WHAT IS CLAIMED IS:

1. A medical device comprising:

a first cap detachably coupled to a second cap, wherein each cap comprises:

a cavity;

an outer surface configured to interface with a user;

an inner surface within the cavity; and

a foam applicator material attached to the inner surface within the cavity containing a cleansing, antiseptic or antimicrobial agent.

2. The medical device as recited in claim 1, wherein the foam applicator material comprises a shape substantially similar to a shape of each cavity of each cap.

3. The medical device as recited in claim 1, wherein the foam applicator material of at least one cap is maintained in a compressed state while the first and second caps are coupled and the foam applicator material of at least one cap is configured to extend outside the cavity when the first cap is detached from the second cap.

4. The medical device as recited in claim 1, wherein the foam applicator material comprises a permeable material with different surface treatments, finishes, contours, or combinations thereof.

5. The medical device as recited in claim 1, wherein the first and second cap comprise starch polymer, cellulosic gel, polyurethane, silicon, silicon rubber, polyethylene, polypropylene, thermoplastic elastomer or mixtures thereof.

6. The medical device as recited in claim 1, wherein the first and second cap comprise polypropylene, polyethylene, copolymer material or mixtures thereof.

7. The medical device as recited in claim 1, wherein the first and second cap are coupled by at least one of a thread, a snap fit flange, a snap fit channel, a molded feature or combination thereof.

8. The medical device as recited in claim 1, wherein the foam applicator material of the first cap comprises a cleansing, antiseptic or antimicrobial agent different from a cleansing, antiseptic or antimicrobial in the second cap.

9. The medical device as recited in claim 1, wherein the antiseptic or antimicrobial agent comprises:

about 5 to about 50 mg/ml of ethylenediaminetetraacetic acid (EDTA);

at most about 70% ethanol, by volume;

at most about 7.5% hydrogen peroxide, by volume; and

water.

10. A method comprising:

obtaining a device comprising a first cap detachably coupled to a second cap, wherein the first cap and the second cap each comprise an interior cavity for storing an applicator and the applicator of at least one of the first cap and second cap comprises a cleansing, antiseptic or antimicrobial agent;

detaching the first cap from the second cap;

applying the applicator of the first cap to a surface; and

securing the second cap to the surface.

11. The method as recited in claim 10, wherein the applicator of the first cap is configured to extend outside the interior cavity when the first cap is detached from the second cap.

12. The method as recited in claim 10, wherein the surface is at least one of an intravascular line valve, intravascular line port, or an intravascular line injection site.

13. The method as recited in claim 10, wherein detaching the first cap from the second cap further comprises at least one of twisting, pulling, snapping or bending the first cap away from the second cap.

14. The method as recited in claim 10, wherein the applicator of the second cap further comprises an open-cell inner layer configured to store the cleansing,

antiseptic or antimicrobial agent, the open-cell inner layer connecting two closed-cell outer layers at a top and a bottom of the applicator.

15. The method as recited in claim 10, wherein the antiseptic or antimicrobial agent comprises:

about 5 to about 50 mg/ml of ethylenediaminetetraacetic acid (EDTA);

at most about 70% ethanol, by volume;

at most about 7.5% hydrogen peroxide, by volume; and

water.

16. A medical device for protecting a multiple use vial from contamination comprising:

a cap having a cylindrical cavity, the cap having an outer surface configured to interface with a user and an inner surface within the cylindrical cavity to interface with the vial;

a foam insert contained within the cylindrical cavity of the cap, the foam insert having an inner open-cell porous layer between two outer closed-cell non-porous layers; and

an infection inhibiting solution disposed within the inner open-cell porous layer.

17. The medical device of claim 16, wherein the inner surface of the cylindrical cavity of the cap comprises one of a tapered stepped surface, a tapered smooth

surface, a stepped surface, a snap fit flange, threads or internal slits to allow for attachment of the cap to the multiple use vial.

18. The medical device of claim 16, wherein the outer surface of the cap includes a labeling or barcode placement area.

19. The medical device of claim 16, wherein the outer closed-cell non-porous layers of the foam has different surface treatments, finishes, contours, or combinations thereof..

20. The medical device of claim 16, wherein the infection inhibiting solution disposed within the inner open-cell porous layer comprises:

about 5 to about 50 mg/ml of ethylenediaminetetraacetic acid (EDTA);

at most about 70% ethanol, by volume;

at most about 7.5% hydrogen peroxide, by volume;

and water.

