Table I: Demographics of Respondents

	Anesthesiologist	Perfusionist
Specialty	886	516
Leadership role (Yes)	541 (61)	307 (60)
Years of Practice		
0 – 4 years	128 (14)	31 (6)
5 – 9 years	156 (18)	42 (8)
10 – 14 years	149 (17)	57 (11)
15 – 19 years	168 (19)	94 (18)
≥ 20 years	285 (32)	292 (57)
Number of cardiac surgical cases personally performed		
< 100 cases / year	395 (45)	129 (25)
100 – 199 cases / year	315 (36)	328 (63)
200– 299 cases / year	108 (12)	47 (9)
≥ 300 cases / year	68 (8)	12 (2)
Type of Institution		
Academic, University affiliated institution	432 (49)	175 (34)
Non-academic institution with academic affiliation	185 (21)	145 (28)
Private practice without an academic affiliation	269 (30)	196 (38)
Number of cardiac surgical cases performed at institution		
< 200 cases / year	162 (18)	123 (24)
200– 399 cases / year	207 (23)	112 (22)
400 – 599 cases / year	150 (17)	99 (19)
600 – 799 cases / year	93 (11)	43 (8)
≥ 800 cases / year	274 (31)	139 (27)
Country		
USA	641	436
Canada	60	61
United Kingdom	30	1
Germany	14	1
Netherlands	16	4
Belgium	9	1
Other Europe	30	3
Australia / New Zealand	32	1
Mexico and South America	19	1
Asia (all countries)	19	5
All other countries	4	1
Did respondent read the STS / SCA Guidelines		
Yes – all of the Guidelines	297 (33)	127 (25)
Yes – part of the Guidelines	313 (35)	154 (30)
A Summary of the Guidelines	81 (9)	66 (13)
No	195 (22)	169 (33)

Results are reported as N (%)

Table 2: Institutional Response to Guidelines

	Anesthesiologist	Perfusionist
A formal Institutional Discussion of the Guidelines		
Yes	179 (20)	110 (21)
No	567 (64)	239 (46)
Don't know	140 (16)	167 (32)
Who participated in the Institutional Discussion (within each professional group) in the respondents who said an institutional discussion was held		
Surgeons	153 (94)	99 (88)
Anesthesiologists	177 (100)	101 (90)
Perfusionists	129 (74)	106 (95)
Blood bankers	101 (73)	67 (60)
Nurses	70 (88)	57 (51)
Others	32 (68)	30 (27)
A formal Institutional Multidisciplinary Group set up to monitor effectiveness		
Yes	118 (13)	85 (16)
No	570 (64)	221 (43)
Don't know	198 (22)	210 (41)
Who participated in the Institutional Multidisciplinary Group (within each professional group) in the respondents who said an institutional discussion was held		
Surgeons	103 (87)	69 (79)
Anesthesiologists	110 (93)	68 (78)
Perfusionists	70 (59)	74 (85)
Blood bankers	83 (70)	59 (68)
Nurses	56 (47)	44 (51)
Others	39 (33)	27 (31)
Were any changes in clinical practice implemented?		
Yes	206 (25)	137 (27)
No	425 (51)	199 (40)
Don't know	206 (25)	162 (33)

Results are reported as N (%)

Table 3A: Preoperative Hemostatic Assessment - Responses by Perfusionists

	Already	New	Unrelated	No
Routinely perform a screening preoperative bleeding time or equivalent test (e.g. PFA-100) in all patients. §	298 (61)	6 (1)	7 (1)	175 (36)
Routinely perform a screening preoperative bleeding time or equivalent test (e.g. PFA-100) in patients who have received preoperative antiplatelet drugs. §	290 (61)	13 (3)	10 (2)	162 (34)
Routinely perform another laboratory screening assessment of platelet or hemostatic function (apart from PTT, INR and platelet count) in all patients §	244 (50)	13 (3)	7 (1)	227 (46)

Table 3B: Preoperative Hemostatic Assessment - Responses by Anesthesiologists

	Already	New	Unrelated	No
Routinely perform a screening preoperative bleeding time or equivalent test (e.g. PFA-100) in all patients. §	159 (18)	11 (1)	13 (2)	681 (79)
Routinely perform a screening preoperative bleeding time or equivalent test (e.g. PFA-100) in patients who have received preoperative antiplatelet drugs. §	191 (23)	28 (3)	18 (2)	618 (72)
Routinely perform another laboratory screening assessment of platelet or hemostatic function (apart from PTT, INR and platelet count) in all patients §	296 (34)	17 (2)	11 (1)	540 (63)

Results are reported as N (%). Respondents were instructed to:

Please answer “Already” if you were already performing the test
Please answer "New" if you stopped as a result of the guidelines.
Please answer "Unrelated" if you stopped, not as a result of the guidelines.
Please answer “No” if you were not performing the test

§ P <0.0001 comparing responses by Perfusionists and Anesthesiologists

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Table 4A: Equipment or Practices used for Cardiopulmonary Bypass - Responses by Perfusionists

	Already	New	Unrelated	No
Routine use of a heparin-coated or other surface-modified cardiopulmonary bypass circuit §	396 (79)	14 (3)	20 (4)	69 (14)
Routine use of intraoperative red-cell saving	436 (87)	4 (1)	11 (2)	48 (10)
Routine use of leukocyte reduction filters in the CPB circuit. §	70 (14)	6 (1)	6 (1)	411 (83)
Routine use of an open venous reservoir §	403 (81)	1 (0)	11 (2)	81 (16)
Routine use of a closed venous reservoir §	94 (19)	3 (1)	15 (3)	377 (77)
Routine use of a centrifugal pump	288 (58)	8 (2)	13 (3)	189 (38)
Routine use of acute normovolemic hemodilution §	260 (53)	15 (3)	22 (4)	198 (40)
Routine use of lowered pump prime volume §	389 (78)	43 (9)	16 (3)	50 (10)
Routine practice of retrograde autologous priming of the CPB circuit §	282 (57)	43 (9)	16 (3)	154 (31)
Routine use of an intraoperative point-of-care hemostasis or platelet function test in all patients who are bleeding.	139 (28)	23 (5)	7 (1)	328 (66)
Routine use of an intraoperative point-of-care hemostasis or platelet function test in all patients.	109 (22)	13 (3)	9 (2)	363 (73)
Increased use of OPCAB surgery in order to decrease the need for transfusion	73 (15)	6 (1)	32 (6)	385 (78)
Routine use of heparin concentration monitoring in all cases *	205 (42)	10 (2)	6 (1)	272 (55)
Routine use of increased heparin concentrations or ACT levels	150 (30)	7 (1)	27 (5)	309 (63)
Routine use of decreased heparin concentrations or ACT levels	91 (19)	4 (1)	22 (4)	373 (76)

Table 4B: Equipment or Practices used for Cardiopulmonary Bypass - Responses by Anesthesiologists

	Already	New	Unrelated	No
Routine use of a heparin-coated or other surface-modified cardiopulmonary bypass circuit §	562 (65)	14 (2)	27 (3)	262 (30)
Routine use of intraoperative red-cell saving	726 (83)	14 (2)	26 (3)	113 (13)
Routine use of leukocyte reduction filters in the CPB circuit. §	433 (52)	21 (3)	37 (5)	342 (41)
Routine use of an open venous reservoir §	267 (35)	1 (0)	72 (10)	416 (55)
Routine use of a closed venous reservoir §	434 (56)	7 (1)	73 (9)	258 (33)
Routine use of a centrifugal pump	508 (61)	3 (0)	38 (5)	290 (34)
Routine use of acute normovolemic hemodilution §	334 (39)	24 (3)	39 (5)	451 (53)
Routine use of lowered pump prime volume §	544 (64)	56 (7)	43 (5)	209 (25)
Routine practice of retrograde autologous priming of the CPB circuit §	344 (41)	62 (7)	43 (5)	392 (47)
Routine use of an intraoperative point-of-care hemostasis or platelet function test in all patients who are bleeding.	252 (29)	46 (5)	36 (4)	534 (62)
Routine use of an intraoperative point-of-care hemostasis or platelet function test in all patients.	158 (19)	34 (4)	24 (3)	632 (75)
Increased use of OPCAB surgery in order to decrease the need for transfusion	185 (21)	15 (2)	65 (8)	602 (69)
Routine use of heparin concentration monitoring in all cases *	264 (31)	16 (2)	18 (2)	561 (65)
Routine use of increased heparin concentrations or ACT levels	299 (35)	17 (2)	52 (6)	477 (56)
Routine use of decreased heparin concentrations or ACT levels	181 (21)	12 (1)	43 (5)	605 (72)

