system that enables the remote practitioner to evaluate an individuals eye health and vision and provides the individual with eye health reports, prescriptions, diagnoses, and/or recommendations from the remote practitioner. There is still further a need for a system that allows a remote practitioner or offsite technician to control or monitor the ophthalmologic and vision testing equipment and/or the administration of various eye health and vision tests to individuals. There is still further a need for a system that can be accessed by individuals at a wide range of convenient locations. There is still further a need for a system that encourages individuals to obtain eye health examinations and vision examinations on a regular basis by reducing the time and cost required.

Summary of the Invention

[0014] In one aspect, there is provided a system for providing eye health and vision examinations, comprising: a customer diagnostic center configured to generate customer examination data pertaining to an examination of a customer's eye, the customer diagnostic center including: a user interface configured to receive inputs from, and output information to, the customer; ophthalmic equipment for administering a plurality of tests to the customer, the plurality of tests including at least one eye health test; and an equipment controller configured to control the operation of the ophthalmic equipment; a diagnostic center server configured to receive the customer examination data from the customer diagnostic center and allow the customer examination data to be accessed by an eye-care practitioner via a network; and a practitioner device associated with the eye-care practitioner, the practitioner device configured to: receive at least a portion of the customer examination data from the diagnostic center server; display the received customer examination data to the eye-care practitioner; and generate customer evaluation data pertaining to the eye-care practitioner's review and evaluation of the displayed customer examination data; wherein, an eye health report based, at least in part, on the customer evaluation data is provided to the customer via the network; and wherein the practitioner device is configured to transmit instructions over the network to the customer diagnostic center and the customer diagnostic center includes an equipment controller that is configured to receive and utilize the instructions to control the ophthalmic equipment in administering the plurality of tests to the customer, the examination including an objective portion that utilizes the ophthalmic equipment to derive measurements associated with the tests and a subjective portion that utilizes an audio response system to present questions to and receive responses from the customer pertaining to the tests, wherein the subjective portion of the examination is administered using an iterative process that

includes: retrieving questions from a set of stored questions to present to the customer via the audio response system, wherein the questions are retrieved, at least in part, based on the customer's responses to previous questions; based on the responses received from the customer via the audio response system, automatically adjusting the ophthalmic equipment; and continuously executing the iterative process until it is determined that a particular combination of the responses received from the customer satisfies one or more conditions indicating that sufficient data has been collected.

[0014a] In accordance with the certain embodiments, a system is provided that includes a customer diagnostic center that is configured to generate customer examination data pertaining to an examination of a customer's eye. The customer diagnostic center provides a user interface for receiving input and providing information to a customer. The customer diagnostic center also includes ophthalmic equipment for administering tests to the customer and an equipment controller configured to control the operation of the ophthalmic equipment. A diagnostic center server is configured to receive the customer examination data from the customer diagnostic center over a network and allow the customer examination data to be accessed by an eye-care practitioner. A practitioner device associated with the eye-care practitioner is configured to receive at least a portion of the customer examination data from the diagnostic center server and display the received customer examination data to the eye-care practitioner. Customer evaluation data is generated pertaining to the eye-care practitioner's review and evaluation of the customer examination data. An eye health report is provided to the customer via the network.

[0015] In another aspect, there is provided a method for providing eye health and vision examinations, comprising: generating, with a processor, customer examination data pertaining to an examination of a customer's eye at a customer diagnostic center, the customer diagnostic center including: a user interface configured to receive inputs from, and output information to, the customer; ophthalmic equipment for administering a plurality of tests to the customer, the plurality of tests including at least one eye health test; and an equipment controller configured to control the operation of the ophthalmic equipment; receiving the customer examination data from the customer diagnostic center at a diagnostic center server and allowing the customer examination data to be accessed by an eye-care practitioner via a network; and receiving at least a portion of the customer examination data from the diagnostic center server at a practitioner device associated with the eye-care practitioner; displaying the received customer examination data to the eye-care practitioner;

and generating, with a processor, customer evaluation data pertaining to the eye-care practitioner's review and evaluation of the displayed customer examination data; wherein, an eye health report based, at least in part, on the customer evaluation data is provided to the customer via the network ; and wherein the practitioner device is configured to transmit instructions over the network to the customer diagnostic center and the customer diagnostic center includes an equipment controller that is configured to receive and utilize the instructions to control the ophthalmic equipment in administering the plurality of tests to the customer, the examination including an objective portion that utilizes the ophthalmic equipment to derive measurements associated with the tests and a subjective portion that utilizes an audio response system to present questions to and receive responses from the customer pertaining to the tests, wherein the subjective portion of the examination is administered using an iterative process that includes: retrieving questions from a set of stored questions to present to the customer via the audio response system, wherein the questions are retrieved, at least in part, based on the customer's responses to previous questions; based on the responses received from the customer via the audio response system, automatically adjusting the ophthalmic equipment; and continuously executing the iterative process until it is determined that a particular combination of the responses received from the customer satisfies one or more conditions indicating that sufficient data has been collected.

