**Appendix 1. Search strategies**

The overall limits were:

* Databases: Medline, EMBASE and Cochrane CENTRAL
* Date limits: 1995 – Feb 3, 2020, with updated search on Aug 13, 2020
	+ For searches regarding warfarin we searched back to 1985
* Limited to English language
* Excluded non-human studies
* Excluded editorials, case reports, letter to editors, comments, news, conference abstracts.

In addition to the main searches shown in this appendix, we performed additional focused searches whenever there was the evidence from GI studies for the critical outcomes for a PICO question was non-existent or not sufficient to guide the direction of the effect: in such situations, we preformed additional focused searches for non-GI papers, initially systematic reviews, RCTs and guidelines, and we assessed their references (backward citation searching) as well as the papers that cited our hits (forward citation searching). The additional focused searches are described in each relevant PICO section in the Evidence Profiles Appendix.

PICOs 1-7 (Original search Feb 3, 2020)

Database: OVID Medline Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) 1946 to Present, Embase <1974 to 2020 February 10>, EBM Reviews - Cochrane Central Register of Controlled Trials <January 2020>, EBM Reviews - Cochrane Database of Systematic Reviews <2005 to February 4, 2020>

Search Strategy:

--------------------------------------------------------------------------------

1 exp Warfarin/ (110419)

2 warfarin.tw,kw. (67933)

3 coumadin.tw,kw. (5999)

4 (vitamin K antagonist\* or VKA or VKAs).tw,kw. (17931)

5 Anticoagulants/ (169583)

6 (anticoagulant\* or anti-coagulant\*).tw,kw. (164142)

7 (DOAC or DOACs or NOAC or NOACs).tw,kw. (12505)

8 (Pradaxa or Eliquis or Xarelto or Lixiana or Bevyxxa).tw,kw. (2245)

9 (dabigatran or rivaroxaban or apixaban or edoxaban or betrixaban).tw,kw. (28881)

10 exp Antithrombins/ (33450)

11 thrombin inhibitor\*.tw,kw. (12003)

12 exp Factor Xa Inhibitors/ (34979)

13 factor Xa inhibitor\*.tw,kw. (6661)

14 or/1-13 (377532)

15 exp Gastrointestinal Hemorrhage/ (152783)

16 ((bleed\* or re-bleed\* or rebleed\* or hemorrhag\* or haemorrhag\*) adj3 (gastrointestinal or gastro-intestinal or peptic or digestive or variceal or non-variceal or nonvariceal or stomach or gastric or duodenum or duodenal or esophagi\* or oesophag\* or bowel or colon or rectal or intestinal)).tw,kw. (121980)

17 or/15-16 (202357)

18 (reversal or reversing or reverse or reversed).tw,kw. (1102938)

19 (FFP or fresh frozen plasma).tw,kw. (19717)

20 (PCC or Prothrombin complex concentrate).tw,kw. (25039)

21 (Vitamin K or vit K or "vit.K").tw,kw. (38490)

22 (idarucizumab or andexanet or Andexxa or Praxbind).tw,kw. (1488)

23 or/18-22 (1178833)

24 14 and 17 (13688)

25 23 and 24 (2111)

26 limit 25 to english language [Limit not valid in CDSR; records were retained] (2008)

27 limit 26 to yr="1995 -Current" (1995)

28 conference abstract.pt. or Congresses as Topic/ or Conference Review.pt. or "Journal: Conference Abstract".pt. (3989783)

29 27 not 28 (1456)

30 (exp animals/ or exp animal/ or exp nonhuman/ or exp animal experiment/ or animal model/ or animal tissue/ or non human/ or (rat or rats or mice or mouse or swine or porcine or murine or sheep or lambs or pigs or piglets or rabbit or rabbits or cat or cats or dog or dogs or cattle or bovine or monkey or monkeys or trout or marmoset$1).ti.) not (humans/ or human/ or human experiment/ or (human\* or men or women or patients or subjects).tw.) (10257690)

31 29 not 30 (1455)

32 note/ or editorial/ or letter/ or Comment/ or news/ or (note or editorial or letter or Comment or news).pt. (4557942)

33 31 not 32 (1395)

34 remove duplicates from 33 (1066)

35 (guideline\* or consensus or statement\* or recommendation\* or monograph or task force or position paper).ti. (338372)

36 (Systematic review or meta-analysis).tw,kw. or (Medline or Embase or Pubmed or Cochrane or literature search or literature review).ab. (901794)

37 cochrane database of systematic reviews.jn. (40181)

38 (random\* or controlled or placebo or blind\* or RCT or RCTs).mp. (11948769)

39 or/35-38 (12751765)

40 34 and 39 (577)

41 34 use coch (30)

42 34 use cctr (9)

**43 or/40-42 (577): Part A (enriched in RCTs, systematic reviews of studies of any design, and**

 **guidelines)**

**44 34 not 43 (489): Part B (all remaining articles, i.e., mainly observational studies)**

45 43 or 44 (1066)

