[0004a] According to one aspect, there is provided a medical package assembly, the package assembly comprising: a drug reconstitution assembly including: a housing forming at least one aperture, a container placed at least partially within an interior of the housing, and a spike assembly arranged within the housing so as to be able to spike the container; and a body shaped to house the drug reconstitution assembly, the body including at least one protrusion extending through the aperture and into the interior of the housing, wherein the at least one protrusion is positioned and arranged to prevent movement of the container toward the spike assembly prior to the container reaching an undesirable displacement relative to the spike assembly.

[0004b] According to another aspect, there is provided a drug delivery product comprising: a drug reconstitution assembly including a housing and a container placed within the housing; and a package including a body shaped to house the drug reconstitution assembly and at least one protrusion extending from the body, the at least one protrusion positioned and arranged to engage the housing and the container to inhibit axial translation of the container relative to the housing, wherein the container is a first container and which includes a second container placed within the housing, the protrusion a first protrusion, the body including a second protrusion positioned and arranged to engage with the housing to inhibit axial translation of the second container relative to the housing.

[0004c] According to a further aspect, there is provided a method of packaging a drug reconstitution assembly, comprising: providing a package with a removable lid and a body configured to house the drug reconstitution assembly, including at least one protrusion extending from the body; providing the drug reconstitution assembly with a housing having at least one aperture, and a container placed at least partially within the housing, wherein a neck portion of the container aligns with at least one of the apertures of the housing; assembling the drug reconstitution assembly within the body of the package, such that the at least one protrusion of the body extends through at least one of the apertures of the housing, wherein an orientation of the drug reconstitution assembly within the package is limited to a predetermined number of orientations; and sealing the drug reconstitution assembly within the body (14) of the package with the removable lid.

CLAIMS

The invention is claimed as follows:

1. A medical package assembly ~~(10)~~, the package assembly ~~(10)~~ comprising:

a drug reconstitution assembly ~~(100)~~ including:

(i) a housing ~~(110)~~ forming at least one aperture ~~(116, 118)~~,

(ii) a container ~~(120, 130)~~ placed at least partially within an interior of the housing ~~(110)~~, and

(iii) a spike assembly ~~(200)~~ arranged within the housing so as to be able to spike the container ~~(120, 130)~~; and

a body ~~(14)~~ shaped to house the drug reconstitution assembly ~~(100)~~, the body ~~(14)~~ including at least one protrusion ~~(16, 18)~~ extending through the aperture ~~(116, 118)~~ and into the interior of the housing ~~(110)~~, wherein the at least one protrusion ~~(16, 18)~~ is positioned and arranged to prevent movement of the container ~~(120, 130)~~ toward the spike assembly ~~(200)~~ prior to the container ~~(120, 130)~~ reaching an undesirable displacement relative to the spike assembly ~~(200)~~.

2. The medical package assembly ~~(10)~~ of Claim 1, which includes a lid ~~(12)~~ attached to the body ~~(14)~~ and configured to sealingly enclose the drug reconstitution assembly ~~(100)~~ within the body ~~(14)~~.

3. The medical package assembly ~~(10)~~ of Claim 2, wherein the lid ~~(12)~~ is attached to the body ~~(14)~~ with heat-activated adhesive.

4. The medical package assembly ~~(10)~~ of Claim 2, wherein the at least one protrusion ~~(16, 18)~~ is configured to prevent axial translation of the container ~~(120, 130)~~ relative to the housing ~~(110)~~.

5. The medical package assembly ~~(10)~~ of Claim 1, wherein the at least one protrusion ~~(16, 18)~~ further prevents rotation of the drug reconstitution assembly ~~(100)~~ within the body ~~(14)~~.

6. The medical package assembly ~~(10)~~ of Claim 1, wherein the body ~~(14)~~ is structured with at least one flat surface so as to prevent rolling of the body ~~(14)~~.

7. The medical package assembly ~~(10)~~ of Claim 1, wherein the drug reconstitution assembly ~~(100)~~ includes a syringe port plug ~~(140)~~ and the body includes a cavity ~~(20c)~~ shaped to mate with the syringe port plug ~~(140)~~ of the drug reconstitution assembly ~~(100)~~.

8. The medical package assembly ~~(10)~~ of Claim 1, wherein the container ~~(120, 130)~~ is a first container ~~(120)~~, and which includes a second container ~~(130)~~ placed at least partially within the housing ~~(110)~~ of the drug reconstitution assembly ~~(100)~~, the housing ~~(110)~~ forming at least one second aperture ~~(118)~~ wherein the at least one protrusion ~~(16, 18)~~ is a first protrusion ~~(16)~~ and which includes a second protrusion ~~(18)~~, the second protrusion ~~(18)~~ positioned and arranged to extend through the second aperture ~~(118)~~ and into the interior of the housing ~~(110)~~ and prevent movement of the second container ~~(130)~~ toward the spike assembly ~~(200)~~ prior to the second container ~~(130)~~ reaching an undesirable displacement relative to the spike assembly ~~(200)~~.

