

Appendix G - Identification and Selection of Studies

Inclusion/Exclusion Criteria

We included studies that were 1) original reports, 2) systematic reviews or guidelines and were 3) published in English. We excluded studies that were 1) case reports or 2) abstracts. For the trauma literature, we excluded reports that were from 1) Developing countries (defined as countries outside North America and the European Union) as trauma care in those countries was deemed to be dissimilar to developed countries, 2) reports that included less than 100 patients, 3) reports published earlier than year 2000 as the care of trauma patients has advanced over the years and 4) reports of combat trauma. For the literature search for patients undergoing heart/lung/liver transplantation and patients requiring ventricular assist devices and extracorporeal membrane oxygenation, we excluded reports from 1) reports that included less than 100 patients, 2) reports published earlier than year 2000 as transplant regimens have evolved and 3) reports from the journal *Transplantation Proceedings* as the reports are not peer reviewed. For the literature search for obstetrical care, reports from developing countries were excluded as obstetrical care is not well developed in those countries. Summaries of included and excluded reports are illustrated in Tables 1 to 3. Table 3 summarizes reports excluded for reasons not stated above and the rationale for exclusion.

One reviewer (NS) assessed the citations for inclusion and extracted data to generate tables containing data on trial design, quality, and outcome results. Tables 1-3 describe the reports.

2 | FINAL – Emergency framework for rationing of blood for massively bleeding patients during a red phase of a blood shortage

Table 1: Citations Reviewed

Disease Category	Electronic Database			
	Medline	Medline in Process	EMBASE	CCTR
Trauma	706	496	2593	186
Trauma and Massive Bleeding		19	358	21
Heart and Lung Transplantation	1648	95	1919	68
Heart and Lung Transplantation and Massive Bleeding	11	0	14	0
Liver Transplantation	2380	163	468	113
Liver Transplantation and Massive Bleeding	59	9	71	2
Ventricular Assist Device	660	18	698	33
Ventricular Assist Device and Massive Bleeding	3	0	5	0
Extracorporeal Membrane Oxygenation	465	22	634	22
Extracorporeal membrane oxygenation and Massive Bleeding	10	0	9	0
Ruptured Aortic Aneurysm	848	118	669	33
Ruptured Aortic Aneurysm and Massive Bleeding	19	2	19	0
Obstetrics	718	1	484	148
Obstetrics and Massive Bleeding	131	2	47	2
Gastrointestinal bleeding	857	69	325	102
Gastroenterology and Massive Bleeding	285	7	159	12

CCTR, Cochrane Clinical Trials Registry

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Table 2: The Number of Reports Used to Generate Recommendations

Disease Category	Number
Trauma	97
Trauma and Massive Bleeding	2
Heart Transplantation	34
Lung Transplantation	26
Liver Transplantation	41
Liver Transplantation and Massive Bleeding	10
Ventricular Assist Device	10
Extracorporeal Membrane Oxygenation	17
Ruptured Aortic Aneurysm	80
Obstetrics	8
Gastrointestinal bleeding	58

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Table 3: Reports Excluded After Review

Rationale for Exclusion	Number
Trauma	
No predictors of mortality stated	5
Combined outcome of death or vegetative state	1
Mortality risk score development for use in studies using administrative databases	1
No relevant outcomes	2
No statistical analysis	2
Only assessed patients who died	2
Glasgow coma score used as the outcome	1
Systematic review of improvements necessary for prognostic models	1
Heart Transplantation	
No predictors of mortality	5
Predictors of survival for patients on the waiting list	1
Composite outcome	1
Compared only one predictor (age)	1
Risks bridging to transplantation	1
Risks for heart failure	1
Personality predictors of mortality	1
Risk factors of death with and without transplantation	1
Lung Transplantation	
No predictors of survival	5
Duplicate report	1
Compared only one predictor (patient volume, and graft ischemic time, HLA)	3
Only analyzed donor characteristics	3
Systematic review of predictors for “outcomes”	1