PICOs 1-7 (**expanded** search Feb 3, 2020)

Database: Embase <1974 to 2020 April 03>, OVID Medline Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) 1946 to Present, EBM Reviews - Cochrane Central Register of Controlled Trials <February 2020>, EBM Reviews - Cochrane Database of Systematic Reviews <2005 to April 01, 2020>

Search Strategy:

--------------------------------------------------------------------------------

1 exp Warfarin/ (111364)

2 warfarin.tw,kw. (68582)

3 coumadin.tw,kw. (6040)

4 (vitamin K antagonist\* or VKA or VKAs).tw,kw. (18228)

5 Anticoagulants/ (171095)

6 (anticoagulant\* or anti-coagulant\*).tw,kw. (165948)

7 (DOAC or DOACs or NOAC or NOACs).tw,kw. (12906)

8 (Pradaxa or Eliquis or Xarelto or Lixiana or Bevyxxa).tw,kw. (2280)

9 (dabigatran or rivaroxaban or apixaban or edoxaban or betrixaban).tw,kw. (29503)

10 exp Antithrombins/ (33721)

11 thrombin inhibitor\*.tw,kw. (12069)

12 exp Factor Xa Inhibitors/ (35764)

13 factor Xa inhibitor\*.tw,kw. (6731)

14 or/1-13 (381288)

15 exp Gastrointestinal Hemorrhage/ (154482)

16 ((bleed\* or re-bleed\* or rebleed\* or hemorrhag\* or haemorrhag\*) adj3 (gastrointestinal or gastro-intestinal or peptic or digestive or variceal or non-variceal or nonvariceal or stomach or gastric or duodenum or duodenal or esophagi\* or oesophag\* or bowel or colon or rectal or intestinal)).tw,kw. (123322)

**17 (endoscop\* or gastroscop\* or Esophagogastroduodenoscop\* or EGD or sigmoidoscopy or colonosco).tw,kw. (582193)**

18 or/15-17 (734680)

19 (reversal or reversing or reverse or reversed).tw,kw. (1113138)

20 (FFP or fresh frozen plasma).tw,kw. (19910)

21 (PCC or Prothrombin complex concentrate).tw,kw. (25440)

22 (Vitamin K or vit K or "vit.K").tw,kw. (38892)

23 (idarucizumab or andexanet or Andexxa or Praxbind).tw,kw. (1527)

24 or/19-23 (1189971)

25 14 and 18 (16216)

26 24 and 25 (2279)

27 limit 26 to english language [Limit not valid in CDSR; records were retained] (2155)

28 limit 27 to yr="1995 -Current" (2142)

29 conference abstract.pt. or Congresses as Topic/ or Conference Review.pt. or "Journal: Conference Abstract".pt. (4039693)

30 28 not 29 (1531)

31 (exp animals/ or exp animal/ or exp nonhuman/ or exp animal experiment/ or animal model/ or animal tissue/ or non human/ or (rat or rats or mice or mouse or swine or porcine or murine or sheep or lambs or pigs or piglets or rabbit or rabbits or cat or cats or dog or dogs or cattle or bovine or monkey or monkeys or trout or marmoset$1).ti.) not (humans/ or human/ or human experiment/ or (human\* or men or women or patients or subjects).tw.) (10321742)

32 30 not 31 (1530)

33 note/ or editorial/ or letter/ or Comment/ or news/ or (note or editorial or letter or Comment or news).pt. (4602583)

34 32 not 33 (1470)

35 remove duplicates from 34 (1113)

36 (guideline\* or consensus or statement\* or recommendation\* or monograph or task force or position paper).ti. (342510)

37 (Systematic review or meta-analysis).tw,kw. or (Medline or Embase or Pubmed or Cochrane or literature search or literature review).ab. (918073)

38 cochrane database of systematic reviews.jn. (40109)

39 (random\* or controlled or placebo or blind\* or RCT or RCTs).mp. (12119991)

40 or/36-39 (12935708)

41 35 and 40 (597)

42 35 use coch (38)

43 35 use cctr (10)

44 or/41-43 (597)

45 35 not 44 (516)

46 44 or 45 (1113)

47 exp Warfarin/ (111364)

48 warfarin.tw,kw. (68582)

49 coumadin.tw,kw. (6040)

50 (vitamin K antagonist\* or VKA or VKAs).tw,kw. (18228)

51 Anticoagulants/ (171095)

52 (anticoagulant\* or anti-coagulant\*).tw,kw. (165948)

53 (DOAC or DOACs or NOAC or NOACs).tw,kw. (12906)

54 (Pradaxa or Eliquis or Xarelto or Lixiana or Bevyxxa).tw,kw. (2280)

55 (dabigatran or rivaroxaban or apixaban or edoxaban or betrixaban).tw,kw. (29503)

56 exp Antithrombins/ (33721)

57 thrombin inhibitor\*.tw,kw. (12069)

58 exp Factor Xa Inhibitors/ (35764)

59 factor Xa inhibitor\*.tw,kw. (6731)

