LIST OF CLAIMS

1. A portable surgical system comprising:

a) a flexible enclosure (1) separating a surgical environment inside the enclosure from an user environment outside the enclosure, the enclosure comprising:

an incise drape (11) incorporated into the bottom of an operating-section of the enclosure and configured to be disposed on or around a surgical site of a patient's body and to expose the surgical site, wherein the size and shape of the incise drape is configured to cover the surgical site on the patient's body;

one or more areas of high optical clarity (1a) for viewing the inside of the enclosure; and

an overhead flexible tube (2) receiving air from an environmental control system and configured to create essentially uniform and constant airflow over the surgical site through perforations that define manifold air outlets (3) in the overhead flexible tube (2) and that decrease in density along a remainder of a manifold over the operating-section;

wherein, while the surgical system is deployed in use, only the surgical site covered by the drape (11) is included within the surgical enclosure, and the remainder of the patient body is essentially excluded from the surgical environment inside the enclosure;

b) the environmental control system (5) configured to supply air to the enclosure such as to create essentially sterile conditions inside the enclosure; and

c) one or more ports (8, 10) for accessing the surgical site.

2. The portable surgical system of claim 1, wherein the enclosure (1) further comprises either:

a) at least one instrument section configured to accommodate inside the enclosure (1) an instrument tray (9); or

b) a frame (13) and tethers (14) configured to support the enclosure and being connected to the enclosure via connectors or hinges, wherein the frame (13) is disposed outside the enclosure (1) and is collapsible.

3. The portable surgical system of claim 1, wherein the one or more ports comprise one or more arm ports (8) disposed into the sides of the enclosure (1), wherein each arm port (8) is configured to provide access to the surgical site without substantially allowing either inward contamination of the surgical site by external air or outward contamination of the provider by contaminants emanating from the patient body (7); and

wherein at least one of the arm port (8) is configured to enable an operating instrument to access the surgical site.

4. The portable surgical system of claim 1, wherein the one or more ports comprise one or more material ports (10) disposed into the sides of the enclosure (1), wherein the material ports (10) are configured so as to permit materials to be taken into and out of the enclosure without substantially allowing either inward contamination of the surgical site by external air or outward contamination of the provider by contaminants emanating from the patient body (7).

5. The portable surgical system of claim 1, wherein the overhead flexible tube (2) comprises in whole or in part a collapsible tube (2) configured to assume an open state while airflow through the collapsible tube exerts radial outward pressure sufficient to overcome the radial inward pressure of the enclosure, and to assume a collapsed closed state when the airflow through the collapsible tube is low such that the pressure exerted by the airflow is less than the radial inward pressure of the enclosure; and

wherein the open or closed state of the collapsible tube serves as an indicator of airflow status to the enclosure.

6. The portable surgical system of claim 1, wherein the one or more ports (10) comprise a magnetic port implemented using magnetic strips.

7. The portable surgical system of claim 1,

wherein the drape (11) is a surgical drape that is configured to substantially adhere to the body of the patient; and

wherein the enclosure (1) isolates the surgical site from the outside environment.

8. The portable surgical system of claim 2, wherein the at least one instrument section comprises:

an instrument tray holder (6) above or around the legs of the patient, with the instrument tray (9) disposed on top of the instrument tray holder (6) and configured to accommodate one or more surgical instruments.

9.The portable surgical system of claim 1, wherein the environmental control system comprises one or more of

an HEPA filter (19) disposed at one or more inlets or outlets;

a humidity modulator filter; and

a temperature modulator with heat and/or cold sinks; and

wherein the environmental control system is configured to provide substantially constant airflow in the enclosure (1).

10. A method of setting up the portable surgical system according to any one of claims 1 to 9 for a surgical procedure on a patient, the method comprising:

applying the enclosure (1) above the patient (7) using the incise drape;

the enclosure enclosing a surgical site and excluding a remaining portion of a body of the patient, the incise drape component being incorporated into the bottom of an operating-section of the enclosure;

placing needed materials (9) inside the enclosure;

connecting a frame (13) and tethers (14) to the enclosure via connectors or hinges to support the enclosure, wherein the enclosure and the frame are collapsible.