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Rationale for Exclusion	Number
Liver Transplantation	
Composite outcome of graft loss and death	1
Predictors of patients who can benefit from transplantation	1
Review of study previously published	1
Assessed predictors after ICU admission	1
Assessed predictors of no transfusion	1
Assessed postoperative predictors of mortality	1
Sample size not stated	1
Assessed predictors for mortality patients on the waiting list	1
Assessed predictors of graft survival	1
Patients having hepatic resection	1
Effect of Aprotinin on outcomes	2
Economic study	1
Predictors of transplantation without transfusion	1
Assessed a behavioral scale as predictor of mortality	1
Assessed MELD score for non transplant mortality	1
VAD	
No predictors of survival	7
Patient population was not a transplant population (cardiac surgery)	1
Only donor characteristics were analyzed	1
Patient group analyzed not specified	1
Abstract	1
Analyzed patients with VAD and inotropic support separately	1
Only predictors of inotropic support analyzed	1

Table 3: Reports Excluded (continued)

6 | FINAL – Emergency framework for rationing of blood for massively bleeding patients during a red phase of a blood shortage

Rationale for Exclusion	Number
ECMO	
Only assessed predictors of ARDS	1
Ruptured Abdominal Aortic Aneurysm	
No predictors stated	4
Assessed postoperative variables and mortality	2
Association with one variable and mortality (i.e. age/sex)	3(age) 1(sex)
Combined ruptured and elective or emergent	7
Compared outcomes for patients with COPD	1
No statistical tests used	1
Obstetrics	
Descriptive studies	14
Association with one variable and mortality (age)	1
No predictors of mortality stated	6
Association between predictors and morbidity	2
Combined outcome of mortality and “near miss”	1

Table 3: Reports Excluded (continued)

Rationale for Exclusion	Number
Gastroenterology	
No predictors of mortality	7
Descriptive studies	11
Only one predictor assessed (age)	1
Composite outcome used	3
Gastric cancer	1
Assessed association between PUD and liver cirrhosis	1
Case series of achalasia	1
No statistical tests	1

Systematic Review II

Medline Search Terms for Gastroenterology

- 1 gastrointestinal bleed\$.mp. (8568)
- 2 gastrointestinal blood loss\$.mp. (336)
- 3 gastrointestinal tract blood loss\$.mp. (5)
- 4 exp Gastrointestinal Hemorrhage/ (37489)
- 5 gastrointestinal hemorrhage\$.mp. (31115)
- 6 gastrointestinal haemorrhage\$.mp. (917)
- 7 hemorrhage\$, gastrointestinal.mp. (17)
- 8 haemorrhage\$, gastrointestinal.mp. (7)
- 9 hematochezia\$.mp. (640)
- 10 Hematemesis/ (1673)
- 11 hematemesis.mp. (2556)
- 12 hematemeses.mp. (48)
- 13 Melena/ (1603)
- 14 melena\$.mp. (2493)
- 15 rectal bleed\$.mp. (2095)
- 16 rectal blood loss\$.mp. (27)
- 17 rectal hemangioma\$.mp. (20)
- 18 rectum bleed\$.mp. (5)
- 19 rectal haemorrhage\$.mp. (32)
- 20 rectal hemorrhage\$.mp. (106)
- 21 colon bleed\$.mp. (9)
- 22 colonic bleed\$.mp. (115)
- 23 duodenal bleed\$.mp. (70)

- 24 Peptic Ulcer Hemorrhage/ (6341)
- 25 peptic ulcer hemorrhage\$.mp. (6356)
- 26 peptic ulcer haemorrhage\$.mp. (40)
- 27 hemorrhage\$, peptic ulcer.mp. (3)
- 28 stomach ulcer hemorrhage\$.mp. (2)
- 29 duodenal ulcer hemorrhage\$.mp. (38)
- 30 duodenal ulcer haemorrhage\$.mp. (9)
- 31 or/1-30 (43968)
- 32 exp Mortality/ (212912)
- 33 32 and 31 (1719)
- 34 limit 33 to english language (1378)
- 35 limit 34 to case reports (521)
- 36 34 not 35 (857)