60 or/47-59 (381288)

61 exp Gastrointestinal Hemorrhage/ (154482)

62 ((bleed\* or re-bleed\* or rebleed\* or hemorrhag\* or haemorrhag\*) adj3 (gastrointestinal or gastro-intestinal or peptic or digestive or variceal or non-variceal or nonvariceal or stomach or gastric or duodenum or duodenal or esophagi\* or oesophag\* or bowel or colon or rectal or intestinal)).tw,kw. (123322)

63 or/61-62 (204570)

64 (reversal or reversing or reverse or reversed).tw,kw. (1113138)

65 (FFP or fresh frozen plasma).tw,kw. (19910)

66 (PCC or Prothrombin complex concentrate).tw,kw. (25440)

67 (Vitamin K or vit K or "vit.K").tw,kw. (38892)

68 (idarucizumab or andexanet or Andexxa or Praxbind).tw,kw. (1527)

69 or/64-68 (1189971)

70 60 and 63 (13885)

71 69 and 70 (2131)

72 limit 71 to english language [Limit not valid in CDSR; records were retained] (2027)

73 limit 72 to yr="1995 -Current" (2014)

74 conference abstract.pt. or Congresses as Topic/ or Conference Review.pt. or "Journal: Conference Abstract".pt. (4039693)

75 73 not 74 (1466)

76 (exp animals/ or exp animal/ or exp nonhuman/ or exp animal experiment/ or animal model/ or animal tissue/ or non human/ or (rat or rats or mice or mouse or swine or porcine or murine or sheep or lambs or pigs or piglets or rabbit or rabbits or cat or cats or dog or dogs or cattle or bovine or monkey or monkeys or trout or marmoset$1).ti.) not (humans/ or human/ or human experiment/ or (human\* or men or women or patients or subjects).tw.) (10321742)

77 75 not 76 (1465)

78 note/ or editorial/ or letter/ or Comment/ or news/ or (note or editorial or letter or Comment or news).pt. (4602583)

79 77 not 78 (1405)

80 remove duplicates from 79 (1073)

81 (guideline\* or consensus or statement\* or recommendation\* or monograph or task force or position paper).ti. (342510)

82 (Systematic review or meta-analysis).tw,kw. or (Medline or Embase or Pubmed or Cochrane or literature search or literature review).ab. (918073)

83 cochrane database of systematic reviews.jn. (40109)

84 (random\* or controlled or placebo or blind\* or RCT or RCTs).mp. (12119991)

85 or/81-84 (12935708)

86 80 and 85 (579)

87 80 use coch (30)

88 80 use cctr (9)

89 or/86-88 (579)

90 80 not 89 (494)

91 89 or 90 (1073)

92 (202002\* or 202003\* or 202004\*).dt. (238439)

93 91 and 92 (0)

94 (202002\* or 202003\* or 202004\*).dc. (412105)

95 91 and 94 (13)

96 34 not 79 (65)

97 95 or 96 (78)

**98 remove duplicates from 97 (60): papers in addition to the original search.**

PICO 8 (Original search Feb 3, 2020)

Database: OVID Medline Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) 1946 to Present, Embase <1974 to 2020 January 31>, EBM Reviews - Cochrane Central Register of Controlled Trials <December 2019>, EBM Reviews - Cochrane Database of Systematic Reviews <2005 to January 29, 2020>

Search Strategy:

--------------------------------------------------------------------------------

1 antiplatelet\*.tw,kw. (78563)

2 (aspirin or acetylsalicylic acid or thienopyridine\* or clopidogrel or prasugrel or ticagrelor or ticlopidine or dipyridamole).tw,kw. (232735)

3 exp Platelet Aggregation Inhibitors/ (472244)

4 or/1-3 (542783)

5 exp Gastrointestinal Hemorrhage/ (152884)

6 ((bleed\* or re-bleed\* or rebleed\* or hemorrhag\* or haemorrhag\*) adj3 (gastrointestinal or gastro-intestinal or peptic or digestive or variceal or non-variceal or nonvariceal or stomach or gastric or duodenum or duodenal or esophagi\* or oesophag\* or bowel or colon or rectal or intestinal)).tw,kw. (121790)

7 or/5-6 (202307)

8 4 and 7 (17349)

9 (platelet adj4 transfus\*).tw,kw. (18235)

10 8 and 9 (74)

11 limit 10 to english language [Limit not valid in CDSR; records were retained] (67)

12 limit 11 to yr="1995 -Current" (63)

13 conference abstract.pt. or Congresses as Topic/ or Conference Review.pt. or "Journal: Conference Abstract".pt. (3983552)

14 12 not 13 (46)

15 (exp animals/ or exp animal/ or exp nonhuman/ or exp animal experiment/ or animal model/ or animal tissue/ or non human/ or (rat or rats or mice or mouse or swine or porcine or murine or sheep or lambs or pigs or piglets or rabbit or rabbits or cat or cats or dog or dogs or cattle or bovine or monkey or monkeys or trout or marmoset$1).ti.) not (humans/ or human/ or human experiment/ or (human\* or men or women or patients or subjects).tw.) (10256883)

