

CLAIMS

What is claimed is:

1. A medication safety system, comprising:

5 a syringe pump;

a drug library in communication with the syringe pump, the drug library having upper hard and soft limits and lower hard and soft limits associated with at least one drug; and

a graphical user interface for displaying a bar chart showing upper and lower soft limit bars for the at least one drug,

10 wherein the upper and lower soft limit bars can be grabbed and dragged on the graphical user interface in touch-screen fashion to new positions associated with new upper and lower soft limits.

2. The medication safety system of claim 1, wherein the graphical user interface and associated hardware and software is configurable to responsively re-analyze data and compare a particular infusion to the new upper and lower soft limits.

3. The medication safety system of claim 1, wherein the graphical user interface is displayed on at least one of a server operably coupled to the syringe pump, a viewing device operably coupled to the server, or the syringe pump.

4. A method of creating a drug library, the method comprising:

25 receiving a drug list, the drug list including a plurality of listed drug names, one or more delivery concentrations for each of the listed drugs, and one or more dose rates for each of the listed drugs;

receiving operational data from at least one infusion pump, the operational data including information related to an infusion by the at least one infusion pump of at least one of the plurality of listed drugs; and

integrating the drug list and the operational data.

5. The method of creating a drug library of claim 4, wherein the operational data comprises at least one of a rate parameter, a duration parameter, or a volume parameter for the infusion.

6. The method of creating a drug library of claim 4, wherein the operational data is at least one of a drug name, an infusion pump location, a medication amount, a medication unit, a diluent amount, a diluent unit, a medication maximum rate, a dose rate dosing unit, a dose timing, a limiting amount, a patient weight, a patient age, a patient gender, or a patient risk characteristic.

7. The method of creating a drug library of claim 4, wherein the drug list is received from at least one of a hospital information system, a computer, or by manual entry.

8. The method of creating a drug library of claim 4, wherein integrating the drug list and the operational data comprises limiting at least one of the one or more delivery concentrations for one of the listed drugs, one or more dose rates for one of the listed drugs, or a dose amount for one of the listed drugs according to the operational data.

9. The method of creating a drug library of claim 8, wherein limiting comprises establishing at least one of a lower hard limit, an upper hard limit, a lower soft limit, or an upper soft limit.

10. A medication safety system comprising:

at least one infusion pump; and

an aggregating server operably coupled to the at least one infusion pump, the aggregating server comprising a processor and memory and configured to:

receive a drug list, the drug list including a plurality of listed drug names, one or more delivery concentrations for each of the listed drugs, and one or more dose rates for each of the listed drugs,

receive operational data from the at least one infusion pump, the operational data including information related to an infusion by the at least one infusion pump of at least one of the plurality of listed drugs, and

integrate the drug list and the operational data to create a drug library.

11. The medication safety system of claim 10, further comprising a hospital information system operably coupled to the aggregating server, wherein the drug list is received by the aggregating server from the hospital information system.

12. The medication safety system of claim 11, further comprising a data network, wherein the hospital information system is operably coupled to the aggregating server via the data network.

5 13. The medication safety system of claim 11, wherein the aggregating server is further configured to transmit data to the hospital information system.

14. The medication safety system of claim 10, further comprising an interfacing device configured to update at least one of the drug list, the operational data, or the drug library.

10 15. The medication safety system of claim 14, wherein the interfacing device is further configured to transmit the drug list to the aggregating server.

16. The medication safety system of claim 14, further comprising a data network, wherein the interfacing device is operably coupled to the aggregating server via the data network.

17. A method of transitioning an infusion pump, the method comprising:
operating the infusion pump in a rate-volume-run mode;
operating the infusion pump in a data-gathering mode; and
20 operating the infusion pump in a smart-pump mode.

18. The method of transitioning an infusion pump of claim 17, wherein operating the infusion pump in a rate-volume-run mode comprises emulating a rate-volume-run pump by receiving a rate, receiving a volume, and operating the infusion pump based on the rate and the volume.

19. The method of transitioning an infusion pump of claim 17, wherein operating the infusion pump in a data-gathering mode comprises recording one or more operational parameters of the rate-volume-run mode.