Results are reported as N (%). Respondents were instructed to:

Please answer “Already” if you were already doing this.
Please answer "New" if this was a change in practice resulting from the guidelines.
Please answer "Unrelated" if this was a change in practice not resulting from the guidelines.
Please answer “No” if you do not use the technology

* P <0.001 comparing responses by Perfusionists and Anesthesiologists

§ P <0.0001 comparing responses by Perfusionists and Anesthesiologists

Table 5A: Institutional Transfusion Practices for Cardiac Surgery - Responses by Perfusionists

	Already	New	Unrelated	No
Reduced hematocrit or hemoglobin level cutoff for red cell transfusion	146 (30)	62 (13)	19 (4)	257 (53)
Increased hematocrit or hemoglobin level cutoff for red cell transfusion §	59 (12)	26 (5)	25 (5)	367 (77)
Transfuse all patients with a hemoglobin <6g/dL at any stage of the hospital stay	270 (57)	10 (2)	26 (6)	164 (35)
Transfuse all patients with a hemoglobin <7g/dL at any stage of the hospital stay	218 (47)	14 (3)	32 (7)	203 (43)
	Always	**Sometimes**	**Never**	**Don't know**
Routine institutional use of leukoreduced red cell transfusion for cardiac surgery? *	248 (51)	127 (26)	72 (15)	39 (8)
Routine institutional use of leukoreduced coagulation factors and platelets for cardiac surgery?	152 (31)	115 (24)	47 (10)	171 (35)

Table 5B: Institutional Transfusion Practices for Cardiac Surgery - Responses by Anesthesiologists

	Already	New	Unrelated	No
Reduced hematocrit or hemoglobin level cutoff for red cell transfusion	322 (37)	109 (13)	49 (6)	386 (45)
Increased hematocrit or hemoglobin level cutoff for red cell transfusion §	52 (6)	18 (2)	41 (5)	714 (87)
Transfuse all patients with a hemoglobin <6g/dL at any stage of the hospital stay	473 (56)	15 (2)	65 (8)	289 (34)
Transfuse all patients with a hemoglobin <7g/dL at any stage of the hospital stay	369 (43)	29 (3)	71 (8)	380 (45)
	Always	**Sometimes**	**Never**	**Don't know**
Routine institutional use of leukoreduced red cell transfusion for cardiac surgery? *	423 (48)	264 (30)	80 (9)	106 (12)
Routine institutional use of leukoreduced coagulation factors and platelets for cardiac surgery?	294 (34)	232 (27)	106 (12)	240 (28)

Results are reported as N (%). Respondents were instructed to:

Please answer "Already" if you were already doing this.
Please answer "New" if this was a change in practice resulting from the guidelines.
Please answer "Unrelated" if this was a change in practice not resulting from the guidelines.
Please answer "No" if you do not use the technique

* P <0.001 comparing responses by Perfusionists and Anesthesiologists

§ P <0.0001 comparing responses by Perfusionists and Anesthesiologists

Table 6: Institutional Examination of the Effect of Aprotinin Withdrawal

	Anesthesiologist	Perfusionist
Institutional Examination of the Effect of Aprotinin Withdrawal §		
Yes	117 (13)	88 (18)
No	635 (73)	242 (50)
Don't know	122 (14)	156 (32)

Results are reported as N (%).

§ P <0.0001 comparing responses by Perfusionists and Anesthesiologists

Table 7A: Institutional Guidelines and Use of Recombinant Factor VIIa (NovoSeven) use during Cardiac Surgery - Responses by Perfusionists

	Already	**New**	**Unrelated**	**No**
Use Factor VIIa as a rescue therapy in the setting of excessive, life-threatening bleeding that is unresponsive to routine therapy? §	249 (53)	43 (9)	39 (8)	141 (30)
Use Factor VIIa as a first-line therapy for bleeding	12 (3)	10 (2)	16 (4)	406 (91)
	Yes	**No**	**Don't know**	
Has your institution systematically examined the effect of Factor VIIa (Novoseven) upon renal failure and mortality? §	23 (5)	239 (50)	218 (45)	
Result of the Institutional assessment of NovoSeven use				
Never been available	3 (13)			
No longer used	0 (0)			
Use restricted by Guidelines or other check-points	18 (78)			
No restriction on use	2 (9)			

Table 7B: Institutional Guidelines and Use of Recombinant Factor VIIa (NovoSeven) use during Cardiac Surgery - Responses by Anesthesiologists

	Already	**New**	**Unrelated**	**No**
Use Factor VIIa as a rescue therapy in the setting of excessive, life-threatening bleeding that is unresponsive to routine therapy? §	612 (71)	63 (7)	57 (7)	132 (15)
Use Factor VIIa as a first-line therapy for bleeding	9 (1)	7 (1)	16 (2)	795 (96)
	Yes	**No**	**Don't know**	
Has your institution systematically examined the effect of Factor VIIa (Novoseven) upon renal failure and mortality? §	64 (7)	662 (76)	141 (16)	
Result of the Institutional assessment of NovoSeven use				
Never been available	1 (6)			
No longer used	4 (6)			
Use restricted by Guidelines or other check-points	49 (78)			
No restriction on use	9 (14)			

Results are reported as N (%). Respondents were instructed to:

Please answer “Already” if you were already doing this.
Please answer "New" if this was a change in practice resulting from the guidelines.
Please answer "Unrelated" if this was a change in practice not resulting from the guidelines.
Please answer “No” if you do not use Factor VIIa

† P<0.01 comparing responses by Perfusionists and Anesthesiologists

* P <0.001 comparing responses by Perfusionists and Anesthesiologists

§ P <0.0001 comparing responses by Perfusionists and Anesthesiologists

Table 8A: Pharmacologic Guidelines for Cardiac Surgery - Responses by Perfusionists

	Already	New	Unrelated	No
Routine use of EPO to improve the efficacy of autologous predonation	52 (12)	8 (2)	30 (7)	366 (80)
Routine use of EPO and iron in anemic patients undergoing elective surgery §	116 (26)	20 (4)	29 (6)	289 (64)
Routinely stop all oral antiplatelet agents (excluding aspirin) prior to elective surgery §	395 (84)	11 (2)	11 (2)	51 (11)
Routinely stop clopidogrel or ticlodipine for more than four days prior to elective surgery	343 (76)	10 (2)	35 (8)	62 (14)
Routinely continue aspirin until immediately prior to surgery in all patients	215 (48)	10 (2)	19 (4)	204 (46)
Routinely stop aspirin prior to elective surgery in patients without an acute coronary syndrome §	279 (62)	6 (1)	30 (7)	136 (30)
Routinely use DDAVP for bleeding †	89 (20)	12 (3)	33 (7)	321 (71)
Routinely use an antifibrinolytic such as Amicar or Tranexamic acid	413 (88)	13 (3)	15 (3)	28 (6)
Routinely use topical agents that employ bovine thrombin for hemostasis §	306 (67)	12 (3)	15 (3)	127 (28)

Table 8B: Pharmacologic Guidelines for Cardiac Surgery - Responses by Anesthesiologists

	Already	New	Unrelated	No
Routine use of EPO to improve the efficacy of autologous predonation	80 (9)	19 (2)	32 (4)	721 (85)
Routine use of EPO and iron in anemic patients undergoing elective surgery §	139 (16)	26 (3)	42 (5)	644 (76)
Routinely stop all oral antiplatelet agents (excluding aspirin) prior to elective surgery §	620 (72)	11 (1)	32 (4)	194 (23)
Routinely stop clopidogrel or ticlodipine for more than four days prior to elective surgery	677 (79)	16 (2)	38 (5)	127 (15)
Routinely continue aspirin until immediately prior to surgery in all patients	473 (56)	11 (1)	43 (5)	324 (38)
Routinely stop aspirin prior to elective surgery in patients without an acute coronary syndrome §	363 (43)	6 (1)	37 (4)	436 (52)
Routinely use DDAVP for bleeding †	131 (15)	17 (2)	35 (4)	672 (79)
Routinely use an antifibrinolytic such as Amicar or Tranexamic acid	731 (85)	24 (3)	28 (3)	79 (9)
Routinely use topical agents that employ bovine thrombin for hemostasis §	481 (57)	10 (1)	70 (8)	287 (34)

Results are reported as N (%). Respondents were instructed to:
Please answer “Already” if you were already doing this.