16 14 not 15 (46)

17 note/ or editorial/ or letter/ or Comment/ or news/ or (note or editorial or letter or Comment or news).pt. (4575991)

18 16 not 17 (43)

**19 remove duplicates from 18 (32)**

PICOs 9-10 (Original search Feb 3, 2020)

Database: OVID Medline Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) 1946 to Present, Embase <1974 to 2020 January 31>, EBM Reviews - Cochrane Central Register of Controlled Trials <December 2019>, EBM Reviews - Cochrane Database of Systematic Reviews <2005 to January 29, 2020>

Search Strategy:

--------------------------------------------------------------------------------

1 (aspirin or acetylsalicylic acid).tw,kw. (193959)

2 exp Gastrointestinal Hemorrhage/ (152884)

3 ((bleed\* or re-bleed\* or rebleed\* or hemorrhag\* or haemorrhag\*) adj3 (gastrointestinal or gastro-intestinal or peptic or digestive or variceal or non-variceal or nonvariceal or stomach or gastric or duodenum or duodenal or esophagi\* or oesophag\* or bowel or colon or rectal or intestinal)).tw,kw. (121790)

4 2 or 3 (202307)

5 (hold or holding or held or discontinue or discontinuing or discontinued or discontinuation or stop or stopping or stopped or interrupt or interrupting or interrupted or interruption or continue or continuing or continuation or continued or resume or resuming or resumed or resumption).tw,kw. (2109342)

6 1 and 4 (10198)

7 5 and 6 (1362)

8 limit 7 to english language [Limit not valid in CDSR; records were retained] (1255)

9 limit 8 to yr="1995 -Current" (1169)

10 conference abstract.pt. or Congresses as Topic/ or Conference Review.pt. or "Journal: Conference Abstract".pt. (3983552)

11 9 not 10 (854)

12 (exp animals/ or exp animal/ or exp nonhuman/ or exp animal experiment/ or animal model/ or animal tissue/ or non human/ or (rat or rats or mice or mouse or swine or porcine or murine or sheep or lambs or pigs or piglets or rabbit or rabbits or cat or cats or dog or dogs or cattle or bovine or monkey or monkeys or trout or marmoset$1).ti.) not (humans/ or human/ or human experiment/ or (human\* or men or women or patients or subjects).tw.) (10256883)

13 11 not 12 (849)

14 note/ or editorial/ or letter/ or Comment/ or news/ or (note or editorial or letter or Comment or news).pt. (4575991)

15 13 not 14 (829)

16 remove duplicates from 15 (626)

17 (guideline\* or consensus or statement\* or recommendation\* or monograph or task force or position paper).ti. (338705)

18 (Systematic review or meta-analysis).tw,kw. or (Medline or Embase or Pubmed or Cochrane or literature search or literature review).ab. (899309)

19 cochrane database of systematic reviews.jn. (40116)

20 (random\* or controlled or placebo or blind\* or RCT or RCTs).mp. (11912117)

21 or/17-20 (12714215)

22 16 and 21 (381)

23 16 use coch,cctr (71)

**24 22 or 23 (381) Part A (enriched in RCTs, systematic reviews of studies of any design, and**

 **guidelines)**

**25 16 not 24 (245) Part B (all remaining articles, i.e., mainly observational studies)**

PICOs 11-18 (Original search Feb 3, 2020)

Database: OVID Medline Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) 1946 to Present, Embase <1974 to 2020 January 31>, EBM Reviews - Cochrane Central Register of Controlled Trials <December 2019>, EBM Reviews - Cochrane Database of Systematic Reviews <2005 to January 29, 2020>

Search Strategy:

--------------------------------------------------------------------------------

1 exp Warfarin/ (111185)

2 warfarin.tw,kw. (68064)

3 coumadin.tw,kw. (6007)

4 (vitamin K antagonist\* or VKA or VKAs).tw,kw. (17905)

5 Anticoagulants/ (169872)

6 (anticoagulant\* or anti-coagulant\*).tw,kw. (164124)

7 (DOAC or DOACs or NOAC or NOACs).tw,kw. (12465)

8 (Pradaxa or Eliquis or Xarelto or Lixiana or Bevyxxa).tw,kw. (2268)

9 (dagibtatran or rivaroxaban or apixaban or edoxaban or betrixaban).tw,kw. (21664)

10 exp Antithrombins/ (33416)

11 thrombin inhibitor\*.tw,kw. (12035)

12 exp Factor Xa Inhibitors/ (35182)

13 factor Xa inhibitor\*.tw,kw. (6669)

14 (aspirin or acetylsalicylic acid or thienopyridine\* or clopidogrel or prasugrel or ticagrelor or ticlopidine or dipyridamole).tw,kw. (232735)

15 or/1-14 (573324)

16 exp Gastrointestinal Hemorrhage/ (152884)

