CLAIMS

1. A catheter system, comprising:

a catheter adapter, comprising a distal end, a proximal end, and an internal wall forming a lumen extending through the distal end of the catheter adapter and the proximal end of the catheter adapter; and

a needle shield device coupled to the catheter adapter, the needle shield device comprising:

a needle housing, comprising:

an elongated body having a distal end, a proximal end, and a slot disposed between the distal end of the elongated body and the proximal end of the elongated body; and

a nose portion coupled to the distal end of the elongated body, wherein the nose portion comprises a plate and an extension, wherein the extension is inserted into the catheter adapter, wherein the extension comprises a cylindrical shape extending distally from the plate to a distal end of the extension, wherein the extension further comprises two protrusions on opposite ends of the cylindrical shape and spaced apart from the plate and the distal end of the cylindrical shape, wherein each of the two protrusions contacts a portion of the internal wall of the catheter adapter, wherein when the needle housing is disconnected from the catheter adapter, a maximum outer diameter of the extension is disposed at the two protrusions and is greater than an inner diameter of the portion of the internal wall of the catheter adapter contacting the two protrusions such that the extension is disposed within the catheter adapter in an interference fit when the needle housing is coupled to the catheter adapter,

wherein a surface of the portion of the internal wall of the catheter adapter contacting the two protrusions and extending through the proximal end of the catheter adapter is smooth;

a needle assembly slidably coupled to the needle housing, comprising:

an introducer needle comprising a sharp distal tip and a proximal end;

a needle grip; and

a needle hub having a protuberance, wherein the proximal end of the introducer needle is secured within the needle hub, wherein the protuberance is coupled to the needle grip, wherein the protuberance slidably fits within the slot, wherein the grip partially surrounds the needle housing such that the needle hub and the needle housing are configured to slide relative to one another, wherein the needle assembly is moveable between a distal position and a proximal position with respect to the needle housing, wherein in response to movement of the needle assembly to the proximal position, the sharp distal tip is disposed within the needle housing.

2. The catheter system of claim 1, wherein the nose portion comprises a plurality of capillary tubes, wherein each of the capillary tubes comprises a distal opening proximate a distal opening of a needle port extending through the nose portion such that blood that exits the distal end of the needle port is collected within the capillary tubes to thereby prevent the blood from exiting the nose portion.

3. The catheter system of claim 1, wherein the nose portion comprises a plurality of distally-extending arms, wherein the distally-extending arms and the proximal end of the catheter adapter are engaged in an interference fit.

4. The catheter system of claim 1, wherein the needle grip comprises a C-shaped cross-section.

5. A catheter system, comprising:

a catheter adapter, comprising a distal end, a proximal end, and an internal wall forming a lumen extending through the distal end of the catheter adapter and the proximal end of the catheter adapter; and

a needle shield device couple to the catheter adapter, the needle shield device comprising:

a needle housing, comprising:

an elongated body having a distal end, a proximal end, and a slot disposed between the distal end of the elongated body and the proximal end of the elongated body; and

a nose portion coupled to the distal end of the elongated body and extending into the lumen of the catheter adapter, wherein the nose portion comprises a plate and an extension extending distally from the plate, wherein the plate covers the distal end of the elongated body and is proximate the slot;

a needle assembly slidably coupled to the needle housing, comprising:

an introducer needle comprising a sharp distal tip and a proximal end;

a needle grip; and

a needle hub having a protuberance, wherein the proximal end of the introducer needle is secured within the needle hub, wherein the protuberance is

coupled to the needle grip, wherein the protuberance slidably fits within the slot, wherein the needle grip partially surrounds the needle housing such that the needle hub and the needle housing are configured to slide relative to one another, wherein the needle assembly is moveable between a distal position and a proximal position with respect to the needle housing, wherein in response to movement of the needle assembly to the proximal position, the sharp distal tip is disposed within the needle housing,

wherein the needle shield device comprises a flexible arm coupled to the proximal end of the catheter adapter, wherein the flexible arm extends from the needle grip, wherein the nose portion comprises a tab extending from the plate, wherein the tab is radially opposite the flexible arm with respect to a longitudinal axis of the catheter system, wherein in response to depression of the tab, the plate is configured to contact the flexible arm opposite the tab such that the flexible arm is released from the proximal end of the catheter adapter.

6. The needle shield device of claim 5, wherein the tab extends further from a longitudinal axis of the catheter system than a distal end of the needle grip and the proximal end of the catheter adapter to facilitate access of the tab by a user.