Medline Search Terms for Gastroenterology and Massive Bleeding

- 1 gastrointestinal bleed\$.mp. (8572)
- 2 gastrointestinal blood loss\$.mp. (336)
- 3 gastrointestinal tract blood loss\$.mp. (5)
- 4 exp Gastrointestinal Hemorrhage/ (37508)
- 5 gastrointestinal hemorrhage\$.mp. (31136)
- 6 gastrointestinal haemorrhage\$.mp. (917)
- 7 hemorrhage\$, gastrointestinal.mp. (18)
- 8 haemorrhage\$, gastrointestinal.mp. (7)
- 9 hematochezia\$.mp. (642)
- 10 Hematemesis/ (1674)
- 11 hematemesis.mp. (2558)
- 12 hematemesises.mp. (48)
- 13 Melena/ (1603)
- 14 melena\$.mp. (2494)
- 15 rectal bleed\$.mp. (2098)
- 16 rectal blood loss\$.mp. (27)
- 17 rectal hemangioma\$.mp. (20)
- 18 rectum bleed\$.mp. (5)
- 19 rectal haemorrhage\$.mp. (32)
- 20 rectal hemorrhage\$.mp. (106)
- 21 colon bleed\$.mp. (9)
- 22 colonic bleed\$.mp. (115)
- 23 duodenal bleed\$.mp. (70)
- 24 Peptic Ulcer Hemorrhage/ (6341)
- 25 peptic ulcer hemorrhage\$.mp. (6356)
- 26 peptic ulcer haemorrhage\$.mp. (40)
- 27 hemorrhage\$, peptic ulcer.mp. (3)
- 28 stomach ulcer hemorrhage\$.mp. (2)

- 29 duodenal ulcer hemorrhage\$.mp. (38)
- 30 duodenal ulcer haemorrhage\$.mp. (9)
- 31 or/1-30 (43994)
- 32 massive blood transfusion\$.mp. (253)
- 33 massiv\$ transfus\$.mp. (642)
- 34 massive blood loss\$.mp. (378)
- 35 acute blood loss\$.mp. (563)
- 36 massive blood replacement\$.mp. (30)
- 37 whole blood transfus\$.mp. (228)
- 38 (massive\$ bleed\$ adj3 patient\$).mp. (160)
- 39 massive transfusion protocol\$.mp. (20)
- 40 massive transfusion practice\$.mp. (6)
- 41 large volume blood transfusion\$.mp. (6)
- 42 large volume transfusion\$.mp. (13)
- 43 massive bleed\$.mp. (1326)
- 44 massive hemorrhage\$.mp. (1556)
- 45 Blood Transfusion/ (47115)
- 46 Blood Component Transfusion/ (2192)
- 47 Erythrocyte Transfusion/ (4602)
- 48 Platelet Transfusion/ (3638)
- 49 or/45-48 (54046)
- 50 ((massive\$ or whole) adj4 (transfus\$ or replacement\$)).mp. (5774)
- 51 50 and 49 (1458)
- 52 or/32-44,51 (5452)
- 53 52 and 31 (913)
- 54 limit 53 to english language (567)
- 55 limit 54 to case reports (282)
- 56 54 not 55 (285)

Medline Search Terms for Trauma

- 1 civilian trauma\$.tw. (179)
- 2 exp "Wounds and Injuries"/ (574532)
- 3 Military Medicine/ (28722)
- 4 exp Naval Medicine/ (9376)
- 5 Military Personnel/ (19725)
- 6 War/ (20961)
- 7 iraq war, 2003 -/ (360)
- 8 or/3-7 (63914)
- 9 2 not 8 (565905)
- 10 1 or 9 (566029)
- 11 exp Mortality/ (213079)
- 12 massive blood loss\$.mp. (378)
- 13 acute blood loss\$.mp. (563)

- 14 (massive\$ bleed\$ adj3 patient\$).mp. (160)
- 15 massive bleed\$.mp. (1326)
- 16 massive hemorrhage\$.mp. (1556)
- 17 exp Hemorrhage/ (197818)
- 18 Hemorrhage\$.mp. (175553)
- 19 Haemorrhage\$.mp. (22516)
- 20 bleed\$.mp. (101691)
- 21 or/12-20 (295986)
- 22 11 and 21 and 10 (1608)
- 23 exp Neoplasms/ (2078572)
- 24 exp Carcinoma/ (392867)
- 25 or/23-24 (2078572)
- 26 22 not 25 (1482)
- 27 limit 26 to english language (1191)
- 28 limit 27 to case reports (485)
- 29 27 not 28 (706)