17 ((bleed\* or re-bleed\* or rebleed\* or hemorrhag\* or haemorrhag\*) adj3 (gastrointestinal or gastro-intestinal or peptic or digestive or variceal or non-variceal or nonvariceal or stomach or gastric or duodenum or duodenal or esophagi\* or oesophag\* or bowel or colon or rectal or intestinal)).tw,kw. (121790)

18 or/16-17 (202307)

19 15 and 18 (21460)

20 (endoscopy or colonoscopy or gastroscopy or esophagogastroduodenoscopy or oesophagogastroduodenoscopy or endoscopic or scope or scoped or scoping).tw,kw. (746669)

21 19 and 20 (3865)

22 (hold or holding or held or discontinue or discontinuing or discontinued or discontinuation or stop or stopping or stopped or interrupt or interrupting or interrupted or interruption or continue or continuing or continuation or continued or resume or resuming or resumed or resumption or bridge or bridging or bridged).tw,kw. (2322474)

23 21 and 22 (981)

24 limit 23 to english language [Limit not valid in CDSR; records were retained] (901)

25 limit 24 to yr="1995 -Current" (872)

26 conference abstract.pt. or Congresses as Topic/ or Conference Review.pt. or "Journal: Conference Abstract".pt. (3983552)

27 25 not 26 (482)

28 (exp animals/ or exp animal/ or exp nonhuman/ or exp animal experiment/ or animal model/ or animal tissue/ or non human/ or (rat or rats or mice or mouse or swine or porcine or murine or sheep or lambs or pigs or piglets or rabbit or rabbits or cat or cats or dog or dogs or cattle or bovine or monkey or monkeys or trout or marmoset$1).ti.) not (humans/ or human/ or human experiment/ or (human\* or men or women or patients or subjects).tw.) (10256883)

29 27 not 28 (482)

30 note/ or editorial/ or letter/ or Comment/ or news/ or (note or editorial or letter or Comment or news).pt. (4575991)

31 29 not 30 (481)

**32 remove duplicates from 31 (335)**

………….

68 (guideline\* or consensus or statement\* or recommendation\* or monograph or task force or position paper).ti. (338705)

69 (Systematic review or meta-analysis).tw,kw. or (Medline or Embase or Pubmed or Cochrane or literature search or literature review).ab. (899309)

70 cochrane database of systematic reviews.jn. (40116)

71 (random\* or controlled or placebo or blind\* or RCT or RCTs).mp. (11912117)

72 68 or 69 or 70 or 71 (12714215)

……….

77 32 and 72 (174)

78 32 use coch,cctr (44)

**79 77 or 78 (174) Part A (enriched in RCTs, systematic reviews of studies of any design, and**

 **guidelines)**

**80 32 not 79 (161) Part B (all remaining articles, i.e., mainly observational studies)**

**Supplemental** search for guidelines, all PICOs, not limited to GI (Aug 13, 2020)

Database: Ovid MEDLINE(R) ALL <1946 to August 12, 2020>

Search Strategy:

--------------------------------------------------------------------------------

1 warfarin.tw,kw. (24495)

2 coumadin.tw,kw. (1067)

3 (vitamin K antagonist\* or VKA or VKAs).tw,kw. (6364)

4 (anticoagulant\* or anti-coagulant\*).tw,kw. (65193)

5 (DOAC or DOACs or NOAC or NOACs).tw,kw. (4254)

6 (Pradaxa or Eliquis or Xarelto or Lixiana or Bevyxxa).tw,kw. (282)

7 (dabigatran or rivaroxaban or apixaban or edoxaban or betrixaban).tw,kw. (9081)

8 thrombin inhibitor\*.tw,kw. (4704)

9 factor Xa inhibitor\*.tw,kw. (2397)

10 (antithrombotic\* or anti-thrombotic\* or antithrombin\*).tw,kw. (35320)

11 (antiplatelet\* or anti-platelet\* or aspirin or acetylsalicylic acid or thienopyridine\* or clopidogrel or prasugrel or ticagrelor or ticlopidine or dipyridamole).tw,kw. (91221)

12 or/1-11 (188941)

13 practice Guideline.pt. (27425)

14 guideline.pt. (16284)

15 or/13-14 (34398)

16 12 and 15 (598)

17 limit 16 to english language (498)

**18 limit 17 to yr="2010 -Current" (279)**

**Supplemental** search for older guidelines, PICOs 1-7, limited to GI (Aug 13, 2020)

Database: OVID Medline Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) 1946 to Present, Embase <1974 to 2020 July 17>, EBM Reviews - Cochrane Database of Systematic Reviews <2005 to July 16, 2020>, EBM Reviews - Cochrane Central Register of Controlled Trials <June 2020>

Search Strategy:

--------------------------------------------------------------------------------

1 exp Warfarin/ (112603)

2 warfarin.tw,kw. (69642)

3 coumadin.tw,kw. (6065)

4 (vitamin K antagonist\* or VKA or VKAs).tw,kw. (18819)

