

SUMMARY

[0003] Certain examples provide apparatuses, computer-readable storage media and methods for tracking and management of a distributed ledger including information for a batch of radiopharmaceutical material.

[0004] Certain examples provide a distribution monitoring processor apparatus including a data storage to store instructions for execution and a first copy of a distributed ledger; a data communication interface to receive and transmit data; a material status monitor to track a status of a batch of radiopharmaceutical material, the material status monitor to receive an indication of a type, a quantity, and a timestamp associated with the batch of radiopharmaceutical material via the data communication interface; and a ledger record processor to generate and update a record in the first copy of the distributed ledger using the indication of type, quantity, and timestamp associated with the batch of radiopharmaceutical material from the material status monitor, the ledger record processor to add a transaction to the record to track when and what quantity of the batch of radiopharmaceutical material is sold and resold.

[0005] Certain examples provide a computer-readable storage medium including instructions which, when executed, cause at least one processor to at least: track a status of a batch of radiopharmaceutical material, the status to include a type, a quantity, and a timestamp associated with the batch of radiopharmaceutical material; generate a record in a first copy of a distributed ledger using the type, quantity, and timestamp associated with the batch of radiopharmaceutical material; update the record based on at least one of usage of the batch of radiopharmaceutical material, resale of at least a portion of the batch of radiopharmaceutical material, and decay of the batch of radiopharmaceutical material; and share the record with a second copy of the distributed ledger.

[0006] Certain examples provide a computer-implemented method of managing radiopharmaceutical material. The example method includes tracking, using at least one processor, a status of a batch of radiopharmaceutical material, the status to include a type, a quantity, and a timestamp associated with the batch of radiopharmaceutical material. The example method includes generating, using the at least one processor, a record in a first copy of a distributed ledger using the type, quantity, and timestamp associated with the batch of radiopharmaceutical material. The example method includes updating, using the at least one processor, the record based on at least one of usage of the batch of radiopharmaceutical material, resale of at least a portion of the batch of radiopharmaceutical material, and decay of the batch of radiopharmaceutical material. The example method includes sharing, using the at least one processor, the record with a second copy of the distributed ledger.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] FIG. 1 illustrates an example distributed ledger.

[0008] FIG. 2 illustrates an example apparatus including a generator to produce radiopharmaceutical material and a distribution monitoring processor to generate records for production of the radiopharmaceutical material and track its usage and useful life.

[0009] FIG. 3 illustrates an example distributed ledger including records corresponding to batches of a radioimaging agent produced by the generator of FIG. 2.

[0010] FIG. 4 illustrates an example implementation of the system of FIG. 2 including a plurality of customer subsystems in communication with the distribution monitoring processor, the remote server, and the generator of the example of FIG. 2.