Medline In Process Search Terms for Trauma and Massive Bleeding

- 1 massive blood transfus\$.tw. (9)
- 2 massive transfus\$.tw. (30)
- 3 massive blood loss\$.tw. (15)
- 4 acute blood loss\$.tw. (8)
- 5 whole blood transfus\$.tw. (6)
- 6 (massive\$ bleed\$ adj3 patient\$).tw. (11)
- 7 massive bleed\$.tw. (69)
- 8 massive hemorrhage\$.tw. (62)
- 9 or/1-8 (188)
- 10 blood transfusion\$.tw. (1039)
- 11 blood component transfusion\$.tw. (5)
- 12 erythrocyte transfusion\$.tw. (13)
- 13 platelet transfusion\$.tw. (92)
- 14 or/10-13 (1139)
- 15 ((massive\$ or whole) adj4 (transfus\$ or replacement\$)).tw. (76)
- 16 15 and 14 (28)
- 17 16 or 9 (193)
- 18 civilian trauma\$.tw. (16)
- 19 trauma\$.tw. (8739)
- 20 "Wounds and Injuries".tw. (6)
- 21 or/18-20 (8743)
- 22 Military.tw. (1129)
- 23 Naval Medicine.tw. (1)
- 24 war.tw. (1055)
- 25 or/22-24 (2073)
- 26 21 not 25 (8519)
- 27 26 and 17 (21)
- 28 limit 27 to english language (19)
- 29 limit 28 to case reports (0)

30 from 28 keep 1-19 (19)

Medline Search Terms for Liver Transplantation

- 1 Liver Transplantation/ (33822)
- 2 liver transplant\$.tw. (29153)
- 3 transplant\$, liver.tw. (752)
- 4 hepatic transplant\$.tw. (898)
- 5 transplant\$, hepatic.tw. (98)
- 6 graft\$, liver.tw. (252)
- 7 liver graft\$.tw. (2451)
- 8 Transplants/ (1384)
- 9 Transplantation/ (6763)
- 10 or/8-9 (8128)
- 11 Liver/ (336160)
- 12 11 and 10 (162)
- 13 or/1-7,12 (39498)
- 14 exp Mortality/ (212912)
- 15 and/13-14 (3179)
- 16 limit 15 to english language (2862)
- 17 limit 16 to case reports (482)
- 18 16 not 17 (2380)

Medline Search Terms for Liver Transplantation and Massive Bleeding

- 1 massive blood transfusion\$.tw. (247)
- 2 massiv\$ transfus\$.tw. (611)
- 3 massive blood loss\$.tw. (370)
- 4 acute blood loss\$.tw. (549)
- 5 massive blood replacement\$.tw. (30)
- 6 whole blood transfus\$.tw. (226)
- 7 (massive\$ bleed\$ adj3 patient\$.tw. (148)
- 8 massive transfusion protocol\$.tw. (17)
- 9 massive transfusion practice\$.tw. (6)
- 10 large volume blood transfusion\$.tw. (6)
- 11 large volume transfusion\$.tw. (13)
- 12 massive bleed\$.tw. (1270)
- 13 massive hemorrhage\$.tw. (1517)
- 14 Blood Transfusion/ (46385)
- 15 Blood Component Transfusion/ (2117)
- 16 Erythrocyte Transfusion/ (4435)
- 17 Platelet Transfusion/ (3561)
- 18 or/14-17 (53054)
- 19 ((massive\$ or whole) adj4 (transfus\$ or replacement\$)).mp. (5691)
- 20 18 and 19 (1413)
- 21 or/1-13,20 (5295)
- 22 Liver Transplantation/ (32931)
- 23 liver transplant\$.tw. (28287)