5 Anticoagulants/ (173289)

6 (anticoagulant\* or anti-coagulant\*).tw,kw. (169279)

7 (antithrombotic\* or anti-thrombotic\*).tw,kw. (53456)

**8 or/1-7 (378773)**

9 exp Gastrointestinal Hemorrhage/ (156635)

10 (bleed\* or re-bleed\* or rebleed\* or hemorrhag\* or haemorrhag\*).tw,kw. (1116055)

11 or/9-10 (1171601)

**12 8 and 11 (97266)**

13 (reversal or reversing or reverse or reversed).tw,kw. (1129810)

14 (FFP or fresh frozen plasma).tw,kw. (20209)

15 (PCC or Prothrombin complex concentrate).tw,kw. (25981)

16 (Vitamin K or vit K or "vit.K").tw,kw. (39754)

17 or/13-16 (1207887)

**18 12 and 17 (17488)**

19 limit 18 to english language [Limit not valid in CDSR; records were retained] (15916)

20 limit 19 to yr="1985 -1994" (208)

**21 remove duplicates from 20 (120)**

**Supplemental** search PICOs 1-7 (Aug 13, 2020)

Database: OVID Medline Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) 1946 to Present, Embase <1974 to 2020 July 17>, EBM Reviews - Cochrane Database of Systematic Reviews <2005 to July 16, 2020>, EBM Reviews - Cochrane Central Register of Controlled Trials <June 2020>

Search Strategy:

--------------------------------------------------------------------------------

1 exp Warfarin/ (112603)

2 warfarin.tw,kw. (69642)

3 coumadin.tw,kw. (6065)

4 (vitamin K antagonist\* or VKA or VKAs).tw,kw. (18819)

5 Anticoagulants/ (173289)

6 (anticoagulant\* or anti-coagulant\*).tw,kw. (169279)

7 (DOAC or DOACs or NOAC or NOACs).tw,kw. (13784)

8 (Pradaxa or Eliquis or Xarelto or Lixiana or Bevyxxa).tw,kw. (2328)

9 (dabigatran or rivaroxaban or apixaban or edoxaban or betrixaban).tw,kw. (30695)

10 exp Antithrombins/ (34157)

11 thrombin inhibitor\*.tw,kw. (12155)

12 exp Factor Xa Inhibitors/ (37063)

13 factor Xa inhibitor\*.tw,kw. (6862)

14 or/1-13 (387313)

15 exp Gastrointestinal Hemorrhage/ (156635)

16 ((bleed\* or re-bleed\* or rebleed\* or hemorrhag\* or haemorrhag\*) adj3 (gastrointestinal or gastro-intestinal or peptic or digestive or variceal or non-variceal or nonvariceal or stomach or gastric or duodenum or duodenal or esophagi\* or oesophag\* or bowel or colon or rectal or intestinal)).tw,kw. (125448)

17 (endoscop\* or gastroscop\* or Esophagogastroduodenoscop\* or EGD or sigmoidoscopy or colonosco).tw,kw. (595314)

18 or/15-17 (749970)

19 (reversal or reversing or reverse or reversed).tw,kw. (1129810)

20 (FFP or fresh frozen plasma).tw,kw. (20209)

21 (PCC or Prothrombin complex concentrate).tw,kw. (25981)

22 (Vitamin K or vit K or "vit.K").tw,kw. (39754)

23 (idarucizumab or andexanet or Andexxa or Praxbind).tw,kw. (1608)

24 or/19-23 (1208216)

25 14 and 18 (16658)

26 24 and 25 (2382)

27 limit 26 to english language [Limit not valid in CDSR; records were retained] (2256)

28 limit 27 to yr="1995 -Current" (2243)

29 conference abstract.pt. or Congresses as Topic/ or Conference Review.pt. or "Journal: Conference Abstract".pt. (4124616)

30 28 not 29 (1614)

31 (exp animals/ or exp animal/ or exp nonhuman/ or exp animal experiment/ or animal model/ or animal tissue/ or non human/ or (rat or rats or mice or mouse or swine or porcine or murine or sheep or lambs or pigs or piglets or rabbit or rabbits or cat or cats or dog or dogs or cattle or bovine or monkey or monkeys or trout or marmoset$1).ti.) not (humans/ or human/ or human experiment/ or (human\* or men or women or patients or subjects).tw.) (10401657)

32 30 not 31 (1614)

33 note/ or editorial/ or letter/ or Comment/ or news/ or (note or editorial or letter or Comment or news).pt. (4687238)

34 32 not 33 (1552)

**35 remove duplicates from 34 (1174) [previous search strategy, if run on Aug 13, 2020]**

36 exp Warfarin/ (112603)

37 warfarin.tw,kw. (69642)

38 coumadin.tw,kw. (6065)

39 (vitamin K antagonist\* or VKA or VKAs).tw,kw. (18819)

40 Anticoagulants/ (173289)

41 (anticoagulant\* or anti-coagulant\*).tw,kw. (169279)

42 (DOAC or DOACs or NOAC or NOACs).tw,kw. (13784)