[0015a] In accordance with certain embodiments, a method is provided for eye health and vision examinations. The method includes generating customer examination data pertaining to an examination of a customer's eye at a customer diagnostic center. The customer diagnostic center includes a user interface for receiving input from, and providing information to, the customer. The customer diagnostic center also includes ophthalmic equipment for administering tests to the customer and an equipment controller configured to control the operation of the ophthalmic equipment. Customer examination data is received from the customer diagnostic center over a computer network at a diagnostic center server. The diagnostic center server permits the customer examination data to be accessed by an eye-

care practitioner. The customer examination data is received at a practitioner device associated with the eye-care practitioner from the diagnostic center server. At least a portion of the customer examination data is displayed to the eye-care practitioner. Customer evaluation data pertaining to the eye-care practitioner's review and evaluation of the customer examination data is generated. An eye health report based, at least in part, on the customer evaluation data is provided to the customer via the network.

[0016] In yet another aspect, there is provided a server for providing services associated with eye health and vision examinations, the server being configured to: receive customer examination data over a computer network pertaining to an examination of a customer's eye administered at a customer diagnostic center, the customer diagnostic center including: a user interface configured to receive inputs from, and output information to, the customer; ophthalmic equipment for administering a plurality of tests to the customer, the plurality of tests including at least one eye health test; and an equipment controller configured to control the operation of the ophthalmic equipment; permit access to the customer examination data by an eye-care practitioner via a network; transmit at least a portion of the customer examination data from the diagnostic center server to a practitioner device associated with the eye-care practitioner; and receive customer evaluation data pertaining to the eye-care practitioner's review and evaluation of the customer examination data from the practitioner device; wherein, an eye health report based, at least in part, on the customer evaluation data is provided to the customer via the network ; and wherein the practitioner device is configured to transmit instructions over the network to the customer diagnostic center and the customer diagnostic center includes an equipment controller that is configured to receive and utilize the instructions to control the ophthalmic equipment in administering the plurality of tests to the customer, the examination including an objective portion that utilizes the ophthalmic equipment to derive measurements associated with the tests and a subjective portion that utilizes an audio response system to present questions to and receive responses from the customer pertaining to the tests, wherein the subjective portion of the examination is administered using an iterative process that includes: retrieving questions from a set of stored questions to present to the customer via the audio response system, wherein the questions are retrieved, at least in part, based on the customer's responses to previous questions; based on the responses received from the customer via the audio response system, automatically adjusting the ophthalmic equipment; and continuously executing the iterative process until it

is determined that a particular combination of the responses received from the customer satisfies one or more conditions indicating that sufficient data has been collected.

[0016a] In accordance with certain embodiments, a server is configured to provide services associated with eye health and vision examinations. The server is configured to receive customer examination data over a computer network pertaining to an examination of a customer's eye administered at a customer diagnostic center. The customer diagnostic center includes a user interface for receiving input from, and providing information to, the customer. The customer diagnostic center also includes ophthalmic equipment for administering tests to the customer and an equipment controller configured to control the operation of the ophthalmic equipment. The server is configured to provide access to the customer examination data by an eye-care practitioner and to transmit the customer examination data from the diagnostic center server to a practitioner device associated with the eye-care practitioner. The server is further configured to receive customer evaluation data pertaining to the eye-care practitioner's review and evaluation of the customer examination data. An eye health report based, at least in part, on the customer evaluation data is provided to the customer via the network.

[0017] These and other features and advantages will become apparent from the following detailed description of illustrative embodiments thereof, which is to be read in connection with the accompanying drawings.

Brief Description of the Drawings

[0018] The inventive principles are illustrated in the figures of the accompanying drawings which are meant to be exemplary and not limiting, in which like references are intended to refer to like or corresponding parts, and in which:

[0019] FIG. 1 is a pictorial diagram of an eye testing and evaluation system in accordance with certain embodiments of the present invention.

