CLAIMS

1. A method for automatically classifying clinical descriptions of patients, the method comprising:

receiving, with one or more processors, at least one clinical description file from a data repository comprising a plurality of clinical description files, wherein each clinical description file comprises text relating to the use of a ventricular assist device (VAD) on a corresponding patient;

determining, with the one or more processors, a position of a target word within the text of the at least one clinical description file;

determining, with the one or more processors, whether at least one of a plurality of predetermined negation words is located within an active region, wherein the active region comprises the target word and a predetermined number of words within the text occurring immediately before and immediately after the target word;

determining, with the one or more processors, whether at least one of a plurality of predetermined body-part words is located within the active region; and

writing, with the one or more processors, a flag to a header of the at least one clinical description file in response to a determination that the active region does not contain at least one of the plurality of predetermined negation words or at least one of the plurality of predetermined body-part words, wherein the flag indicates that the at least one clinical description file contains an adverse event.

2. The method of claim 1, wherein determining the position of the target word comprises:

processing the text of the at least one clinical description file to generate word tokens;

determining and grouping word tokens comprising inflected forms of a word; and

performing a keyword search on the text using the grouped word tokens.

3. The method of claim 1, wherein the predetermined number of words of the active regions is at least three words.

4. The method of claim 3, wherein the predetermined number of words of the active regions is three words.

5. The method of claim 1, wherein the plurality of predetermined negation words are selected from ‘no’, ‘not’, ‘nor’, ‘non’, ‘without’, ‘never’, or ‘false’.

6. The method of claim 1, wherein the data repository is an Acute Myocardial Infarction Cardiogenic Shock (AMICS) repository.

7. The method of claim 1 further comprising:

disabling, with the one or more processors, the use of at least one VAD in response to a determination that the number of clinical description files containing adverse events exceeds a predetermined threshold.

8. The method of claim 1 further comprising:

initiating, with the one or more processors, further training at a medical institution in response to a determination that the number of clinical description files containing adverse events exceeds a predetermined threshold.

9. The method of claim 1 further comprising:

initiating, with the one or more processors, manufacturing quality control procedures in response to a determination that the number of clinical description files containing adverse events exceeds a predetermined threshold.

10. The method of claim 1, wherein the target word is ‘bleed’, ‘clot’, or ‘heart’.

11. The method of claim 10, wherein the plurality of predetermined body-part words are selected from ‘leg’, ‘arm’, ‘abdomen’, or ‘groin’.

12. The method of claim 11, wherein the plurality of predetermined negation words are selected from ‘no’, ‘not’, ‘nor’, ‘non’, ‘without’, ‘never’, or ‘false’.

13. The method of claim 1, wherein the target word is ‘bleed’, wherein at least one of the plurality of predetermined negation words is ‘no’, and wherein the plurality of predetermined body-part words are selected from ‘leg’, ‘arm’, ‘abdomen’, and ‘groin’.

14. A system for automatically classifying clinical descriptions of patients, the system comprising:

a data repository comprising a plurality of clinical description files, wherein each clinical description file comprises text relating to the use of a ventricular assist device (VAD) on a corresponding patient; and

one or more processors in communication with the data repository and configured to:

receive at least one of the clinical description files;

determine a position of a target word within the text of the at least one clinical description file;

determine whether at least one of a plurality of predetermined negation words is located within an active region, wherein the active region comprises the target word and a predetermined number of words within the text occurring immediately before and immediately after the target word;

determine whether at least one of a plurality of predetermined body-part words is located within the active region; and

write a flag to a header of the at least one clinical description file in response to a determination that the active region does not contain at least one of the plurality of predetermined negation words or at least one of the plurality of predetermined body-part words, wherein the flag indicates that the at least one clinical description file contains an adverse event.

15. The system of claim 11 further comprising:

at least one VAD for treating a patient; and

a controller in communication with the VAD and the data repository,

wherein the controller is configured to communicate patient data from the at least one VAD to the data repository, and

wherein the data repository is configured to store a clinical description file comprising the patient data from the at least one VAD.

16. The system of claim 15, wherein the one or more processors are further configured to disable the use of the at least one VAD in response to a determination that the number of clinical description files containing adverse events exceeds a predetermined threshold.

17. A non-transitory computer readable storage medium having instructions stored thereon, which, when executed by one or more processors, cause the one or more processors to:

receive at least one clinical description file from a data repository comprising a plurality of clinical description files, wherein each clinical description file comprises text relating to the use of a ventricular assist device (VAD) on a corresponding patient;

determine a position of a target word within the text of the at least one clinical description file;

determine whether at least one of a plurality of predetermined negation words is located within an active region, wherein the active region comprises the target word and a predetermined number of words within the text occurring immediately before and immediately after the target word;

determine whether at least one of a plurality of predetermined body-part words is located within the active region; and

write a flag to a header of the at least one clinical description file in response to a determination that the active region does not contain at least one of the plurality of predetermined negation words or at least one of the plurality of predetermined body-part words, wherein the flag indicates that the at least one clinical description file contains an adverse event.

18. The system of claim 14, wherein the one or more processors are further configured to disable the use of at least one VAD in response to a determination that the number of clinical description files containing adverse events exceeds a predetermined threshold.