opening. The pill-dispensing mechanism is disposed within the housing and is configured to dispense a pill. The pill viewing location is operatively coupled to the pill-dispensing mechanism. The first pill-viewing camera is positioned to capture an image of the pill viewing location. The second pill-viewing camera is positioned to capture an image of the pill through a transparent window associated with the pill viewing location. The one or more processors are in operative communication with the pill-dispensing mechanism and the first pill-viewing camera. The storage medium for storing processor-executable instructions is configured for execution by the one or more processors to cause the one or more processors to: instruct the pill-dispensing mechanism to dispense a pill to the pill viewing area; instruct the first pill-viewing camera to capture a first image of the pill; instruct the second pill-viewing camera to capture a second image of the pill; and identify the pill using the first and second images.

[0074] The one or more processors may identify the pill using one or more of a color of the pill, a shape of the pill, characters on the pill, and a plurality of colors of the pill as determined using the first and fourth images.

[0075] The pill viewing area may be external to the housing or internal to the housing. The instructions may cause the one or more processors to dispense the pill to a pill holding area outside of the housing.

[0076] The pill dispenser may include a scale. The one or more processors may be in operative communication with the scale to receive a weight therefrom. The instructions may cause the one or more processors to identify the pill based upon, at least in part, an estimated weight of the pill using the scale. The weight of the pill may be determined by subtracting an estimated weight of the pill holder from the weight received by the scale.

[0077] The instructions may cause the one or more processors to not dispense the pill unless the identity of the pill is determined to be appropriate based on information from one or more of an electronic medical record, a drug error reduction system, and/or a monitoring client.

[0078] In yet another embodiment of the present disclosure, a pill dispenser includes a housing defining an opening, a pill viewing location, a pill-dispensing mechanism, a door mechanism, a first pill-viewing camera, a second pill-viewing camera, one or more processors, and a storage medium. The housing defines an opening. The pill viewing

location is disposed within the housing and is operatively coupled to the opening. The pill-dispensing mechanism is disposed within the housing and is configured to dispense a pill into the pill viewing location. The door mechanism is associated with the pill viewing location and is configured to hold the pill within the pill viewing location and dispense the pill through the opening. The first pill-viewing camera is positioned to capture an image of the pill viewing location. The second pill-viewing camera is positioned to capture an image of the pill through a transparent window associated with the pill viewing location. The one or more processors are in operative communication with the pill-dispensing mechanism, the first pill-viewing camera, the second pill-viewing camera and the door mechanism. The storage medium for storing processor-executable instructions is configured for execution by the one or more processors to cause the one or more processors to: instruct the pill-dispensing mechanism to dispense a pill to the pill viewing area; instruct the first pill-viewing camera to capture a first image of the pill; instruct the second pill-viewing camera to capture a second image of the pill; verify the pill using the first and second images; and instruct the door mechanism to dispense the pill from the pill viewing location through the opening after the pill is verified using the first and second images.

BRIEF DESCRIPTION OF THE DRAWINGS

[0079] These and other aspects will become more apparent from the following detailed description of the various embodiments of the present disclosure with reference to the drawings wherein:

[0080] Fig. 1 shows an illustration of an electronic patient-care system having a pill dispenser in accordance with an embodiment of the present disclosure;

[0081] Fig. 2 shows the pill dispenser of Fig. 1 in accordance with an embodiment of the present disclosure;

[0082] Fig. 3 shows a block diagram of a system for controlling the pill dispenser of Fig. 2 in accordance with an embodiment of the present disclosure;

[0083] Fig. 4 shows a block diagram of the server of Fig. 1 in accordance with an embodiment of the present disclosure;

[0084] Fig. 5 shows a pill dispenser having a plurality of vertical windows in accordance with an additional embodiment of the present disclosure;

[0085] Figs. 6-7 show a pill dispenser having a plurality of vertical windows below a touch screen in accordance with an additional embodiment of the present disclosure;

CLAIMS

1. A pill dispenser, comprising:

a housing defining an opening;

a pill-dispensing mechanism disposed within the housing, the pill-dispensing mechanism configured to dispense a pill;

a pill viewing location operatively coupled to the pill-dispensing mechanism;

a first pill-viewing camera positioned to capture an image of the pill viewing location;

a second pill-viewing camera positioned to capture an image of the pill through a transparent window associated with the pill viewing location;

at least one processor in operative communication with the pill-dispensing mechanism and the first pill-viewing camera; and

a storage medium for storing processor executable instructions configured for execution by the at least one processor for:

instructing the pill-dispensing mechanism to dispense a pill to the pill viewing area;

instructing the first pill-viewing camera to capture a first image of the pill;

instructing the second pill-viewing camera to capture a second image of the pill; and

identifying the pill using the first and second images.

2. The pill dispenser according to claim 1, wherein the at least one processor identifies the pill using at least one of a color of the pill, a shape of the pill, characters on the pill, and a plurality of colors of the pill as determined using the first and fourth images.

3. The pill dispenser according to claim 1, wherein the pill viewing area is external to the housing.

4. The pill dispenser according to claim 1, wherein the pill viewing area is internal to the housing.

5. The pill dispenser according to claim 4, further including a storage medium for storing processor executable instructions configured for execution by the at least one processor for dispensing the pill to a pill holding area outside of the housing.

6. The pill dispenser according to claim 1, further comprising a scale, wherein the at least one processor is in operative communication with the scale and receives a weight therefrom, wherein the storage medium further comprises processor executable instructions configured for execution by the at least one processor for identifying the pill based upon, at least in part, an estimated weight of the pill using the scale.

7. The pill dispenser according to claim 6, wherein the at least one processor estimates the weight of the pill by subtracting an estimated weight of the pill holder.

8. The pill dispenser according to claim 6, wherein the at least one processor does not dispense the pill unless the identity of the pill is determined to be appropriate based on information from at least one of an electronic medical record, a drug error reduction system, or a monitoring client.

9. A pill dispenser, comprising:

a housing defining an opening;

a pill viewing location disposed within the housing and operatively coupled to the opening;

a pill-dispensing mechanism disposed within the housing, the pill-dispensing mechanism configured to dispense a pill into the pill viewing location;

a door mechanism associated with the pill viewing location, wherein the door mechanism is configured to hold the pill within the pill viewing location and dispense the pill through the opening;

a first pill-viewing camera positioned to capture an image of the pill viewing location;

a second pill-viewing camera positioned to capture an image of the pill through a transparent window associated with the pill viewing location;

at least one processor in operative communication with the pill-dispensing mechanism, the first pill-viewing camera, the second pill-viewing camera and the door mechanism; and

a storage medium for storing processor executable instructions configured for execution by the at least one processor for:

instructing the pill-dispensing mechanism to dispense a pill to the pill viewing area;

instructing the first pill-viewing camera to capture a first image of the pill;

instructing the second pill-viewing camera to capture a second image of the pill;

verifying the pill using the first and second images; and

instructing the door mechanism to dispense the pill from the pill viewing location through the opening after the pill is verified using the first and second images.