43 (Pradaxa or Eliquis or Xarelto or Lixiana or Bevyxxa).tw,kw. (2328)

44 (dabigatran or rivaroxaban or apixaban or edoxaban or betrixaban).tw,kw. (30695)

45 exp Antithrombins/ (34157)

46 thrombin inhibitor\*.tw,kw. (12155)

47 exp Factor Xa Inhibitors/ or factor Xa inhibitor\*.tw,kw. (38858)

**48 (antithrombotic\* or anti-thrombotic\* or antithrombin\*).tw,kw. (90097)**

49 or/36-48 (428248)

50 exp Gastrointestinal Hemorrhage/ (156635)

51 ((bleed\* or re-bleed\* or rebleed\* or hemorrhag\* or haemorrhag\*) adj3 (gastrointestinal or gastro-intestinal or peptic or digestive or variceal or non-variceal or nonvariceal or stomach or gastric or duodenum or duodenal or esophagi\* or oesophag\* or bowel or colon or rectal or intestinal)).tw,kw. (125448)

52 (endoscop\* or gastroscop\* or Esophagogastroduodenoscop\* or EGD or sigmoidoscopy or colonosco).tw,kw. (595314)

53 or/50-52 (749970)

54 (reversal or reversing or reverse or reversed).tw,kw. (1129810)

55 (FFP or fresh frozen plasma).tw,kw. (20209)

56 (PCC or Prothrombin complex concentrate).tw,kw. (25981)

57 (Vitamin K or vit K or "vit.K").tw,kw. (39754)

58 (idarucizumab or andexanet or Andexxa or Praxbind).tw,kw. (1608)

59 or/54-58 (1208216)

60 49 and 53 (17600)

61 59 and 60 (2394)

62 limit 61 to english language [Limit not valid in CDSR; records were retained] (2268)

63 limit 62 to yr="1995 -Current" (2255)

64 conference abstract.pt. or Congresses as Topic/ or Conference Review.pt. or "Journal: Conference Abstract".pt. (4124616)

65 63 not 64 (1624)

66 (exp animals/ or exp animal/ or exp nonhuman/ or exp animal experiment/ or animal model/ or animal tissue/ or non human/ or (rat or rats or mice or mouse or swine or porcine or murine or sheep or lambs or pigs or piglets or rabbit or rabbits or cat or cats or dog or dogs or cattle or bovine or monkey or monkeys or trout or marmoset$1).ti.) not (humans/ or human/ or human experiment/ or (human\* or men or women or patients or subjects).tw.) (10401657)

67 65 not 66 (1624)

68 note/ or editorial/ or letter/ or Comment/ or news/ or (note or editorial or letter or Comment or news).pt. (4687238)

69 67 not 68 (1562)

70 remove duplicates from 69 (1179)

**71 70 not 35 (6)**

**Supplemental** search PICOs 11-18 (Aug 13, 2020)

Database: OVID Medline Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) 1946 to Present, Embase <1974 to 2020 July 17>, EBM Reviews - Cochrane Database of Systematic Reviews <2005 to July 16, 2020>, EBM Reviews - Cochrane Central Register of Controlled Trials <June 2020>

Search Strategy:

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1 exp Warfarin/ (112603)

2 warfarin.tw,kw. (69642)

3 coumadin.tw,kw. (6065)

4 (vitamin K antagonist\* or VKA or VKAs).tw,kw. (18819)

5 Anticoagulants/ (173289)

6 (anticoagulant\* or anti-coagulant\*).tw,kw. (169279)

7 (DOAC or DOACs or NOAC or NOACs).tw,kw. (13784)

8 (Pradaxa or Eliquis or Xarelto or Lixiana or Bevyxxa).tw,kw. (2328)

9 (dabigatran or rivaroxaban or apixaban or edoxaban or betrixaban).tw,kw. (30695)

10 exp Antithrombins/ (34157)

11 thrombin inhibitor\*.tw,kw. (12155)

12 exp Factor Xa Inhibitors/ or factor Xa inhibitor\*.tw,kw. (38858)

13 (aspirin or acetylsalicylic acid or thienopyridine\* or clopidogrel or prasugrel or ticagrelor or ticlopidine or dipyridamole).tw,kw. (236893)

**14 (antithrombotic\* or anti-thrombotic\*).tw,kw. (53456)**

15 or/1-14 (606137)

16 exp Gastrointestinal Hemorrhage/ (156635)

17 ((bleed\* or re-bleed\* or rebleed\* or hemorrhag\* or haemorrhag\*) adj3 (gastrointestinal or gastro-intestinal or peptic or digestive or variceal or non-variceal or nonvariceal or stomach or gastric or duodenum or duodenal or esophagi\* or oesophag\* or bowel or colon or rectal or intestinal or **postpolypectomy or post-polypectomy**)).tw,kw. (126337)

18 or/16-17 (208440)

19 15 and 18 (22613)

