Claims

1. A device for inserting a tube into a body cavity of a patient, the device comprising:

a tube;

a probe; and

a needle configured to enter the body cavity, and to enable entry of the tube and the probe into the body cavity,

wherein the device is configured such that the needle, the tube and the probe distally advance in the body cavity after entry of the probe into the body cavity, with the probe advancing distally beyond the needle.

2. The device of claim 1, wherein the device is configured such that, when the needle is inserted through a region of body tissue prior to entry into the body cavity, the tube and the probe move with the needle.

3. The device of claim 2, wherein the device is configured to apply a biasing force to the probe during insertion of the needle through the region of body tissue, wherein the biasing force causes the probe to advance distally beyond the needle after entry of the probe into the body cavity.

4. The device of any of claims 1 to 3, wherein the device is configured such that the probe advances at a first rate causing distal advancement of the probe relative to the tube after entry of the probe into the body cavity, and subsequently advances at a second rate causing distal advancement of the tube relative to the probe.

5. The device of any of claims 1 to 4, wherein the device is configured such that the tube advances distally relative to the needle after entry of the probe into the body cavity.

6. The device of claim 5, wherein the device is configured such that the tube advances distally beyond the probe after distal advancement of the probe beyond the needle.

7. The device of any of claims 1 to 6, wherein the device is configured to permit retraction of the needle and/or the probe after insertion of the tube into the body cavity, or wherein the device is configured to retract the needle and/or the probe after insertion of the tube into the body cavity.

8. The device of any of claims 1 to 7, wherein the device is configured to permit decoupling of the tube from the device after insertion of the tube into the body cavity.

9. The device of any of claims 1 to 8, wherein the tube, the probe and the needle are arranged concentrically.

10. The device of any of claims 1 to 9, further comprising a drive mechanism configured to distally advance the needle, the probe and the tube.

11. The device of claim 10, further comprising a support leg configured to abut a body surface of the patient during entry of the needle into the body cavity, wherein the support leg is configured to drive the drive mechanism as the tube advances distally relative to the support leg.

12. The device of claim 10 or claim 11, wherein the drive mechanism comprises a rotatable element coupled to each of the needle, the tube and the probe via a respective mechanical linkage.

13. The device of claim 12, wherein the rate of distal advancement of each of the needle, the tube and the probe is determined by the distance between an end of its respective mechanical linkage that is coupled to the rotatable element and an axle of the rotatable element.

14. The device of any of claims 10 to 13, wherein the drive mechanism is operable to be driven in a first direction to distally advance the needle, the probe and the tube.

15. The device of claim 14, wherein the drive mechanism is operable to be driven in a second direction opposite to the first direction, to retract the probe.

16. The device of claim 15, wherein the drive mechanism is operable to be driven in the second direction to retract the needle.

17. The device of any of claims 1 to 16, further comprising a coupling element configured to couple the tube to the device and to permit decoupling of the tube from the device after insertion of the tube into the body cavity.

18. The device of claim 17, wherein the coupling element is configured to decouple the tube from the device after insertion of the tube into the body cavity, and/or wherein the coupling element is configured to cover a tip of the needle after retraction of the needle from the body cavity.

19. The device according to claim 10, further comprising a datum element (or support leg) for contacting the patient's skin to maintain a spatial relationship between a body of the device and the patient.

20. The device according to claim 11 or claim 19, wherein the datum element (or support leg) comprises a detachable component, wherein the datum component (or support leg) engages the tube in a fully deployed condition of the tube, and wherein the engaged datum component (or support leg) forms a wing or other element for fixing the tube to the patient.