9. The medical package assembly ~~(10)~~ of Claim 1, wherein the container ~~(120, 130)~~ is a first vial ~~(120)~~ including a neck ~~(122a)~~ and a shoulder ~~(122b)~~, the first vial ~~(120)~~ arranged relative to the housing ~~(110)~~ to align at least a portion of the neck ~~(122a)~~ of the first vial ~~(120)~~ with the first at least one aperture ~~(116)~~, the first at least one protrusion ~~(16)~~ configured to extend toward the neck ~~(122a)~~ and engage the shoulder ~~(122b)~~ prior to the first vial ~~(120)~~ reaching an undesirable displacement relative to the spike assembly ~~(200)~~.

10. The medical package assembly ~~(10)~~ of Claim 9, wherein the container ~~(120, 130)~~ is a first container ~~(120)~~, and including a second container ~~(130)~~ placed at least partially within the housing ~~(110)~~ of the drug reconstitution assembly ~~(100)~~ and the second container ~~(130)~~ is a vial including a neck ~~(132a)~~ and a shoulder ~~(132b)~~, the housing ~~(110)~~ forming at least one second aperture ~~(118a)~~, the second container ~~(130)~~ arranged relative to the housing ~~(110)~~ to align at least a portion of the neck ~~(132a)~~ of the second container ~~(130)~~ with the at least one second aperture ~~(118)~~ wherein the at least one protrusion ~~(16, 18)~~ is a first protrusion ~~(16)~~ and the body ~~(14)~~ forming a second protrusion ~~(18)~~, the second protrusion ~~(18)~~ positioned and arranged to extend through the second aperture ~~(118)~~ and into the interior of the housing toward the neck ~~(132a)~~ of the second container ~~(130)~~ and engage the shoulder

(132b) of the second container (130) prior to the second container (130) reaching an undesirable displacement relative to the spike assembly (200).

11. A drug delivery product (10) comprising:

a drug reconstitution assembly (100) including a housing (110) and a container (120, 130) placed within the housing (110); and

a package including a body (14) shaped to house the drug reconstitution assembly (100) and at least one protrusion (16, 18) extending from the body (14), the at least one protrusion (16, 18) positioned and arranged to engage the housing (110) and the container (120, 130) to inhibit axial translation of the container (120, 130) relative to the housing (110),

wherein the container (120, 130) is a first container (120) and which includes a second container (130) placed within the housing (110), the protrusion (16, 18) a first protrusion (16), the body (14) including a second protrusion (18) positioned and arranged to engage with the housing (110) to inhibit axial translation of the second container (130) relative to the housing (14).

12. The drug delivery product (10) of Claim 11, wherein the first protrusion (16) engages the housing (110) at a first location adjacent the first container (120) and the second protrusion (18) engages the housing (110) at a second location adjacent the second container (130).

13. The drug delivery product (10) of Claim 11, wherein the first and second engagements include the first and second protrusions (16, 18) extending through first and second apertures (116, 118), respectively, of the housing (110).

14. The drug delivery product (10) of Claim 13, wherein at least one of: (i) the first aperture (116) is one of a plurality of first apertures (116) spaced radially about the housing (110) or (ii) the second aperture (118) is one of a plurality of second apertures (118) spaced radially about the housing (110).

15. The drug delivery product (10) of Claim 13, wherein the first and second protrusions (16, 18) extending through the first and second apertures (116, 118) further inhibit rotational movement of the housing (110) relative to the body (14).

16. The drug delivery product ~~(10)~~ of Claim 11, wherein the first and second containers ~~(120, 130)~~ are accessed by a transfer set assembly ~~(130)~~, the transfer set assembly ~~(130)~~ including a port accessible by a user, the body ~~(14)~~ including a well ~~(20e)~~ positioned and arranged to engage the port, or a plug ~~(140)~~ plugging the port, to inhibit axial movement of the housing ~~(110)~~.

17. The drug delivery product ~~(10)~~ of Claim 11, wherein the engagement of the drug reconstitution assembly ~~(100)~~ by the at least one protrusion ~~(16, 18)~~ also inhibits rotational movement of the housing ~~(110)~~ relative to the body ~~(14)~~.

18. The drug delivery product ~~(10)~~ of Claim 11, wherein the engagement of the drug reconstitution assembly ~~(100)~~ by the at least one protrusion ~~(16, 18)~~ also inhibits axial movement of the housing ~~(110)~~ relative to the body ~~(14)~~.

19. A method of packaging a drug reconstitution assembly ~~(100)~~, comprising:

providing a package with a removable lid ~~(12)~~ and a body ~~(14)~~ configured to house the drug reconstitution assembly ~~(100)~~, including at least one protrusion ~~(16, 18)~~ extending from the body ~~(14)~~;

providing the drug reconstitution assembly ~~(100)~~ with a housing ~~(110)~~ having at least one aperture ~~(116, 118)~~, and a container ~~(120, 130)~~ placed at least partially within the housing ~~(110)~~, wherein a neck portion ~~(122a, 132a)~~ of the container ~~(120, 130)~~ aligns with at least one of the apertures ~~(116, 118)~~ of the housing ~~(110)~~;

assembling the drug reconstitution assembly ~~(100)~~ within the body ~~(14)~~ of the package, such that the at least one protrusion ~~(16, 18)~~ of the body ~~(14)~~ extends through at least one of the apertures ~~(116, 118)~~ of the housing, wherein an orientation of the drug reconstitution assembly ~~(100)~~ within the package is limited to a predetermined number of orientations; and

sealing the drug reconstitution assembly ~~(100)~~ within the body ~~(14)~~ of the package with the removable lid ~~(12)~~.