[0020] FIG. 2 is a pictorial diagram of an eye testing and evaluation system in accordance with certain embodiments of the present invention.

WHAT IS CLAIMED IS:

1. A system for providing eye health and vision examinations, comprising:

a customer diagnostic center configured to generate customer examination data pertaining to an examination of a customer's eye, the customer diagnostic center including:

a user interface configured to receive inputs from, and output information to, the customer;

ophthalmic equipment for administering a plurality of tests to the customer, the plurality of tests including at least one eye health test; and

an equipment controller configured to control the operation of the ophthalmic equipment;

a diagnostic center server configured to receive the customer examination data from the customer diagnostic center and allow the customer examination data to be accessed by an eye-care practitioner via a network; and

a practitioner device associated with the eye-care practitioner, the practitioner device configured to:

receive at least a portion of the customer examination data from the diagnostic center server;

display the received customer examination data to the eye-care practitioner; and

generate customer evaluation data pertaining to the eye-care practitioner's review and evaluation of the displayed customer examination data;

wherein, an eye health report based, at least in part, on the customer evaluation data is provided to the customer via the network; and

wherein the practitioner device is configured to transmit instructions over the network to the customer diagnostic center and the customer diagnostic center includes an equipment controller that is configured to receive and utilize the instructions to control the ophthalmic equipment in administering the plurality of tests to the customer, the examination including an objective portion that utilizes the ophthalmic equipment to derive measurements associated with the tests and a subjective portion that utilizes an audio response system to

present questions to and receive responses from the customer pertaining to the tests, wherein the subjective portion of the examination is administered using an iterative process that includes:

retrieving questions from a set of stored questions to present to the customer via the audio response system, wherein the questions are retrieved, at least in part, based on the customer's responses to previous questions;

based on the responses received from the customer via the audio response system, automatically adjusting the ophthalmic equipment; and

continuously executing the iterative process until it is determined that a particular combination of the responses received from the customer satisfies one or more conditions indicating that sufficient data has been collected.

2. The system of claim 1, wherein the diagnostic center server is integrated with the customer diagnostic center.

3. The system of claim 1, wherein the ophthalmic equipment comprises eye health equipment that enables customers to receive comprehensive eye health examinations at the customer diagnostic center, the eye health equipment including at least one tonometer, digital imager and biomicroscope.

4. The system of claim 1, wherein the ophthalmic equipment comprises vision screening equipment that enables customers to receive vision examinations at the customer diagnostic center, the vision screening equipment including at least one refractor, phoropter and lensometer.

5. The system of claim 1, wherein a real-time connection is established over the network between the practitioner device and the customer diagnostic center, the real-time connection enabling the eye care practitioner to view and interact with the customer during the examination of the customer’s eye.

~~6. The system of claim 1, wherein the practitioner device is configured to transmit commands over the network to the customer diagnostic center for controlling the ophthalmic equipment during the examination of the customer's eye.~~

~~7~~6. The system of claim 1, wherein the diagnostic center server is configured to store the customer examination data and generate aggregate result data based on an analysis of stored examination data associated with a plurality of customers that have received eye health and vision examinations through the customer diagnostic center.

~~8~~7. The system of claim ~~7~~6, wherein the aggregate result data includes one or more risk factors pertaining to groups of individuals with a higher risk of having a particular eye health or vision disorder.

~~9~~8. The system of claim ~~7~~6, wherein, in response to receiving the customer examination data, the diagnostic center server is configured to process the customer examination data and make the processed customer examination data accessible to the eye care practitioner via the network, the processed customer examination data including preliminary evaluation data generated by the diagnostic center server based on the customer examination data.

~~10~~9. The system of claim ~~9~~8, wherein the preliminary evaluation data is based, at least in part, on data associated with a previous eye examination received by the customer.

~~11~~10. The system of claim ~~9~~8, wherein the preliminary evaluation data includes an identification of one or more eye or vision disorders associated with the customer.

~~12~~11. The system of claim 1, wherein the diagnostic center server determines product recommendations for the customer based on data associated with other customers that have previously received eye health and vision examinations through the customer diagnostic center.

~~13~~12. The system of claim 1, wherein at least a portion of the inputs received from the customer through the user interface is utilized to generate the customer examination data.

