CLAIMS

1. A storage device configured to connect to a delivery system for delivering a therapeutic or diagnostic agent, the storage device comprising:

a housing having a chamber defined therein;

a vessel positioned within the chamber, the vessel having a distal end opposite a proximal end with an interior defined therebetween and configured for receiving the therapeutic or diagnostic agent, the proximal end having an access port for accessing the interior;

a door associated with the housing, the door movable relative to the housing between a closed position and an open position, wherein, in the closed position, the door covers an opening in the housing to enclose the chamber of the housing, and wherein, in the open position, the door reveals the opening in the housing for accessing the access port of the vessel; and

a holder within the chamber of the housing and in contact with the vessel to fix the vessel relative to the housing such that the access port of the vessel is positioned at the opening in the housing;

wherein the door is moveable between the closed position and the open position in response to actuation by an access mechanism of the delivery system.

2. The storage device according to claim 1, wherein the holder comprises a contact element for contacting the distal end of the vessel and a plurality of tabs connected to the contact element and configured to engage an inner surface of the housing to fix the distal end of the vessel relative to the housing.

3. The storage device according to claim 1, further comprising a plurality of ribs within the chamber of the housing and surrounding the opening, wherein the plurality of ribs are configured for fixing the proximal end of the vessel relative to the housing.

4. The storage device according to claim 1, further comprising a lock for locking the door in one of the open position and the closed position.

5. The storage device according to claim 1, further comprising a door cover connected to the housing, wherein the door cover encloses the door within a door chamber.

6. The storage device according to claim 5, wherein the door cover comprises a door access opening having a seal, and a vessel access opening positioned opposite the opening in the housing.

7. The storage device according to claim 6, wherein the seal is pierceable by the access mechanism of the delivery system.

8. The storage device according to claim 1, further comprising a label or a tag on the housing that contains machine readable authenticatable data that includes at least one of product information, production information, prescription information, and shipping conditions information.

9. The storage device according to claim 1, wherein the opening in the housing is configured to receive a vessel access member extending into the access port for accessing the therapeutic or diagnostic agent contained in the vessel when the door is in the open position.

10. The storage device according to claim 1, wherein the therapeutic or diagnostic agent is a radiopharmaceutical, and wherein the housing comprises shielding configured to prevent radiation from the radiopharmaceutical from being emitted out of the housing.

11. An assembly configured to connect to a delivery system for delivering a therapeutic or diagnostic agent, the assembly comprising:

a storage device containing the therapeutic or diagnostic agent; and

a fluid cassette fluidly connectable to the storage device for accessing the therapeutic or diagnostic agent,

wherein the storage device comprises:

a housing having a chamber defined therein;

a vessel positioned within the chamber, the vessel having an interior configured for receiving the therapeutic or diagnostic agent and an access port for accessing the interior; and

a door associated with the housing, the door movable relative to the housing between a closed position and an open position, wherein, in the closed position, the door covers an opening in the housing to enclose the chamber of the housing, and wherein, in the open position, the door reveals the opening in the housing for accessing the access port of the vessel,

wherein the fluid cassette comprises:

a vessel access member, a metering device, and a fluid path set fluidly connecting the vessel access member to the metering device; and

an enclosure enclosing the vessel access member, the metering device, and the fluid path set, and

wherein the storage device and the fluid cassette are configured to connect to the delivery system such that the door of the storage device is accessible by an access mechanism of the delivery system and such that the vessel access member and the metering device of the fluid cassette are accessible by a delivery mechanism of the delivery system.

12. The assembly according to claim 11, wherein the vessel access member of the fluid cassette is insertable into the access port of the vessel when the door is moved to the open position to fluidly connect the metering device to the vessel via the fluid path set.

13. The assembly according to claim 11, wherein the fluid path set comprises one or more valves operable by the delivery mechanism of the delivery system for regulating fluid flow through the fluid path set.