Please answer "New" if this was a change in practice resulting from the guidelines.
Please answer "Unrelated" if this was a change in practice not resulting from the guidelines.
Please answer “No” if you did not change your practice.

† P<0.01 comparing responses by Perfusionists and Anesthesiologists

* P <0.001 comparing responses by Perfusionists and Anesthesiologists

§ P <0.0001 comparing responses by Perfusionists and Anesthesiologists

Table 9A: Other Practices for Cardiac Surgery - Responses by Perfusionists

	Already	New	Unrelated	No
Routinely transfuse all pump blood back to the patient, either directly or washed in a cell saver §	454 (96)	2 (0)	1 (0)	15 (3)
Routinely wash all shed mediastinal blood from postoperative chest tube drainage prior to reinfusion	94 (20)	10 (2)	17 (4)	349 (74)
No longer routinely use PEEP as a routine therapy for bleeding §	106 (25)	6 (1)	50 (12)	267 (62)
No longer routinely use intraoperative platelet or plasmapheresis	136 (31)	8 (2)	33 (7)	266 (60)
No longer routinely use direct reinfusion of unwashed shed mediastinal blood from postoperative chest tube drainage	209 (46)	5 (1)	29 (6)	211 (46)

Table 9B: Other Practices for Cardiac Surgery - Responses by Anesthesiologists

	Already	New	Unrelated	No
Routinely transfuse all pump blood back to the patient, either directly or washed in a cell saver §	773 (89)	10 (1)	22 (3)	60 (7)
Routinely wash all shed mediastinal blood from postoperative chest tube drainage prior to reinfusion	224 (26)	13 (2)	33 (4)	580 (68)
No longer routinely use PEEP as a routine therapy for bleeding §	331 (39)	21 (2)	77 (9)	419 (49)
No longer routinely use intraoperative platelet or plasmapheresis	381 (45)	19 (2)	56 (7)	391 (46)
No longer routinely use direct reinfusion of unwashed shed mediastinal blood from postoperative chest tube drainage	435 (52)	18 (2)	48 (6)	339 (40)

Results are reported as N (%). Respondents were instructed to:

Please answer “Already” if you were already doing this.
Please answer "New" if this was a change in practice resulting from the guidelines.
Please answer "Unrelated" if this was a change in practice not resulting from the guidelines.
Please answer “No” if you do not use the technology

† P<0.01 comparing responses by Perfusionists and Anesthesiologists

* P <0.001 comparing responses by Perfusionists and Anesthesiologists

§ P <0.0001 comparing responses by Perfusionists and Anesthesiologists

Table 10: Effectiveness of Institutional Changes

	Anesthesiologist	Perfusionist
Were the changes your institution made effective in reducing overall transfusion rates? *		
Highly	60 (7)	50 (11)
Somewhat	241 (28)	162 (34)
Not at all	87 (10)	46 (10)
Increased transfusion	8 (1)	8 (2)
I do not know	289 (33)	148 (31)
We did not measure this	179 (21)	58 (12)
In your personal opinion, were the changes embraced by your specialty, at your institution †		
Highly	183 (22)	133 (30)
Somewhat	452 (54)	230 (51)
Not at all	204 (24)	85 (19)
In your personal opinion, were the changes embraced by other specialties, at your institution †		
Highly	82 (10)	55 (12)
Somewhat	481 (58)	279 (63)
Not at all	271 (32)	108 (24)

Results are reported as N (%).

† P<0.01 comparing responses by Perfusionists and Anesthesiologists

* P <0.001 comparing responses by Perfusionists and Anesthesiologists

Table 11: Use of Leukoreduced Red Cells by Country

	USA	Canada	Europe	Other countries
Routine institutional use of leukoreduced red cell transfusion for cardiac surgery? §				
Always	487 (47)	71 (61)	72 (72)	36 (39)
Sometimes	324 (31)	20 (17)	13 (12)	34 (37)
Never	108 (10)	17 (15)	10 (9)	17 (18)
Don't know	123 (13)	9 (8)	7 (7)	5 (5)
Routine institutional use of leukoreduced coagulation factors and platelets for cardiac surgery? §				
Always	321 (31)	47 (41)	55 (51)	23 (25)
Sometimes	271 (26)	25 (22)	19 (18)	32 (35)
Never	107 (10)	9 (8)	13 (12)	24 (26)
Don't know	343 (33)	35 (30)	20 (19)	12 (13)

Results are reported as N (%). Respondents were instructed to:

Please answer "Already" if you were already doing this.
Please answer "New" if this was a change in practice resulting from the guidelines.
Please answer "Unrelated" if this was a change in practice not resulting from the guidelines.
Please answer "No" if you do not use the technique

† P<0.01 comparing responses between countries or regions

* P <0.001 comparing responses between countries or regions

§ P <0.0001 comparing responses between countries or regions

Table 12A: Institutional Guidelines and Use of Recombinant Factor VIIa (NovoSeven) use during Cardiac Surgery - Responses from USA

	Already	New	Unrelated	No
Use Factor VIIa as a rescue therapy in the setting of excessive, life-threatening bleeding that is unresponsive to routine therapy? §	645 (63)	80 (9)	66 (6)	225 (22)
Use Factor VIIa as a first-line therapy for bleeding	19 (2)	14 (1)	29 (3)	913 (94)

	Yes	No	Don't know
Has your institution systematically examined the effect of Factor VIIa (Novoseven) upon renal failure and mortality? §	54 (5)	674 (65)	304 (29)

Result of the Institutional assessment of NovoSeven use	
Never been available	3 (6)
No longer used	3 (6)
Use restricted by Guidelines or other check-points	38 (72)
No restriction on use	9 (17)

Table 12B: Institutional Guidelines and Use of Recombinant Factor VIIa (NovoSeven) use during Cardiac Surgery - Responses from Canada

	Already	New	Unrelated	No
Use Factor VIIa as a rescue therapy in the setting of excessive, life-threatening bleeding that is unresponsive to routine therapy? §	90 (77)	7 (6)	8 (7)	12 (10)
Use Factor VIIa as a first-line therapy for bleeding	1 (1)	2 (2)	1 (1)	105 (96)

	Yes	No	Don't know
Has your institution systematically examined the effect of Factor VIIa (Novoseven) upon renal failure and mortality? §	14 (12)	63 (53)	43 (36)

Result of the Institutional assessment of NovoSeven use	
Never been available	1 (7)
No longer used	0 (0)
Use restricted by Guidelines or other check-points	12 (86)
No restriction on use	1 (7)

Table 12C: Institutional Guidelines and Use of Recombinant Factor VIIa (NovoSeven) use during Cardiac Surgery - Responses from Europe

	Already	New	Unrelated	No
Use Factor VIIa as a rescue therapy in the setting of excessive, life-threatening bleeding that is unresponsive to routine therapy? §	75 (70)	5 (5)	14 (13)	13 (12)
Use Factor VIIa as a first-line therapy for bleeding	1 (1)	0 (0)	2 (2)	99 (97)
	Yes	**No**	**Don't know**	
Has your institution systematically examined the effect of Factor VIIa (Novoseven) upon renal failure and mortality? §	8 (7)	93 (86)	7 (6)	
Result of the Institutional assessment of NovoSeven use				
Never been available	0 (0)			
No longer used	0 (0)			
Use restricted by Guidelines or other check-points	7 (88)			
No restriction on use	1 (13)			