- 24 transplant\$, liver.tw. (732)
- 25 hepatic transplant\$.tw. (886)
- 26 transplant\$, hepatic.tw. (96)
- 27 graft\$, liver.tw. (246)
- 28 liver graft\$.tw. (2390)
- 29 Transplants/ (1315)
- 30 Transplantation/ (6657)
- 31 or/29-30 (7954)
- 32 Liver/ (330804)
- 33 32 and 31 (161)
- 34 or/22-28,33 (38432)
- 35 34 and 21 (104)
- 36 limit 35 to english language (84)
- 37 limit 36 to case reports (25)
- 38 36 not 37 (59)

Medline Search Terms for Heart and Lung Transplantation

- 1 Heart Transplantation/ (25081)
- 2 Heart-Lung Transplantation/ (1767)
- 3 cardiac transplant\$.tw. (7355)
- 4 transplant\$, cardiac.tw. (148)
- 5 heart transplant\$.tw. (13048)
- 6 transplant\$, heart.tw. (778)
- 7 graft\$, heart.tw. (61)
- 8 heart-lung transplant\$.tw. (1545)
- 9 transplant\$, heart-lung.tw. (15)
- 10 graft\$, heart-lung.tw. (0)
- 11 or/1-10 (30168)
- 12 Transplants/ (1384)
- 13 Transplantation/ (6763)
- 14 or/12-13 (8128)
- 15 Heart/ (108165)
- 16 (heart adj2 lung).tw. (11378)
- 17 or/15-16 (118537)
- 18 17 and 14 (130)
- 19 or/11,18 (30255)
- 20 exp Mortality/ (212912)
- 21 19 and 20 (2207)
- 22 limit 21 to (english language and humans) (1927)
- 23 limit 22 to case reports (279)
- 24 22 not 23 (1648)

Medline Search Terms for Lung Transplantation

- 1 Lung Transplantation/ (9057)
- 2 graft\$, lung\$.mp. (61)
- 3 lung\$ graft\$.mp. (290)

- 4 transplant\$, lung\$.mp. (651)
- 5 lung transplant\$.mp. (11588)
- 6 lung\$ transplant\$.mp. (11592)
- 7 or/1-6 (11671)
- 8 exp Lung/ (191346)
- 9 exp Bronchi/ (30809)
- 10 Bronchioles/ (58)
- 11 exp Pulmonary Alveoli/ (20902)
- 12 bronchus\$.mp. (8261)
- 13 or/8-12 (195758)
- 14 Transplants/ (1432)
- 15 Transplantation/ (6701)
- 16 Organ Transplantation/ (7272)
- 17 or/14-16 (15116)
- 18 13 and 17 (121)
- 19 or/7,18 (11772)
- 20 exp Mortality/ (214838)
- 21 19 and 20 (1013)
- 22 limit 21 to (english language and humans) (893)
- 23 limit 22 to case reports (175)
- 24 22 not 23 (718)

Medline Search Terms for Heart and Lung Transplantation and Massive Bleeding

- 1 massive blood transfusion\$.tw. (247)
- 2 massiv\$ transfus\$.tw. (611)
- 3 massive blood loss\$.tw. (370)
- 4 acute blood loss\$.tw. (549)
- 5 massive blood replacement\$.tw. (30)
- 6 whole blood transfus\$.tw. (226)
- 7 (massive\$ bleed\$ adj3 patient\$.tw. (148)
- 8 massive transfusion protocol\$.tw. (17)
- 9 massive transfusion practice\$.tw. (6)
- 10 large volume blood transfusion\$.tw. (6)
- 11 large volume transfusion\$.tw. (13)
- 12 massive bleed\$.tw. (1270)
- 13 massive hemorrhage\$.tw. (1517)
- 14 Blood Transfusion/ (46385)
- 15 Blood Component Transfusion/ (2117)
- 16 Erythrocyte Transfusion/ (4435)
- 17 Platelet Transfusion/ (3561)
- 18 or/14-17 (53054)
- 19 ((massive\$ or whole) adj4 (transfus\$ or replacement\$)).mp. (5691)
- 20 18 and 19 (1413)
- 21 or/1-13,20 (5295)
- 22 Heart Transplantation/ (24622)
- 23 Heart-Lung Transplantation/ (1736)
- 24 cardiac transplant\$.tw. (7219)