20. The method of transitioning an infusion pump of claim 17, wherein operating the infusion pump in a smart-pump mode comprises operating the infusion pump with a drug library.

21. The method of transitioning an infusion pump of claim 20, wherein the drug library is at least partially created based on one or more operational parameters recorded in the data-gathering mode.

- 5 22. An infusion pump comprising:
a pumping mechanism; and
a processor configured to operate the infusion pump in a rate-volume-run mode,
operate the infusion pump in a data-gathering mode, and operate the infusion pump in a
smart-pump mode.

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What is claimed is:

1. A medication safety system, comprising:

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a drug library in communication with the syringe pump, the drug library having upper hard and soft limits and lower hard and soft limits associated with at least one drug; and

a graphical user interface for displaying a bar chart showing upper and lower soft limit bars for the at least one drug, the graphical user interface having associated hardware and software,

10 wherein the upper and lower soft limit bars can be grabbed and dragged on the graphical user interface in touch-screen fashion to new positions associated with new upper and lower soft limits and wherein the graphical user interface and associated hardware and software are configurable to responsively re-analyze data and compare a particular infusion to the new upper and lower soft limits.

2. The medication safety system of claim 1, wherein the graphical user interface is displayed on at least one of a server operably coupled to the syringe pump, a viewing device operably coupled to the server, or the syringe pump.

20 3. A method of creating a drug library, the method comprising:

receiving a drug list, the drug list including a plurality of listed drug names, one or more delivery concentrations for each of the listed drugs, and one or more dose rates for each of the listed drugs;

25 receiving operational data from at least one infusion pump, the operational data including information related to an infusion by the at least one infusion pump of at least one of the plurality of listed drugs; and

integrating the drug list and the operational data.

30 4. The method of creating a drug library of claim 4, wherein the operational data comprises at least one of a rate parameter, a duration parameter, or a volume parameter for the infusion.

5. The method of creating a drug library of claim 4, wherein the operational data is at least one of a drug name, an infusion pump location, a medication amount, a medication unit, a diluent amount, a diluent unit, a medication maximum rate, a dose rate dosing unit, a dose timing, a limiting amount, a patient weight, a patient age, a patient gender, or a patient risk characteristic.

6. The method of creating a drug library of claim 4, wherein the drug list is received from at least one of a hospital information system, a computer, or by manual entry.

7. The method of creating a drug library of claim 4, wherein integrating the drug list and the operational data comprises limiting at least one of the one or more delivery concentrations for one of the listed drugs, one or more dose rates for one of the listed drugs, or a dose amount for one of the listed drugs according to the operational data.

8. The method of creating a drug library of claim 8, wherein limiting comprises establishing at least one of a lower hard limit, an upper hard limit, a lower soft limit, or an upper soft limit.

9. A medication safety system comprising:

at least one infusion pump; and
an aggregating server operably coupled to the at least one infusion pump, the aggregating server comprising a processor and memory and configured to:

receive a drug list, the drug list including a plurality of listed drug names, one or more delivery concentrations for each of the listed drugs, and one or more dose rates for each of the listed drugs,

receive operational data from the at least one infusion pump, the operational data including information related to an infusion by the at least one infusion pump of at least one of the plurality of listed drugs, and

integrate the drug list and the operational data to create a drug library.

10. The medication safety system of claim 10, further comprising a hospital information system operably coupled to the aggregating server, wherein the drug list is received by the aggregating server from the hospital information system.

11. The medication safety system of claim 11, further comprising a data network, wherein the hospital information system is operably coupled to the aggregating server via the data network.

5 12. The medication safety system of claim 11, wherein the aggregating server is further configured to transmit data to the hospital information system.

13. The medication safety system of claim 10, further comprising an interfacing device configured to update at least one of the drug list, the operational data, or the drug library.

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14. The medication safety system of claim 14, wherein the interfacing device is further configured to transmit the drug list to the aggregating server.

15 15. The medication safety system of claim 14, further comprising a data network, wherein the interfacing device is operably coupled to the aggregating server via the data network.