Table 12D: Institutional Guidelines and Use of Recombinant Factor VIIa (NovoSeven) use during Cardiac Surgery - Responses from Other Countries

	Already	New	Unrelated	No
Use Factor VIIa as a rescue therapy in the setting of excessive, life-threatening bleeding that is unresponsive to routine therapy? §	52 (53)	6 (7)	8 (9)	23 (26)
Use Factor VIIa as a first-line therapy for bleeding	1(1)	1 (1)	0 (0)	85 (98)
	Yes	**No**	**Don't know**	
Has your institution systematically examined the effect of Factor VIIa (Novoseven) upon renal failure and mortality? §	11 (12)	71 (79)	8 (9)	
Result of the Institutional assessment of NovoSeven use				
Never been available	0 (0)			
No longer used	1 (9)			
Use restricted by Guidelines or other check-points	10 (91)			
No restriction on use	0 (0)			

Results are reported as N (%). Respondents were instructed to:

Please answer “Already” if you were already doing this.
Please answer "New" if this was a change in practice resulting from the guidelines.
Please answer "Unrelated" if this was a change in practice not resulting from the guidelines.
Please answer “No” if you do not use Factor VIIa

† P<0.01 comparing responses between countries or regions

* P <0.001 comparing responses between countries or regions

§ P <0.0001 comparing responses between countries or regions

Table 13A: Effectiveness of Institutional Changes

	Institutional discussion held	Institutional discussion not held or unknown
Were the changes your institution made effective in reducing overall transfusion rates? §		
Highly	46 (17)	64 (6)
Somewhat	136 (49)	267 (25)
Not at all	22 (8)	111 (10)
Increased transfusion	4 (1)	12 (1)
I do not know	48 (17)	389 (37)
We did not measure this	21 (8)	216 (20)
In your personal opinion, were the changes embraced by your specialty, at your institution §		
Highly	123 (45)	196 (19)
Somewhat	136 (50)	565 (54)
Not at all	15 (5)	280 (27)
In your personal opinion, were the changes embraced by other specialties, at your institution §		
Highly	55 (20)	84 (8)
Somewhat	182 (66)	595 (58)
Not at all	38 (14)	350 (34)

Results are reported as N (%).

§ P <0.0001 comparing whether or not an Institutional discussion group had been formed or not

Table 13B: Effectiveness of Institutional Changes

	Institutional monitoring group formed	Institutional monitoring group not formed or unknown
Were the changes your institution made effective in reducing overall transfusion rates?		
Highly	45 (23)	34 (4)
Somewhat	104 (54)	200 (26)
Not at all	10 (5)	97 (10)
Increased transfusion	2 (1)	11 (1)
I do not know	45 (17)	216 (29)
We did not measure this	21 (23)	199 (26)
In your personal opinion, were the changes embraced by your specialty, at your institution §		
Highly	105 (54)	120 (16)
Somewhat	84 (44)	385 (53)
Not at all	4 (2)	223 (31)
In your personal opinion, were the changes embraced by other specialties, at your institution §		
Highly	47 (24)	54 (7)
Somewhat	132 (68)	409 (55)
Not at all	15 (8)	276 (37)

Results are reported as N (%).

§ P <0.0001 comparing whether or not an Institutional monitoring group had been formed or not

Table 13C: Effectiveness of Institutional Changes

	Academic, University affiliated	Non-academic institution with academic affiliation	Private practice without an academic affiliation
Were the changes your institution made effective in reducing overall transfusion rates?			
Highly	47 (8)	29 (9)	34 (8)
Somewhat	162 (28)	108 (35)	133 (30)
Not at all	57 (10)	28 (9)	48 (10)
Increased transfusion	6 (1)	4 (1)	6 (1)
I do not know	197 (34)	100 (32)	140 (32)
We did not measure this	111 (19)	44 (14)	82 (19)
In your personal opinion, were the changes embraced by your specialty, at your institution			
Highly	124 (22)	86 (28)	106 (25)
Somewhat	306 (55)	155 (51)	221 (52)
Not at all	127 (23)	65 (21)	97 (23)
In your personal opinion, were the changes embraced by other specialties, at your institution			
Highly	48 (8)	46 (15)	43 (10)
Somewhat	334 (60)	181 (60)	245 (58)
Not at all	172 (31)	77 (25)	130 (31)

Results are reported as N (%).

Table 14: Variation in responses within Institutions (5 or more responses per institution)

Level	Number of responses
Canada 14	10
Canada 22	7
Canada 6	6
Canada 37	6
Canada 35	6
Canada 33	6
Canada 27	6
Canada 20	6
Canada 4	5
Canada 29	5
Canada 28	5
USA 213	13
USA 14	11
USA 332	10
USA 530	10
USA 13	9
USA 227	9
USA 374	8
USA 424	8
USA 167	7
USA 303	6
USA 506	6
USA 528	6
USA 112	5
USA 29	5
USA 362	5
USA 444	5
USA 591	5
USA 661	5
USA 758	5

The next section describes differences in practice change depending on whether an institutional discussion was held or not.

Table 15A: Preoperative Hemostatic Assessment - Respondents who said YES to formal Institutional Discussion of the Guidelines

	Already	New	Unrelated	No
Routinely perform a screening preoperative bleeding time or equivalent test (e.g. PFA-100) in all patients. §	110 (40)	8 (3)	3 (1)	155 (56)
Routinely perform a screening preoperative bleeding time or equivalent test (e.g. PFA-100) in patients who have received preoperative antiplatelet drugs. §	114 (42)	22 (8)	4 (1)	129 (50)
Routinely perform another laboratory screening assessment of platelet or hemostatic function (apart from PTT, INR and platelet count) in all patients §	126 (45)	15 (5)	2 (1)	134 (48)

Table 15B: Preoperative Hemostatic Assessment - Respondents who said NO to formal Institutional Discussion of the Guidelines

	Already	New	Unrelated	No
Routinely perform a screening preoperative bleeding time or equivalent test (e.g. PFA-100) in all patients. §	228 (29)	4 (1)	9 (1)	539 (69)
Routinely perform a screening preoperative bleeding time or equivalent test (e.g. PFA-100) in patients who have received preoperative antiplatelet drugs. §	242 (31)	13 (2)	15 (2)	503 (65)
Routinely perform another laboratory screening assessment of platelet or hemostatic function (apart from PTT, INR and platelet count) in all patients §	275 (35)	12 (2)	9 (1)	488 (62)

Results are reported as N (%). Respondents were instructed to:

Please answer “Already” if you were already performing the test

Please answer "New" if you stopped as a result of the guidelines.

Please answer "Unrelated" if you stopped, not as a result of the guidelines.

Please answer “No” if you were not performing the test

§ P <0.0001 comparing whether or not an Institutional discussion group had been formed or not

Table 16A: Equipment or Practices used for Cardiopulmonary Bypass - Respondents who said YES to formal Institutional Discussion of the Guidelines

	Already	New	Unrelated	No
Routine use of a heparin-coated or other surface-modified cardiopulmonary bypass circuit	200 (70)	10 (4)	11 (4)	63 (22)
Routine use of intraoperative red-cell saving	240 (85)	8 (3)	5 (2)	31 (11)
Routine use of leukocyte reduction filters in the CPB circuit.	115 (41)	12 (4)	3 (1)	148 (53)
Routine use of an open venous reservoir	133 (52)	0 (0)	23 (9)	98 (39)
Routine use of a closed venous reservoir	113 (43)	4 (2)	22 (8)	122 (47)
Routine use of a centrifugal pump	180 (65)	5 (2)	12 (4)	79 (29)
Routine use of acute normovolemic hemodilution §	148 (53)	21 (8)	10 (4)	98 (35)
Routine use of lowered pump prime volume §	194 (69)	45 (16)	5 (2)	36 (13)
Routine practice of retrograde autologous priming of the CPB circuit §	136 (49)	51 (18)	5 (2)	85 (31)
Routine use of an intraoperative point-of-care hemostasis or platelet function test in all patients who are bleeding. §	98 (35)	30 (11)	2 (1)	152 (54)
Routine use of an intraoperative point-of-care hemostasis or platelet function test in all patients. §	68 (24)	21 (8)	2 (1)	184 (67)
Increased use of OPCAB surgery in order to decrease the need for transfusion	57 (20)	9 (3)	20 (8)	196 (70)
Routine use of heparin concentration monitoring in all cases	117 (41)	7 (2)	4 (1)	155 (55)
Routine use of increased heparin concentrations or ACT levels	100 (36)	7 (3)	17 (6)	152 (55)
Routine use of decreased heparin concentrations or ACT levels	70 (25)	3 (1)	12 (4)	190 (69)

Results are reported as N (%). Respondents were instructed to:

Please answer “Already” if you were already doing this.