- 25 transplant\$, cardiac.tw. (137)
- 26 heart transplant\$.tw. (12742)
- 27 transplant\$, heart.tw. (769)
- 28 graft\$, heart.tw. (59)
- 29 heart-lung transplant\$.tw. (1520)
- 30 transplant\$, heart-lung.tw. (15)
- 31 graft\$, heart-lung.tw. (0)
- 32 or/22-31 (29580)
- 33 Transplants/ (1315)
- 34 Transplantation/ (6657)
- 35 or/33-34 (7954)
- 36 Heart/ (106350)
- 37 (heart adj2 lung).tw. (11092)
- 38 or/36-37 (116452)
- 39 38 and 35 (129)
- 40 or/32,39 (29667)
- 41 21 and 40 (21)
- 42 limit 41 to english language (20)
- 43 limit 42 to case reports (9)
- 44 42 not 43 (11)

Medline Search Terms for Ruptured Aortic Aneurysm

- 1 exp Mortality/ (212912)
- 2 Aortic Aneurysm, Abdominal/ (9872)
- 3 abdominal aortic aneurysm\$.tw. (9129)
- 4 aortic aneurysm\$, abdominal.tw. (10)
- 5 aneurysm\$, abdominal aortic.tw. (11)
- 6 or/2-5 (12766)
- 7 6 and 1 (1184)
- 8 limit 7 to english language (1035)
- 9 limit 8 to case reports (187)
- 10 8 not 9 (848)

Medline Search Terms for Ruptured Aortic Aneurysm and Massive Bleeding

- 1 massive blood transfusion\$.tw. (247)
- 2 massiv\$ transfus\$.tw. (611)
- 3 massive blood loss\$.tw. (370)
- 4 acute blood loss\$.tw. (549)
- 5 massive blood replacement\$.tw. (30)
- 6 whole blood transfus\$.tw. (226)
- 7 (massive\$ bleed\$ adj3 patient\$.tw. (148)
- 8 massive transfusion protocol\$.tw. (17)
- 9 massive transfusion practice\$.tw. (6)
- 10 large volume blood transfusion\$.tw. (6)
- 11 large volume transfusion\$.tw. (13)
- 12 massive bleed\$.tw. (1270)

- 13 massive hemorrhage\$.tw. (1517)
- 14 Blood Transfusion/ (46385)
- 15 Blood Component Transfusion/ (2117)
- 16 Erythrocyte Transfusion/ (4435)
- 17 Platelet Transfusion/ (3561)
- 18 or/14-17 (53054)
- 19 ((massive\$ or whole) adj4 (transfus\$ or replacement\$)).mp. (5691)
- 20 18 and 19 (1413)
- 21 or/1-13,20 (5295)
- 22 Aortic Aneurysm, Abdominal/ (9563)
- 23 abdominal aortic aneurysm\$.tw. (8871)
- 24 aortic aneurysm\$, abdominal.tw. (10)
- 25 aneurysm\$, abdominal aortic.tw. (11)
- 26 or/22-25 (12414)
- 27 21 and 26 (40)
- 28 limit 27 to english language (33)
- 29 limit 28 to case reports (14)
- 30 28 not 29 (19)

Medline Search Terms for Obstetrics

- 1 massive blood loss\$.tw. (378)
- 2 acute blood loss\$.tw. (563)
- 3 (massive\$ bleed\$ adj3 patient\$).tw. (160)
- 4 massive bleed\$.tw. (1326)
- 5 massive hemorrhage\$.tw. (1556)
- 6 exp Hemorrhage/ (197818)
- 7 hemorrhage\$.mp. (175553)
- 8 haemorrhage\$.mp. (22516)
- 9 bleed\$.mp. (101691)
- 10 or/1-9 (295986)
- 11 exp Mortality/ (213079)
- 12 Mothers/ (18584)
- 13 mother\$.mp. (126700)
- 14 maternal\$.mp. (171567)
- 15 or/12-14 (254417)
- 16 11 and 10 and 15 (1528)
- 17 exp Carcinoma/ (392867)
- 18 exp Neoplasms/ (2078572)
- 19 or/17-18 (2078572)
- 20 16 not 19 (1492)
- 21 limit 20 to case reports (110)
- 22 20 not 21 (1382)
- 23 limit 22 to english language (1135)
- 24 from 23 keep 1-100 (100)
- 25 neonate mortality.mp. (8)
- 26 exp Infant, Newborn/ (429678)
- 27 23 not 26 (718)