CLAIMS

1. A medical device comprising:

a first cap detachably coupled to a second cap, wherein each cap comprises:

a cavity;

an outer surface configured to interface with a user;

an inner surface within the cavity; and

a foam applicator material attached to the inner surface within the cavity containing a cleansing, antiseptic or antimicrobial agent comprising:

from about 5 mg/mL to about 50 mg/mL of ethylenediaminetetraacetic acid (EDTA), acids of EDTA, salts of EDTA, citrate, salts of citrate or any combination thereof;

from about 20% to about 70% ethanol, by volume;

from about 0.5% to about 7.5% hydrogen peroxide, by volume; and

water.

2. The medical device as recited in claim 1, wherein the foam applicator material comprises a shape substantially similar to a shape of each cavity of each cap.

3. The medical device as recited in claim 1, wherein the foam applicator material of at least one cap is maintained in a compressed state while the first and second caps are coupled and the foam applicator material of at least one cap is configured to extend outside the cavity when the first cap is detached from the second cap.

4. The medical device as recited in claim 1, wherein the foam applicator material

comprises a permeable material with different surface treatments, finishes, contours, or combinations thereof.

5. The medical device as recited in claim 1, wherein the first and second cap comprise starch polymer, cellulosic gel, polyurethane, silicone, silicone rubber, polyethylene, polypropylene, thermoplastic elastomer or mixtures thereof.

6. The medical device as recited in claim 1, wherein the first and second cap comprise polypropylene, polyethylene, copolymer material or mixtures thereof.

7. The medical device as recited in claim 1, wherein the first and second cap are coupled by at least one of a thread, a snap fit flange, a snap fit channel, a molded feature or combination thereof.

8. The medical device as recited in claim 1, wherein the foam applicator material of the first cap comprises a cleansing, antiseptic or antimicrobial agent different from a cleansing, antiseptic or antimicrobial in the second cap.

9. A method comprising:

obtaining a device comprising a first cap detachably coupled to a second cap, wherein the first cap and the second cap each comprise an interior cavity for storing an applicator and the applicator of at least one of the first cap and second cap comprises a cleansing, antiseptic or antimicrobial agent comprising:

from about 5 mg/mL to about 50 mg/ml of ethylenediaminetetraacetic acid (EDTA), acids of EDTA, salts of EDTA, citrate, salts of citrate or any combination thereof;

from about 20% to about 70% ethanol, by volume;

from about 0.5% to about 7.5% hydrogen peroxide, by volume; and

water;

detaching the first cap from the second cap;

applying the applicator of the first cap to a surface; and

securing the second cap to the surface.

10. The method as recited in claim 9, wherein the applicator of the first cap is configured to extend outside the interior cavity when the first cap is detached from the second cap.

11. The method as recited in claim 9, wherein the surface is at least one of an intravascular line valve, intravascular line port, or an intravascular line injection site.

12. The method as recited in claim 9, wherein detaching the first cap from the second cap further comprises at least one of twisting, pulling, snapping or bending the first cap away from the second cap.

13. The method as recited in claim 9, wherein the applicator of the second cap further comprises an open-cell inner layer configured to store the cleansing, antiseptic or antimicrobial agent, the open-cell inner layer connecting two closed-cell outer layers at a top and a bottom of the applicator.

14. The method as recited in claim 9, wherein the antiseptic or antimicrobial agent is a gel.

15. A medical device for protecting a multiple use vial from contamination comprising:

a cap having a cylindrical cavity, the cap having an outer surface configured to interface with a user and an inner surface within the cylindrical cavity to interface with the vial;

a foam insert contained within the cylindrical cavity of the cap, the foam insert having an inner open-cell porous layer between two outer closed-cell non-porous layers; and

an infection inhibiting solution disposed within the inner open-cell porous layer, the infection inhibiting solution comprises:

from about 5 mg/mL to about 50 mg/ml of ethylenediaminetetraacetic acid (EDTA), acids of EDTA, salts of EDTA, citrate, salts of citrate or any combination thereof;

from about 20% to about 70% ethanol, by volume;

from about 0.5% to about 7.5% hydrogen peroxide, by volume; and

water.

16. The medical device of claim 15, wherein the inner surface of the cylindrical cavity of the cap comprises one of a tapered stepped surface, a stepped surface, a snap fit flange, threads or internal slits to allow for attachment of the cap to the multiple use vial.

17. The medical device of claim 15, wherein the outer surface of the cap includes a labeling or barcode placement area.

18. The medical device of claim 15, wherein at least one of the outer closed-cell non-porous layers of the foam has a surface treatment, finish, contour, or combination thereof.

19. The medical device of claim 15, wherein the infection inhibiting solution disposed within the inner open-cell porous layer provides a visual indication of contamination when an infectious agent is present on a surface of the multiple use vial.