Please answer "New" if this was a change in practice resulting from the guidelines.

Please answer "Unrelated" if this was a change in practice not resulting from the guidelines.

Please answer “No” if you do not use the technology

Table 16B: Equipment or Practices used for Cardiopulmonary Bypass - Respondents who said NO to formal Institutional Discussion of the Guidelines

	Already	New	Unrelated	No
Routine use of a heparin-coated or other surface-modified cardiopulmonary bypass circuit	530 (67)	11 (1)	25 (3)	215 (28)
Routine use of intraoperative red-cell saving	664 (84)	8 (1)	19 (2)	102 (13)
Routine use of leukocyte reduction filters in the CPB circuit.	304 (40)	12 (2)	25 (3)	424 (55)
Routine use of an open venous reservoir	369 (51)	1 (0)	49 (7)	305 (42)
Routine use of a closed venous reservoir	312 (43)	4 (1)	50 (7)	360 (42)
Routine use of a centrifugal pump	457 (59)	4 (1)	26 (3)	287 (37)
Routine use of acute normovolemic hemodilution §	314 (40)	13 (2)	37 (5)	412 (53)
Routine use of lowered pump prime volume §	525 (67)	36 (5)	40 (5)	178 (22)
Routine practice of retrograde autologous priming of the CPB circuit §	350 (46)	36 (5)	37 (5)	345 (45)
Routine use of an intraoperative point-of-care hemostasis or platelet function test in all patients who are bleeding. §	211 (27)	29 (4)	27 (3)	522 (66)
Routine use of an intraoperative point-of-care hemostasis or platelet function test in all patients. §	136 (18)	17 (2)	23 (3)	600 (77)
Increased use of OPCAB surgery in order to decrease the need for transfusion	152 (19)	10 (1)	56 (7)	568 (72)
Routine use of heparin concentration monitoring in all cases	248 (32)	14 (2)	14 (2)	501 (64)
Routine use of increased heparin concentrations or ACT levels	249 (32)	14 (2)	43 (6)	467 (40)
Routine use of decreased heparin concentrations or ACT levels	143 (19)	8 (1)	40 (5)	578 (75)

Results are reported as N (%). Respondents were instructed to:

Please answer “Already” if you were already doing this.

Please answer "New" if this was a change in practice resulting from the guidelines.

Please answer "Unrelated" if this was a change in practice not resulting from the guidelines.

Please answer “No” if you do not use the technology

§ P <0.0001 comparing whether or not an Institutional discussion group had been formed or not

Table 17A: Institutional Transfusion Practices for Cardiac Surgery - Respondents who said YES to formal Institutional Discussion of the Guidelines

	Already	New	Unrelated	No
Reduced hematocrit or hemoglobin level cutoff for red cell transfusion §	108 (39)	87 (31)	8 (3)	77 (28)
Increased hematocrit or hemoglobin level cutoff for red cell transfusion	28 (11)	17 (6)	10 (4)	210 (79)
Transfuse all patients with a hemoglobin <6g/dL at any stage of the hospital stay *	164 (61)	12 (4)	18 (7)	77 (28)
Transfuse all patients with a hemoglobin <7g/dL at any stage of the hospital stay §	118 (44)	22 (8)	17 (6)	112 (42)
	Always	**Sometimes**	**Never**	**Don't know**
Routine institutional use of leukoreduced red cell transfusion for cardiac surgery?	146 (52)	90 (32)	24 (9)	22 (8)
Routine institutional use of leukoreduced coagulation factors and platelets for cardiac surgery?	116 (41)	75 (27)	32 (11)	58 (21)

Table 17B: Institutional Transfusion Practices for Cardiac Surgery - Respondents who said NO to formal Institutional Discussion of the Guidelines

	Already	New	Unrelated	No
Reduced hematocrit or hemoglobin level cutoff for red cell transfusion §	257 (33)	62 (8)	39 (5)	420 (54)
Increased hematocrit or hemoglobin level cutoff for red cell transfusion	61 (8)	17 (2)	34 (5)	642 (85)
Transfuse all patients with a hemoglobin <6g/dL at any stage of the hospital stay *	420 (55)	9 (1)	52 (7 ()	280 (37)
Transfuse all patients with a hemoglobin <7g/dL at any stage of the hospital stay §	351 (46)	13 (2)	54 (8)	345 (45)
	Always	**Sometimes**	**Never**	**Don't know**
Routine institutional use of leukoreduced red cell transfusion for cardiac surgery?	388 (49)	217 (28)	98 (13)	81 (10)
Routine institutional use of leukoreduced coagulation factors and platelets for cardiac surgery?	253 (32)	201 (26)	100 (13)	229 (29)

Results are reported as N (%). Respondents were instructed to:

Please answer "Already" if you were already doing this.
Please answer "New" if this was a change in practice resulting from the guidelines.
Please answer "Unrelated" if this was a change in practice not resulting from the guidelines.
Please answer "No" if you do not use the technique

* P <0.001 comparing whether or not an Institutional discussion group had been formed or not

§ P <0.0001 comparing whether or not an Institutional discussion group had been formed or not

Table 18: Institutional Examination of the Effect of Aprotinin Withdrawal – by response to formal Institutional Discussion of the Guidelines

	YES	NO
Institutional Examination of the Effect of Aprotinin Withdrawal †		
Yes	56 (20)	115 (15)
No	174 (62)	562 (72)
Don't know	52 (18)	108 (14)

Results are reported as N (%).

† P <0.01 comparing whether or not an Institutional examination of aprotinin withdrawal had been performed or not

Table 19A: Institutional Guidelines and Use of Recombinant Factor VIIa (NovoSeven) use during Cardiac Surgery - Respondents who said YES to formal Institutional Discussion of the Guidelines

	Already	**New**	**Unrelated**	**No**
Use Factor VIIa as a rescue therapy in the setting of excessive, life-threatening bleeding that is unresponsive to routine therapy?	194 (69)	25 (9)	14 (5)	47 (17)
Use Factor VIIa as a first-line therapy for bleeding	4 (2)	5 (2)	3 (1)	255 (96)
	Yes	**No**	**Don't know**	
Has your institution systematically examined the effect of Factor VIIa (Novoseven) upon renal failure and mortality?	28 (10)	194 (69)	59 (21)	
Result of the Institutional assessment of NovoSeven use				
Never been available	2 (7)			
No longer used	0 (0)			
Use restricted by Guidelines or other check-points	23 (82)			
No restriction on use	3 (11)			

Table 19B: Institutional Guidelines and Use of Recombinant Factor VIIa (NovoSeven) use during Cardiac Surgery - Respondents who said NO to formal Institutional Discussion of the Guidelines

	Already	**New**	**Unrelated**	**No**
Use Factor VIIa as a rescue therapy in the setting of excessive, life-threatening bleeding that is unresponsive to routine therapy?	489 (64)	58 (8)	55 (7)	168 (22)
Use Factor VIIa as a first-line therapy for bleeding	12 (2)	7 (1)	15 (2)	701 (95)
	Yes	**No**	**Don't know**	
Has your institution systematically examined the effect of Factor VIIa (Novoseven) upon renal failure and mortality?	52 (7)	578 (75)	145 (19)	
Result of the Institutional assessment of NovoSeven use				
Never been available	2 (4)			
No longer used	4 (8)			
Use restricted by Guidelines or other check-points	39 (75)			
No restriction on use	7 (13)			

Results are reported as N (%). Respondents were instructed to:
Please answer "Already" if you were already doing this.

