CLAIMS:

1. A non-transitory computer-readable media having computer-executable instructions thereon, wherein when executed by at least one processor of a mobile computing device, cause the at least one processor of the mobile computing device to:

wirelessly communicatively couple the mobile computing device to a GFR sensor;

display a sensor placement screen that instructs the user to place the GFR sensor on a body of a patient;

instruct the user to administer a GFR agent into the body of the patient;

transmit a signal from the mobile computing device to the GFR sensor to cause the GFR sensor to initiate collection of light absorbance data for calculating a GFR of the patient;

receive light absorbance data from the GFR sensor; and

store the received light absorbance data.

2. The non-transitory computer-readable media of claim 1, wherein the computer-executable instructions further cause the processor of the mobile computing device to:

calculate the GFR of the patient using the light absorbance data.

3. The non-transitory computer-readable media of claim 2, wherein the computer-executable instructions further cause the processor of the mobile computing device to:

wirelessly transmit the GFR of the patient to a computing device of a health care provider.

4. The non-transitory computer-readable media of claim 1, wherein the computer-executable instructions further cause the processor of the mobile computing device to:

display a customization screen that instructs the patient to calibrate the GFR sensor on the body of the patient;

transmit a signal from the mobile computing device to the GFR sensor to initiate calibration of the GFR sensor in response to receiving a user input to initiate sensor calibration; and

receive a signal from the GFR sensor upon completion of sensor calibration.

5. The non-transitory computer-readable media of claim 1, wherein the computer-executable instructions further cause the processor of the mobile computing device to:

display an error message if an error occurs during execution of the instructions.

6. A computer-implemented method for assessing a GFR in a patient in need thereof, the method implemented using a mobile computing device that comprises at least one processor in communication with at least one memory, and at least one user interface, the method comprising:

displaying a sensor placement screen that instructs the user to place a sensor on the body of the patient;

communicatively coupling the sensor on the body of the patient to the mobile computing device;

instructing the user on how/where to administer a GFR agent into the body of the patient;

displaying a measurement screen that instructs the user on how to initiate collection of light absorbance data by the sensor;

transmitting a signal from the mobile computing device to the sensor, the signal causing

the sensor to initiate collection of the light absorbance data; and

displaying a collection screen that instructs the user to wait a predetermined period of time while the sensor collects light absorbance data.

7. The computer-implemented method according to claim 6, wherein the method further comprises:

displaying a customization screen that instructs the user on how to customize the sensor prior to collecting light absorbance data.

8. The computer-implemented method according to claim 6, wherein the method further comprises:

calculating the GFR of the patient using the light absorbance data.

9. The computer-implemented method according to claim 8, wherein the method further comprises:

displaying a results screen that displays the calculated GFR of the patient.

10. The computer-implemented method according to claim 6, wherein the method further comprises:

waiting for patient/user input after each step in the computer implemented method indicating that the step was successfully completed.

11. The computer-implemented method according to claim 6, wherein the method further comprises:

transmitting from the mobile computing device to a computing device of a health care provider the calculated GFR, the light absorbance data, or both.

12. The computer-implemented method according to claim 6, wherein the method further comprises:

providing feedback to the user and/or patient if an error occurs at any time during execution of the method.

13. A system for assessing the GFR in a patient in need thereof, the system comprising:

a mobile computing device having installed thereon a computer program for assisting a user in assessing the GFR in the patient, wherein the mobile computing device comprises at least one processor in communication with at least one memory, and at least one user interface;

a GFR sensor configured to be wirelessly communicatively coupled to the mobile computing device;

a GFR agent; and

an injector device for the GFR agent,

wherein the processor of the mobile computing device is configured to

wirelessly communicatively couple the mobile computing device to the GFR sensor;

display a sensor placement screen that instructs the user to place the GFR sensor on a body of the patient; and

instruct the user to administer the GFR agent into the body of the patient.

14. A kit for GFR assessment, the kit comprising:

an injector device configured to administer a GFR agent into the body of a patient;

the GFR agent configured to:

emit at least one response light in response to the electromagnetic radiation generated by the sensor; and

be eliminated by glomerular filtration by the kidneys of the patient;

a sensor configured to:

attach to the body of the patient;

emit electromagnetic radiation in the direction of the body of the patient; and

detect at least one response light emitted by the GFR agent inside the body of the patient in response to the electromagnetic radiation;

a mobile computing device configured to be wirelessly communicatively coupled to the sensor, wherein the mobile computing device comprises at least one processor in communication with at least one memory, and at least one user interface, and programmed to:

receive response light data from the sensor; and

calculate the GFR of the patient based on the response light data,

wherein the processor of the mobile computing device is configured to

communicatively couple the mobile computing device to the sensor;

display a sensor placement screen that instructs the user to place the sensor on the body of the patient; and

instruct the user to administer the GFR agent into the body of the patient.

15. The kit according to claim 14, further comprising:

written instructions describing how to use the components of the kit in order to assess the GFR of the patient.

16. The non-transitory computer readable media of claim 1, wherein to instruct the user to

administer a GFR agent, the computer-executable instructions cause the at least one processor of the mobile computing device to display an injection screen that instructs the user to administer the GFR agent into the body of the patient.

17. The computer-implemented method according to claim 9, wherein the method further comprises:

displaying a transmission screen that instructs the user on how to transmit the calculated GFR to a computing device of a health care provider.