Medline Search Terms for Obstetrics and Massive Bleeding

- 1 massive blood transfusion\$.tw. (247)
- 2 massiv\$ transfus\$.tw. (611)
- 3 massive blood loss\$.tw. (370)
- 4 acute blood loss\$.tw. (549)
- 5 massive blood replacement\$.tw. (30)
- 6 whole blood transfus\$.tw. (226)
- 7 (massive\$ bleed\$ adj3 patient\$).tw. (148)
- 8 massive transfusion protocol\$.tw. (17)
- 9 massive transfusion practice\$.tw. (6)
- 10 large volume blood transfusion\$.tw. (6)
- 11 large volume transfusion\$.tw. (13)
- 12 massive bleed\$.tw. (1270)
- 13 massive hemorrhage\$.tw. (1517)
- 14 Blood Transfusion/ (46385)
- 15 Blood Component Transfusion/ (2117)
- 16 Erythrocyte Transfusion/ (4435)
- 17 Platelet Transfusion/ (3561)
- 18 or/14-17 (53054)
- 19 ((massive\$ or whole) adj4 (transfus\$ or replacement\$)).mp. (5691)
- 20 18 and 19 (1413)
- 21 or/1-13,20 (5295)
- 22 Obstetrics/ (13026)
- 23 obstetric\$.tw. (51232)
- 24 exp Obstetric Surgical Procedures/ (86979)
- 25 obstetric\$ surgical procedure\$.tw. (11)
- 26 obstetric\$ surger\$.tw. (248)
- 27 procedure\$, obstetric\$ surgical.tw. (0)
- 28 surgical procedure\$, obstetric\$.tw. (1)
- 29 surger\$, obstetric\$.tw. (83)
- 30 exp Pregnancy Complications/ (274045)
- 31 or/22-30 (362539)
- 32 21 and 31 (398)
- 33 limit 32 to english language (248)
- 34 limit 33 to case reports (117)
- 35 33 not 34 (131)

Medline Search for Extracorporeal Membrane Oxygenation

- 1 Extracorporeal Membrane Oxygenation/ (3581)
- 2 Extracorporeal Membrane Oxygenat\$.mp. (4331)
- 3 oxygenat\$, extracorporeal membrane.mp. (5)
- 4 membrane oxygenat\$, extracorporeal.mp. (9)
- 5 ECMO.mp. (2104)
- 6 or/1-5 (4489)
- 7 exp Mortality/ (215587)
- 8 6 and 7 (616)
- 9 limit 8 to english language (584)
- 10 limit 9 to case reports (119)
- 11 9 not 10 (465)

Medline Search for Ventricular Assist Device

- 1 Heart-Assist Devices/ (6089)
- 2 heart assist device\$.mp. (6130)
- 3 vascular assist device\$.mp. (1)
- 4 vascular assist pump\$.mp. (0)
- 5 heart assist pump\$.mp. (3)
- 6 left ventric\$ assist device\$.mp. (2138)
- 7 LVAD.mp. (1115)
- 8 ventric\$ assist device\$.mp. (3608)
- 9 artificial ventric\$.mp. (111)
- 10 (artificial adj1 ventric\$).mp. (119)
- 11 ventric\$, artificial.mp. (9)
- 12 artificial heart ventric\$.mp. (27)
- 13 exp Assisted Circulation/ (10960)
- 14 assist\$ circulation.mp. (3274)
- 15 circulation, assist\$.mp. (20)
- 16 (assist\$ adj circulation).mp. (3274)
- 17 or/1-16 (11659)
- 18 exp Mortality/ (218784)
- 19 17 and 18 (843)
- 20 limit 19 to english language (779)
- 21 limit 20 to case reports (119)
- 22 20 not 21 (660)