Please answer "New" if this was a change in practice resulting from the guidelines.
Please answer "Unrelated" if this was a change in practice not resulting from the guidelines.
Please answer “No” if you do not use Factor VIIa

Table 20A: Pharmacologic Guidelines for Cardiac Surgery - Respondents who said YES to formal Institutional Discussion of the Guidelines

	Already	New	Unrelated	No
Routine use of EPO to improve the efficacy of autologous predonation	33 (12)	10 (4)	14 (5)	212 (79)
Routine use of EPO and iron in anemic patients undergoing elective surgery §	65 (24)	21 (8)	15 (6)	167 (62)
Routinely stop all oral antiplatelet agents (excluding aspirin) prior to elective surgery	212 (77)	9 (3)	5 (2)	50 (18)
Routinely stop clopidogrel or ticlodipine for more than four days prior to elective surgery †	224 (82)	10 (4)	11 (4)	28 (10)
Routinely continue aspirin until immediately prior to surgery in all patients	151 (56)	4 (1)	10 (4)	164 (39)
Routinely stop aspirin prior to elective surgery in patients without an acute coronary syndrome	136 (51)	4 (1)	9 (3)	120 (45)
Routinely use DDAVP for bleeding	53 (20)	9 (3)	11 (4)	197 (73)
Routinely use an antifibrinolytic such as Amicar or Tranexamic acid †	247 (89)	11 (4)	5 (2)	13 (5)
Routinely use topical agents that employ bovine thrombin for hemostasis	160 (59)	4 (1)	17 (6)	91 (33)

Table 20B: Pharmacologic Guidelines for Cardiac Surgery - Respondents who said YES to formal Institutional Discussion of the Guidelines

	Already	New	Unrelated	No
Routine use of EPO to improve the efficacy of autologous predonation	75 (10)	10 (1)	25 (3)	658 (86)
Routine use of EPO and iron in anemic patients undergoing elective surgery §	133 (17)	19 (2)	34 (4)	581 (76)
Routinely stop all oral antiplatelet agents (excluding aspirin) prior to elective surgery	566 (74)	11 (1)	29 (4)	163 (21)
Routinely stop clopidogrel or ticlodipine for more than four days prior to elective surgery †	584 (76)	11 (1)	42 (6)	127 (17)
Routinely continue aspirin until immediately prior to surgery in all patients	411 (54)	12 (2)	40 (5)	299 (39)
Routinely stop aspirin prior to elective surgery in patients without an acute coronary syndrome	356 (47)	6 (1)	39 (5)	358 (47)
Routinely use DDAVP for bleeding	112 (15)	13 (2)	39 (5)	603 (79)
Routinely use an antifibrinolytic such as Amicar or Tranexamic acid †	658 (85)	15 (2)	31 (4)	69 (9)
Routinely use topical agents that employ bovine thrombin for hemostasis	457 (60)	7 (1)	42 (6)	256 (34)

Results are reported as N (%). Respondents were instructed to:

Please answer “Already” if you were already doing this.
Please answer "New" if this was a change in practice resulting from the guidelines.
Please answer "Unrelated" if this was a change in practice not resulting from the guidelines.
Please answer “No” if you did not change your practice.

† P<0.01 comparing whether or not an Institutional discussion group had been formed or not

§ P <0.0001 comparing whether or not an Institutional discussion group had been formed or not

Table 21A: Other Practices for Cardiac Surgery - Respondents who said YES to formal Institutional Discussion of the Guidelines

	Already	New	Unrelated	No
Routinely transfuse all pump blood back to the patient, either directly or washed in a cell saver	254 (92)	6 (2)	6 (2)	11 (4)
Routinely wash all shed mediastinal blood from postoperative chest tube drainage prior to reinfusion *	65 (24)	13 (5)	8 (3)	188 (69)
No longer routinely use PEEP as a routine therapy for bleeding *	86 (32)	12 (5)	37 (14)	130 (49)
No longer routinely use intraoperative platelet or plasmapheresis *	110 (41)	15 (6)	22 (8)	121 (45)
No longer routinely use direct reinfusion of unwashed shed mediastinal blood from postoperative chest tube drainage	137 (51)	9 (3)	15 (6)	107 (40)

Table 21B: Other Practices for Cardiac Surgery - Respondents who said NO to formal Institutional Discussion of the Guidelines

	Already	New	Unrelated	No
Routinely transfuse all pump blood back to the patient, either directly or washed in a cell saver	710 (92)	5 (1)	12 (2)	47 (6)
Routinely wash all shed mediastinal blood from postoperative chest tube drainage prior to reinfusion *	183 (24)	5 (1)	29 (4)	550 (72)
No longer routinely use PEEP as a routine therapy for bleeding *	265 (35)	11 (2)	62(8)	412 (55)
No longer routinely use intraoperative platelet or plasmapheresis *	307 (41)	8 (1)	45 (6)	394 (52)
No longer routinely use direct reinfusion of unwashed shed mediastinal blood from postoperative chest tube drainage	372 (49)	8 (1)	39 (5)	336 (45)

Results are reported as N (%). Respondents were instructed to:

Please answer “Already” if you were already doing this.
Please answer "New" if this was a change in practice resulting from the guidelines.
Please answer "Unrelated" if this was a change in practice not resulting from the guidelines.
Please answer “No” if you do not use the technology

* P <0.001 comparing whether or not an Institutional discussion group had been formed or not

This section describes whether the type of institution made a difference.

Table 22A: Preoperative Hemostatic Assessment - Responses by Academic University affiliated respondents

	Already	New	Unrelated	No
Routinely perform a screening preoperative bleeding time or equivalent test (e.g. PFA-100) in all patients. §	154 (26)	4 (1)	11 (2)	422 (71)
Routinely perform a screening preoperative bleeding time or equivalent test (e.g. PFA-100) in patients who have received preoperative antiplatelet drugs. §	166 (28)	10 (2)	14 (2)	395 (68)
Routinely perform another laboratory screening assessment of platelet or hemostatic function (apart from PTT, INR and platelet count) in all patients †	210 (36)	8 (1)	8 (1)	364 (62)

Table 22B: Preoperative Hemostatic Assessment - Responses by Non-academic, affiliated respondents

	Already	New	Unrelated	No
Routinely perform a screening preoperative bleeding time or equivalent test (e.g. PFA-100) in all patients. §	121 (39)	6 (2)	3 (1)	183 (58)
Routinely perform a screening preoperative bleeding time or equivalent test (e.g. PFA-100) in patients who have received preoperative antiplatelet drugs. §	131 (43)	13 (4)	3 (1)	161 (52)
Routinely perform another laboratory screening assessment of platelet or hemostatic function (apart from PTT, INR and platelet count) in all patients †	136 (43)	13 (4)	1 (0)	167 (53)

Table 22C: Preoperative Hemostatic Assessment - Responses by Private practice respondents

	Already	New	Unrelated	No
Routinely perform a screening preoperative bleeding time or equivalent test (e.g. PFA-100) in all patients. §	182 (41)	7 (2)	6 (1)	251 (56)
Routinely perform a screening preoperative bleeding time or equivalent test (e.g. PFA-100) in patients who have received preoperative antiplatelet drugs. §	184 (43)	18 (4)	11 (3)	218 (51)
Routinely perform another laboratory screening assessment of platelet or hemostatic function (apart from PTT, INR and platelet count) in all patients †	194 (43)	9 (2)	9 (2)	236 (53)

Results are reported as N (%). Respondents were instructed to:

Please answer “Already” if you were already performing the test
Please answer "New" if you stopped as a result of the guidelines.
Please answer "Unrelated" if you stopped, not as a result of the guidelines.
Please answer “No” if you were not performing the test