14. The assembly according to claim 11, wherein the fluid cassette is connectable to a saline source.

15. The assembly according to claim 11, wherein the storage device comprises a guide mechanism configured for positioning the storage device in a desired orientation relative to the fluid cassette.

16. The assembly according to claim 15, wherein the guide mechanism comprises one or more geometric features on the storage device, and wherein the one or more geometric features are configured to mate with corresponding one or more geometric features on the fluid cassette.

17. The assembly according to claim 11, wherein an outlet of the metering device of the fluid cassette is configured to connect to an infusion set for delivering a dose of the therapeutic or diagnostic agent from the vessel to the infusion set.

18. The assembly according to claim 11, further comprising a label or a tag on the housing that contains machine readable authenticatable data that includes at least one of product information, production information, prescription information, and shipping conditions information.

19. The assembly according to claim 11, wherein the therapeutic or diagnostic agent is a radiopharmaceutical, and wherein the housing comprises shielding configured to prevent radiation from the radiopharmaceutical from being emitted out of the housing.

20. A delivery system for delivering a therapeutic or diagnostic agent, the delivery system comprising:

an injector having a delivery mechanism and an access mechanism; and

a fluid delivery assembly removably connectable to the injector, the fluid delivery assembly comprising:

a storage device containing the therapeutic or diagnostic agent; and

a fluid cassette fluidly connectable to the storage device for accessing the therapeutic or diagnostic agent,

wherein the storage device comprises:

a housing having a chamber defined therein;

a vessel positioned within the chamber, the vessel having an interior configured for receiving the therapeutic or diagnostic agent and an access port for accessing the interior; and

a door associated with the housing, the door movable relative to the housing via the access mechanism of the injector between a closed position and an open position, wherein, in the closed position, the door covers an opening in the housing to enclose the chamber of the housing, and wherein, in the open position, the door reveals the opening in the housing for accessing the access port of the vessel,

wherein the fluid cassette comprises:

a vessel access member, a metering device, and a fluid path set fluidly connecting the vessel access member to the metering device; and

an enclosure enclosing the vessel access member, the metering device, and the fluid path set, and

wherein the vessel access member and the metering device of the fluid cassette are accessible by the delivery mechanism of the injector for fluidly connecting the interior of the vessel with the metering device via the fluid path set.

21. The delivery system according to claim 20, further comprising an injector controller configured to determine a dose of the therapeutic or diagnostic agent to be drawn from the vessel into the metering device based on machine readable authenticatable data on the storage device.

22. The delivery system according to claim 21, wherein the injector controller is further configured to determine the dose of the therapeutic or diagnostic agent to be drawn from the vessel into the metering device based on at least one patient parameter.

23. The delivery system according to claim 22, wherein the injector controller is configured to be connected to a hospital network system.

24. The delivery system according to claim 22, wherein the injector controller comprises a plurality of dosing algorithms for different pre-defined therapies or diagnostic procedures.

25. The delivery system according to claim 20, wherein the fluid path set comprises one or more valves operable by the delivery mechanism of the delivery system for regulating fluid flow through the fluid path set.

26. The delivery system according to claim 20, wherein the fluid cassette is connectable to a saline source.

27. The delivery system according to claim 20, wherein an outlet of the metering device of the fluid cassette is configured to connect to an infusion set for delivering a dose of the therapeutic or diagnostic agent from the vessel to the infusion set.

28. The delivery system according to claim 20, wherein the storage device is configured to be removably or non-removably connectable to the fluid cassette.

29. The delivery system according to claim 20, further comprising a label or a tag on the housing that contains machine readable authenticatable data that includes at least one of product information, production information, prescription information, and shipping conditions information.

30. The delivery system according to claim 20, wherein the therapeutic or diagnostic agent is a radiopharmaceutical, and wherein the housing comprises shielding configured to prevent radiation from the radiopharmaceutical from being emitted out of the housing.