing defining an interior cavity and configured to maintain a sterile environment therein;

a catheter defining a first lumen and including a first section, a second section, and a transition section disposed therebetween, one or both of the transition section and the second section disposed within the sterile environment defined by the housing;

a needle extending through a distal portion of the first lumen; and

a stiffening system including a first stylet defining a stylet lumen and extending distally into a proximal portion of the first lumen.

2. The catheter placement system according to claim 1, wherein the needle extends through a first side port of the catheter into the distal portion of the first lumen, a distal portion of the needle and a distal portion of the first section extending from a distal end of the housing.

3. The catheter placement system according to claim 2, further including a needle retraction assembly configured to withdraw the needle proximally from the first lumen and dispose the needle in an offset position from an axis of the first lumen within the interior cavity.

4. The catheter placement system according to any one of claims 2-3, further including a first guidewire advancement assembly configured to advance a first guidewire through the first side port of the catheter and through the distal portion of the first lumen.

5. The catheter placement system according to any one of claims 1-4, further including a second guidewire assembly including a scroll wheel actuator configured to rotate and advance a second guidewire through the first lumen.

6. The catheter placement system according to any one of claims 1-5, wherein the stiffening system includes a second stylet extending distally into a proximal portion of a second

lumen of the catheter, the second stylet including a stylet guidewire extending distally therefrom into the second section of the catheter.

7. The catheter placement system according to claim 6, wherein the second lumen communicates with a distal opening disposed in a sidewall of the second section, a distal portion of the stylet guidewire configured to selectively occlude the distal opening.

8. The catheter placement system according to any one of claims 1-7, further including a catheter advancement assembly configured to advance the catheter distally, and configured to separate a top half of the housing from a bottom half of the housing when advanced to a distal position.

9. The catheter placement system according to any one of claims 1-8, further including a manifold including a flushing hub in fluid communication with the stylet lumen, the manifold configured to support the stiffening system.

10. The catheter placement system according to any one of claims 1-9, further including a blood flash indicator disposed within the interior cavity and in fluid communication with a lumen of the needle.

11. A method of placing a catheter, comprising:

providing a catheter placement system having a housing defining a sterile environment and including a needle, a catheter defining a first catheter lumen, and a stiffening system including a stylet having a stylet lumen and in fluid communication with the first catheter lumen;

flushing the first catheter lumen by providing a fluid through the stylet lumen;

accessing a vasculature of a patient by creating an insertion site with the needle;

advancing a first section of the catheter through the insertion site;

withdrawing the needle from a lumen of the first section;

dilating the insertion site by advancing a transition section of the catheter through the insertion site;

advancing a second section of the catheter into the vasculature; and

withdrawing the stiffening system from the first catheter lumen.

12. The method according to claim 11, wherein the catheter includes the first section disposed at a distal end, the transition section extending proximally from the first section, a second section extending proximally from the transition section, a hub disposed at a proximal end of the second section and an extension set extending proximally from the hub, the extension set including a first extension leg in fluid communication with the first catheter lumen.

13. The method according to any one of claims 11-12, further including advancing one of a first guidewire or a second guidewire through a portion of the first lumen into a vasculature of a patient.

14. The method according to any one of claims 11-13, wherein advancing the second section of the catheter into the vasculature further includes separating a top half of the housing from a bottom half of the housing.

15. The method according to claim 14, further including disengaging the catheter from the catheter placement system by urging the catheter between the top half of the housing and the bottom half of the housing.

16. The method according to any one of claims 11-15, further including a manifold having a flushing hub and configured to provide fluid communication between the flushing hub and the stylet lumen.

17. The method according to claim 16, further including sliding the manifold proximally relative to the housing to withdraw the stiffening system from the first catheter lumen.

18. The method according to any one of claims 11-17, further including actuating a blood flash actuator to provide fluid communication between a lumen of the needle and an interior cavity of a blood flash indicator.

19. The method according to claim 18, further including a vacuum disposed within the interior cavity of the blood flash indicator to draw a fluid flow proximally through the needle lumen.