† P<0.01 comparing Institutional affiliation

§ P <0.0001 comparing Institutional affiliation

Table 23A: Equipment or Practices used for Cardiopulmonary Bypass - Responses by Academic University affiliated respondents

	Already	New	Unrelated	No
Routine use of a heparin-coated or other surface-modified cardiopulmonary bypass circuit	390 (66)	9 (2)	22 (4)	166 (28)
Routine use of intraoperative red-cell saving §	461 (78)	10 (2)	21 (4)	102 (17)
Routine use of leukocyte reduction filters in the CPB circuit.	231 (40)	9 (2)	20 (3)	317 (55)
Routine use of an open venous reservoir	287 (52)	0 (0)	37 (7)	224 (41)
Routine use of a closed venous reservoir	224 (41)	2 (0)	42 (8)	281 (51)
Routine use of a centrifugal pump §	295 (51)	5 (1)	28 (5)	256 (44)
Routine use of acute normovolemic hemodilution	229 (39)	20 (3)	30 (5)	309 (53)
Routine use of lowered pump prime volume	387 (66)	43 (7)	27 (5)	125 (21)
Routine practice of retrograde autologous priming of the CPB circuit	267 (46)	39 (7)	33 (6)	243 (42)
Routine use of an intraoperative point-of-care hemostasis or platelet function test in all patients who are bleeding.	185 (31)	33 (6)	23 (4)	348 (59)
Routine use of an intraoperative point-of-care hemostasis or platelet function test in all patients.	124 (21)	20 (3)	16 (3)	423 (73)
Increased use of OPCAB surgery in order to decrease the need for transfusion†	89 (15)	6 (1)	42 (8)	455 (77)
Routine use of heparin concentration monitoring in all cases §	160 (27)	9 (2)	12 (2)	409 (69)
Routine use of increased heparin concentrations or ACT levels	189 (33)	10 (2)	36 (6)	342 (59)
Routine use of decreased heparin concentrations or ACT levels	113 (19)	6 (1)	27 (5)	434 (75)

Table 23B: Equipment or Practices used for Cardiopulmonary Bypass - Responses by Non-academic, affiliated respondents

	Already	New	Unrelated	No
Routine use of a heparin-coated or other surface-modified cardiopulmonary bypass circuit	227 (71)	9 (3)	11 (3)	75 (23)
Routine use of intraoperative red-cell saving §	282 (87)	5 (2)	8 (2)	30 (9)
Routine use of leukocyte reduction filters in the CPB circuit.	105 (34)	5 (2)	8 (3)	195 (62)
Routine use of an open venous reservoir	160 (53)	0 (0)	20 (7)	121 (40)
Routine use of a closed venous reservoir	130 (44)	3 (1)	19 (6)	145 (49)
Routine use of a centrifugal pump §	199 (64)	4 (1)	9 (3)	100 (32)
Routine use of acute normovolemic hemodilution	152 (49)	5 (2)	13 (4)	141 (45)
Routine use of lowered pump prime volume	229 (72)	28 (9)	9 (3)	52 (16)
Routine practice of retrograde autologous priming of the CPB circuit	157 (50)	30 (10)	7 (2)	121 (38)
Routine use of an intraoperative point-of-care hemostasis or platelet function test in all patients who are bleeding.	88 (27)	16 (5)	3 (1)	214 (67)
Routine use of an intraoperative point-of-care hemostasis or platelet function test in all patients.	59 (19)	10 (3)	4 (1)	242 (77)
Increased use of OPCAB surgery in order to decrease the need for transfusion†	64 (20)	8 (3)	28 (9)	219 (69)
Routine use of heparin concentration monitoring in all cases §	116 (37)	6 (2)	2 (1)	192 (61)
Routine use of increased heparin concentrations or ACT levels	107 (34)	4 (1)	18 (6)	184 (59)
Routine use of decreased heparin concentrations or ACT levels	62 (20)	4 (1)	15 (5)	233 (74)

Table 23C: Equipment or Practices used for Cardiopulmonary Bypass - Responses by Private practice respondents

	Already	New	Unrelated	No
Routine use of a heparin-coated or other surface-modified cardiopulmonary bypass circuit	341 (75)	10 (2)	14 (3)	90 (20)
Routine use of intraoperative red-cell saving §	419 (91)	3 (1)	8 (2)	29 (6)
Routine use of leukocyte reduction filters in the CPB circuit.	176 (38)	13 (3)	16 (4)	241 (55)
Routine use of an open venous reservoir	223 (55)	2 (1)	26 (6)	152 (38)
Routine use of a closed venous reservoir	174 (42)	5 (1)	27 (7)	209 (50)
Routine use of a centrifugal pump §	302 (68)	2 (0)	14 (3)	123 (28)
Routine use of acute normovolemic hemodilution	213 (48)	14 (3)	18 (4)	199 (45)
Routine use of lowered pump prime volume	317 (70)	28 (6)	23 (5)	82 (18)
Routine practice of retrograde autologous priming of the CPB circuit	202 (46)	36 (8)	19 (4)	182 (42)
Routine use of an intraoperative point-of-care hemostasis or platelet function test in all patients who are bleeding.	118 (26)	20 (4)	16 (4)	300 (66)
Routine use of an intraoperative point-of-care hemostasis or platelet function test in all patients.	84 (19)	17 (4)	13 (3)	330 (74)
Increased use of OPCAB surgery in order to decrease the need for transfusion†	105 (23)	7 (2)	27 (6)	313 (69)
Routine use of heparin concentration monitoring in all cases §	193 (43)	11 (2)	10 (2)	232 (52)
Routine use of increased heparin concentrations or ACT levels	153 (34)	10 (2)	25 (6)	260 (58)
Routine use of decreased heparin concentrations or ACT levels	97 (22)	6 (1)	23 (5)	311 (71)

Results are reported as N (%). Respondents were instructed to:

Please answer “Already” if you were already doing this.
Please answer "New" if this was a change in practice resulting from the guidelines.
Please answer "Unrelated" if this was a change in practice not resulting from the guidelines.
Please answer “No” if you do not use the technology

† P<0.01 comparing Institutional affiliation

§ P <0.0001 comparing Institutional affiliation

Table 24A: Institutional Transfusion Practices for Cardiac Surgery - Responses by Academic University affiliated respondents

	Already	New	Unrelated	No
Reduced hematocrit or hemoglobin level cutoff for red cell transfusion †	221 (38)	59 (10	30 (5)	276 (47)
Increased hematocrit or hemoglobin level cutoff for red cell transfusion	53 (9)	21 (4)	31 (6)	456 (81)
Transfuse all patients with a hemoglobin <6g/dL at any stage of the hospital stay	325 (58)	9 (2)	37 (7)	193 (34)
Transfuse all patients with a hemoglobin <7g/dL at any stage of the hospital stay	266 (47)	19 (3)	35 (6)	247 (44)
	Always	**Sometimes**	**Never**	**Don't know**
Routine institutional use of leukoreduced red cell transfusion for cardiac surgery? §	322 (55)	169 (29)	49 (8)	47 (8)
Routine institutional use of leukoreduced coagulation factors and platelets for cardiac surgery? §	215 (38)	157 (27)	57 (10)	156 (27)

Table 24B: Institutional Transfusion Practices for Cardiac Surgery - Responses by Non-academic, affiliated respondents

	Already	New	Unrelated	No
Reduced hematocrit or hemoglobin level cutoff for red cell transfusion †	106 (34)	57 (18)	11 (3)	142 (45)
Increased hematocrit or hemoglobin level cutoff for red cell transfusion	26 (8)	12 (4)	12 (4)	260 (84)
Transfuse all patients with a hemoglobin <6g/dL at any stage of the hospital stay	180 (59)	6 (2)	19 (6)	100 (33)
Transfuse all patients with a hemoglobin <7g/dL at any stage of the hospital stay	134 (43)	9 (3)	32 (10)	135 (44)
	Always	**Sometimes**	**Never**	**Don't know**
Routine institutional use of leukoreduced red cell transfusion for cardiac surgery? §	152 (48)	94 (30)	43 (14)	28 (9)
Routine institutional use of leukoreduced coagulation factors and platelets for cardiac surgery? §	101 (32)	84 (26)	40 (13)	93 (29)