**20 (endoscop\* or colonoscop\* or gastroscop\* or esophagogastroduodenoscop\* or oesophagogastroduodenoscop\* or scope or scopes or scoped or scoping or ERCP or ERCPs or sphincterotom\* or enteroscop\* or EUS or polypectom\* or postpolypectomy or post-polypectomy).tw,kw. (844831)**

21 19 and 20 (4588)

22 (hold or holding or held or discontinue or discontinuing or discontinued or discontinuation or stop or stopping or stopped or interrupt or interrupting or interrupted or interruption or continue or continuing or continuation or continued or resume or resuming or resumed or resumption or bridge or bridging or bridged).tw,kw. (2396032)

23 21 and 22 (1227)

24 limit 23 to english language [Limit not valid in CDSR; records were retained] (1128)

25 limit 24 to yr="1995 -Current" (1094)

26 conference abstract.pt. or Congresses as Topic/ or Conference Review.pt. or "Journal: Conference Abstract".pt. (4124616)

27 25 not 26 (593)

28 (exp animals/ or exp animal/ or exp nonhuman/ or exp animal experiment/ or animal model/ or animal tissue/ or non human/ or (rat or rats or mice or mouse or swine or porcine or murine or sheep or lambs or pigs or piglets or rabbit or rabbits or cat or cats or dog or dogs or cattle or bovine or monkey or monkeys or trout or marmoset$1).ti.) not (humans/ or human/ or human experiment/ or (human\* or men or women or patients or subjects).tw.) (10401657)

29 27 not 28 (593)

30 note/ or editorial/ or letter/ or Comment/ or news/ or (note or editorial or letter or Comment or news).pt. (4687238)

31 29 not 30 (585)

**32 remove duplicates from 31 (385)**

33 exp Warfarin/ (112603)

34 warfarin.tw,kw. (69642)

35 coumadin.tw,kw. (6065)

36 (vitamin K antagonist\* or VKA or VKAs).tw,kw. (18819)

37 Anticoagulants/ (173289)

38 (anticoagulant\* or anti-coagulant\*).tw,kw. (169279)

39 (DOAC or DOACs or NOAC or NOACs).tw,kw. (13784)

40 (Pradaxa or Eliquis or Xarelto or Lixiana or Bevyxxa).tw,kw. (2328)

41 (dabigatran or rivaroxaban or apixaban or edoxaban or betrixaban).tw,kw. (30695)

42 exp Antithrombins/ (34157)

43 thrombin inhibitor\*.tw,kw. (12155)

44 exp Factor Xa Inhibitors/ (37063)

45 factor Xa inhibitor\*.tw,kw. (6862)

46 (aspirin or acetylsalicylic acid or thienopyridine\* or clopidogrel or prasugrel or ticagrelor or ticlopidine or dipyridamole).tw,kw. (236893)

47 or/33-46 (586854)

48 exp Gastrointestinal Hemorrhage/ (156635)

49 ((bleed\* or re-bleed\* or rebleed\* or hemorrhag\* or haemorrhag\*) adj3 (gastrointestinal or gastro-intestinal or peptic or digestive or variceal or non-variceal or nonvariceal or stomach or gastric or duodenum or duodenal or esophagi\* or oesophag\* or bowel or colon or rectal or intestinal)).tw,kw. (125448)

50 or/48-49 (207716)

51 47 and 50 (22115)

52 (endoscopy or colonoscopy or gastroscopy or esophagogastroduodenoscopy or oesophagogastroduodenoscopy or endoscopic or scope or scoped or scoping or ERCP or sphincterotomy or enteroscopy or EUS).tw,kw. (801176)

53 51 and 52 (4085)

54 (hold or holding or held or discontinue or discontinuing or discontinued or discontinuation or stop or stopping or stopped or interrupt or interrupting or interrupted or interruption or continue or continuing or continuation or continued or resume or resuming or resumed or resumption or bridge or bridging or bridged).tw,kw. (2396032)

55 53 and 54 (1049)

56 limit 55 to english language [Limit not valid in CDSR; records were retained] (965)

57 limit 56 to yr="1995 -Current" (937)

58 conference abstract.pt. or Congresses as Topic/ or Conference Review.pt. or "Journal: Conference Abstract".pt. (4124616)

59 57 not 58 (502)

60 (exp animals/ or exp animal/ or exp nonhuman/ or exp animal experiment/ or animal model/ or animal tissue/ or non human/ or (rat or rats or mice or mouse or swine or porcine or murine or sheep or lambs or pigs or piglets or rabbit or rabbits or cat or cats or dog or dogs or cattle or bovine or monkey or monkeys or trout or marmoset$1).ti.) not (humans/ or human/ or human experiment/ or (human\* or men or women or patients or subjects).tw.) (10401657)

61 59 not 60 (502)

62 note/ or editorial/ or letter/ or Comment/ or news/ or (note or editorial or letter or Comment or news).pt. (4687238)

63 61 not 62 (500)

64 remove duplicates from 63 (350) **[previous search strategy, if run on Aug 13, 2020]**

**65 32 not 64 (42)**