

CLAIMS

We claim:

1. A method of reducing postpartum bleeding comprising:
 - positioning a device comprising a vacuum element at least partially within a uterus;
 - 5 sealing the uterus with a seal of the device;
 - activating vacuum in the uterus with the vacuum element of the device while the uterus is sealed; and
 - collapsing endometrial trumpet-shaped arteries at an inner surface of the uterus with the vacuum to reduce postpartum bleeding.
- 10 2. The method of claim 1, further comprising collapsing the uterus with the vacuum to cause contraction of uterine muscles and reduce postpartum bleeding.
3. The method of claim 1, wherein activating vacuum comprises supplying vacuum from a pump at between 1 L/min and 20 L/min.
4. The method of claim 1, wherein activating vacuum comprises supplying vacuum from a
15 pump at between 10 L/min and 15 L/min.
5. The method of claim 1, wherein activating vacuum comprises producing a pressure of 40-160 mmHg.
6. The method of claim 1, wherein activating vacuum comprises producing a pressure of 50-100 mmHg.
- 20 7. The method of claim 1, wherein activating vacuum comprises producing a pressure of 70-90 mmHg.
8. The method of claim 1, wherein sealing the uterus comprises placing the seal in the lower uterus, cervix, vaginal canal, or at the vulva.
9. The method of claim 1, wherein sealing the uterus comprises sealing so as to hinder a
25 flow of air into the uterus while vacuum is applied in order to achieve a therapeutic isobaric level of vacuum throughout the uterus.
10. The method of claim 1, further comprising maintaining an isobaric condition within the uterus after activating vacuum.
11. The method of claim 1, wherein activating vacuum comprises activating with a pump
30 having a vacuum reservoir therein so as to enable a consistent flow of vacuum to the uterus.
12. The method of claim 1, further comprising detecting air in a tube connected to the vacuum element to determine if there is a leak in a seal.
13. The method of claim 1, further comprising visualizing a flow of blood from the uterus through a translucent or transparent tube connected to the vacuum element.

14. The method of claim 1, wherein the steps of positioning, sealing, activating, and collapsing result in stopping postpartum bleeding within 5 hours.
15. The method of claim 1, wherein the steps of positioning, sealing, activating, and collapsing result in stopping postpartum bleeding within 2 hours.
- 5 16. The method of claim 1, further comprising confirming that a cervix is dilated to greater than 3 cm prior to the positioning step.
17. The method of claim 1, wherein a leak rate past the seal is less than a pump rate of a pump supplying the vacuum.
18. A method of reducing postpartum bleeding comprising:
- 10 positioning a device comprising a vacuum element at least partially within a uterus;
sealing the uterus with a seal of the device;
activating vacuum in the uterus with the vacuum element of the device while the uterus is sealed;
collapsing the uterus with the vacuum; and
- 15 maintaining an isobaric condition within the uterus after activating vacuum to reduce postpartum bleeding.
19. A system configured to treat postpartum hemorrhaging, comprising:
a suction module comprising:
a vacuum element configured to be placed within a uterus, the vacuum element
- 20 comprising a plurality of holes therein; and
a sealing portion connected to the vacuum element, the sealing portion having a seal configured to seal the uterus; and
a pump system configured to connect to the suction module so as to activate vacuum in the uterus through the vacuum element, wherein the pump system comprises:
- 25 a pump;
a vacuum reservoir; and
a pressure regulator configured to regulate a pressure between the vacuum reservoir and the suction module so as to maintain a substantially constant vacuum within the uterus.
- 30 20. The system of claim 19, wherein the pump is an intermittent pump.
21. The system of claim 19, wherein the pump is a manual pump.
22. The system of claim 19, wherein the pump is configured to draw a vacuum that is higher than a vacuum through the suction module.
23. The system of claim 19, wherein the pump system further comprises a pressure gauge
- 35 connected to the vacuum reservoir configured to indicate a pressure in the vacuum reservoir.

24. The system of claim 19, wherein the pump system further comprises a separation canister configured to prevent fluids from reaching the pressure regulator.
25. A system configured to treat postpartum hemorrhaging, comprising:
a suction module comprising:
5 a vacuum element configured to be placed within a uterus, the vacuum element comprising a plurality of holes therein; and
a sealing portion connected to the vacuum element, the sealing portion having a seal configured to seal the uterus; and
a connecting tube connected to the suction module, wherein the connecting tube is
10 configured to connect to a vacuum pump so as to activate vacuum in the uterus through the vacuum element, further wherein the connecting tube is transparent or translucent so as to enable viewing of a flow of blood therethrough.
26. A system configured to treat postpartum hemorrhaging, comprising:
a suction module comprising:
15 a vacuum element configured to be placed within a uterus, the vacuum element comprising a plurality of holes therein; and
a sealing portion connected to the vacuum element, the sealing portion having a seal configured to seal the uterus; and
a connecting tube connected to the suction module, wherein the connecting tube is
20 configured to connect to a vacuum pump so as to activate vacuum in the uterus through the vacuum element;
wherein the vacuum is configured to collapse endometrial trumpet-shaped arteries at an inner surface of the uterus to reduce postpartum bleeding.
27. The system of claim 19, 25 or 26, wherein the vacuum is configured to collapse the
25 uterus to cause contraction of uterine muscles and reduce postpartum bleeding.
28. The system of claim 19, 25 or 26, wherein the seal is configured to be positioned in the lower uterus, cervix, vaginal canal, or at the vulva.
29. The system of claim 19, 25 or 26, wherein the vacuum element is looped.
30. The system of claim 29, wherein the plurality of holes are positioned along an interior
30 surface of the looped vacuum element.
31. The system of claim 19, 25 or 26, further comprising a shield coupled to and extending along the vacuum element.
32. The system of claim 19, 25 or 26, wherein the vacuum element is atraumatic.
33. The system of claim 19, 25 or 26, wherein the seal is configured to expand from a
35 collapsed configuration to an expanded configuration.