~~14~~13. A method for providing eye health and vision examinations, comprising:

generating, with a processor, customer examination data pertaining to an examination of a customer's eye at a customer diagnostic center, the customer diagnostic center including:

a user interface configured to receive inputs from, and output information to, the customer;

ophthalmic equipment for administering a plurality of tests to the customer, the plurality of tests including at least one eye health test; and

an equipment controller configured to control the operation of the ophthalmic equipment;

receiving the customer examination data from the customer diagnostic center at a diagnostic center server and allowing the customer examination data to be accessed by an eye-care practitioner via a network; and

receiving at least a portion of the customer examination data from the diagnostic center server at a practitioner device associated with the eye-care practitioner;

displaying the received customer examination data to the eye-care practitioner; and

generating, with a processor, customer evaluation data pertaining to the eye-care practitioner's review and evaluation of the displayed customer examination data;

wherein, an eye health report based, at least in part, on the customer evaluation data is provided to the customer via the network ; and

wherein the practitioner device is configured to transmit instructions over the network to the customer diagnostic center and the customer diagnostic center includes an equipment controller that is configured to receive and utilize the instructions to control the ophthalmic equipment in administering the plurality of tests to the customer, the examination including an objective portion that utilizes the ophthalmic equipment to derive measurements associated with the tests and a subjective portion that utilizes an audio response system to present questions to and receive responses from the customer pertaining to the tests, wherein

the subjective portion of the examination is administered using an iterative process that includes:

retrieving questions from a set of stored questions to present to the customer via the audio response system, wherein the questions are retrieved, at least in part, based on the customer's responses to previous questions;

based on the responses received from the customer via the audio response system, automatically adjusting the ophthalmic equipment; and

continuously executing the iterative process until it is determined that a particular combination of the responses received from the customer satisfies one or more conditions indicating that sufficient data has been collected.

~~15~~14. The method of claim ~~10~~13, wherein the diagnostic center server is integrated with the customer diagnostic center.

~~16~~15. The method of claim ~~10~~13, wherein the ophthalmic equipment comprises eye health equipment that enables customers to receive comprehensive eye health examinations at the customer diagnostic center, the eye health equipment including at least one tonometer, digital imager and biomicroscope.

~~17~~16. The method of claim ~~10~~13, wherein the ophthalmic equipment comprises vision screening equipment that enables customers to receive vision examinations at the customer diagnostic center, the vision screening equipment including at least one refractor, phoropter and lensometer.

~~18~~17. The method of claim ~~14~~13, further comprising:

establishing a real-time connection over the network between the practitioner device and the customer diagnostic center, the real-time connection enabling the eye care practitioner to view and interact with the customer during the examination of the customer’s eye.

~~19. The method of claim 10, wherein the practitioner device is configured to transmit commands over the network to the customer diagnostic center for controlling the ophthalmic equipment during the examination of the customer's eye.~~

~~20~~18. A server for providing services associated with eye health and vision examinations, the server being configured to:

receive customer examination data over a computer network pertaining to an examination of a customer's eye administered at a customer diagnostic center, the customer diagnostic center including:

a user interface configured to receive inputs from, and output information to, the customer;

ophthalmic equipment for administering a plurality of tests to the customer, the plurality of tests including at least one eye health test; and

an equipment controller configured to control the operation of the ophthalmic equipment;

permit access to the customer examination data by an eye-care practitioner via a network;

transmit at least a portion of the customer examination data from the diagnostic center server to a practitioner device associated with the eye-care practitioner; and

receive customer evaluation data pertaining to the eye-care practitioner's review and evaluation of the customer examination data from the practitioner device;

wherein, an eye health report based, at least in part, on the customer evaluation data is provided to the customer via the network ; and

wherein the practitioner device is configured to transmit instructions over the network to the customer diagnostic center and the customer diagnostic center includes an equipment controller that is configured to receive and utilize the instructions to control the ophthalmic equipment in administering the plurality of tests to the customer, the examination including an objective portion that utilizes the ophthalmic equipment to derive measurements associated with the tests and a subjective portion that utilizes an audio response system to present questions to and receive responses from the customer pertaining to the tests, wherein

the subjective portion of the examination is administered using an iterative process that includes:

retrieving questions from a set of stored questions to present to the customer via the audio response system, wherein the questions are retrieved, at least in part, based on the customer's responses to previous questions;

based on the responses received from the customer via the audio response system, automatically adjusting the ophthalmic equipment; and

continuously executing the iterative process until it is determined that a particular combination of the responses received from the customer satisfies one or more conditions indicating that sufficient data has been collected.