Table 24C: Institutional Transfusion Practices for Cardiac Surgery - Responses by Private practice respondents

	Already	**New**	**Unrelated**	**No**
Reduced hematocrit or hemoglobin level cutoff for red cell transfusion †	141 (31)	56 (12)	27 (6)	225 (50)
Increased hematocrit or hemoglobin level cutoff for red cell transfusion	32 (7)	11 (3)	23 (5)	365 (85)
Transfuse all patients with a hemoglobin <6g/dL at any stage of the hospital stay	238 (54)	10 (2)	35 (8)	160 (36)
Transfuse all patients with a hemoglobin <7g/dL at any stage of the hospital stay	187 (43)	15 (3)	36 (8)	201 (46)
	Always	**Sometimes**	**Never**	**Don't know**
Routine institutional use of leukoreduced red cell transfusion for cardiac surgery? §	197 (43)	128 (28)	60 (13)	70 (15)
Routine institutional use of leukoreduced coagulation factors and platelets for cardiac surgery? §	130 (29)	106 (23)	56 (12)	162 (36)

Results are reported as N (%). Respondents were instructed to:

Please answer "Already" if you were already doing this.
Please answer "New" if this was a change in practice resulting from the guidelines.
Please answer "Unrelated" if this was a change in practice not resulting from the guidelines.
Please answer "No" if you do not use the technique

† P<0.01 comparing Institutional affiliation

* P <0.001 comparing Institutional affiliation

§ P <0.0001 comparing Institutional affiliation

Table 25: Institutional Examination of the Effect of Aprotinin Withdrawal - by type of Institution of Respondent

	Academic, University affiliated	Non-academic institution with academic affiliation	Private practice without an academic affiliation
Institutional Examination of the Effect of Aprotinin Withdrawal			
Yes	105 (18)	48 (15	52 (11)
No	374 (64)	198 (62)	305 (67)
Don't know	109 (19)	72 (22)	97 (21)

Results are reported as N (%).

Table 26A: Institutional Guidelines and Use of Recombinant Factor VIIa (NovoSeven) use during Cardiac Surgery - Responses by Academic University affiliated respondents

	Already	**New**	**Unrelated**	**No**
Use Factor VIIa as a rescue therapy in the setting of excessive, life-threatening bleeding that is unresponsive to routine therapy? §	448 (77)	26 (4)	34 (6)	71 (12)
Use Factor VIIa as a first-line therapy for bleeding	13 (2)	7 (1)	14 (3)	520 (94)
	Yes	**No**	**Don't know**	
Has your institution systematically examined the effect of Factor VIIa (Novoseven) upon renal failure and mortality?	51 (9)	387 (66)	144 (25)	
Result of the Institutional assessment of NovoSeven use				
Never been available	1 (2)			
No longer used	1 (2)			
Use restricted by Guidelines or other check-points	41 (82)			
No restriction on use	7 (14)			

Table 26B: Institutional Guidelines and Use of Recombinant Factor VIIa (NovoSeven) use during Cardiac Surgery - Responses by Non-academic, affiliated respondents

	Already	**New**	**Unrelated**	**No**
Use Factor VIIa as a rescue therapy in the setting of excessive, life-threatening bleeding that is unresponsive to routine therapy? §	185 (59)	37 (12)	28 (9)	61 (20)
Use Factor VIIa as a first-line therapy for bleeding	4 (1)	8 (3)	6 (2)	276 (94)
	Yes	**No**	**Don't know**	
Has your institution systematically examined the effect of Factor VIIa (Novoseven) upon renal failure and mortality?	17 (5)	199 (63)	98 (31)	
Result of the Institutional assessment of NovoSeven use				
Never been available	1 (6)			
No longer used	1 (6)			
Use restricted by Guidelines or other check-points	13 (76)			
No restriction on use	2 (12)			

Table 26C: Institutional Guidelines and Use of Recombinant Factor VIIa (NovoSeven) use during Cardiac Surgery - Responses by Private practice respondents

	Already	**New**	**Unrelated**	**No**
Use Factor VIIa as a rescue therapy in the setting of excessive, life-threatening bleeding that is unresponsive to routine therapy? §	228 (51)	43 (10)	34 (8)	141 (32)
Use Factor VIIa as a first-line therapy for bleeding	4 (1)	2 (0)	12 (3)	405 (96)
	Yes	**No**	**Don't know**	
Has your institution systematically examined the effect of Factor VIIa (Novoseven) upon renal failure and mortality?	19 (4)	315 (70)	117 (26)	
Result of the Institutional assessment of NovoSeven use				
Never been available	2 (11)			
No longer used	2 (11)			
Use restricted by Guidelines or other check-points	13 (68)			
No restriction on use	2 (11)			

Results are reported as N (%). Respondents were instructed to:

Please answer "Already" if you were already doing this.
Please answer "New" if this was a change in practice resulting from the guidelines.
Please answer "Unrelated" if this was a change in practice not resulting from the guidelines.
Please answer "No" if you do not use Factor VIIa

† P<0.01 comparing Institutional affiliation

* P <0.001 comparing Institutional affiliation

§ P <0.0001 comparing Institutional affiliation

Table 27A: Pharmacologic Guidelines for Cardiac Surgery - Responses by Academic University affiliated respondents

	Already	New	Unrelated	No
Routine use of EPO to improve the efficacy of autologous predonation	50 (9)	13 (2)	19 (3)	491 (86)
Routine use of EPO and iron in anemic patients undergoing elective surgery	102 (18)	19 (3)	25 (4)	424 (74)
Routinely stop all oral antiplatelet agents (excluding aspirin) prior to elective surgery	417 (73)	7 (1)	19 (3)	130 (23)
Routinely stop clopidogrel or ticlodipine for more than four days prior to elective surgery	440 (78)	3 (1)	35 (6)	87 (15)
Routinely continue aspirin until immediately prior to surgery in all patients	284 (51)	8 (1)	28 (5)	242 (43)
Routinely stop aspirin prior to elective surgery in patients without an acute coronary syndrome	267 (48)	6 (1)	26 (5)	260 (47)
Routinely use DDAVP for bleeding	92 (16)	8 (1)	24 (4)	444 (78)
Routinely use an antifibrinolytic such as Amicar or Tranexamic acid	491 (85)	15 (3)	19 (3)	53 (9)
Routinely use topical agents that employ bovine thrombin for hemostasis †	322 (56)	3 (1)	39 (7)	206 (36)

Table 27B: Pharmacologic Guidelines for Cardiac Surgery -Responses by Non-academic, affiliated respondents

	Already	New	Unrelated	No
Routine use of EPO to improve the efficacy of autologous predonation	35 (12)	9 (3)	18 (6)	239 (79)
Routine use of EPO and iron in anemic patients undergoing elective surgery	62 (21)	16 (5)	22 (7)	199 (67)
Routinely stop all oral antiplatelet agents (excluding aspirin) prior to elective surgery	252 (81)	4 (1)	9 (3)	47 (15)
Routinely stop clopidogrel or ticlodipine for more than four days prior to elective surgery	242 (79)	11 (4)	12 (4)	43 (14)
Routinely continue aspirin until immediately prior to surgery in all patients	181 (59)	8 (3)	16 (5)	102 (33)
Routinely stop aspirin prior to elective surgery in patients without an acute coronary syndrome	151 (50)	4(1)	19 (6)	131 (43)
Routinely use DDAVP for bleeding	50 (16)	10 (3)	19 (6)	226 (74)
Routinely use an antifibrinolytic such as Amicar or Tranexamic acid	272 (88)	7 (2)	11 (4)	21 (7)
Routinely use topical agents that employ bovine thrombin for hemostasis †	190 (62)	9 (3)	20 (7)	86 (28)

Table 27C: Pharmacologic Guidelines for Cardiac Surgery - Responses by Private practice respondents

	Already	New	Unrelated	No
Routine use of EPO to improve the efficacy of autologous predonation	47 (11)	5 (1)	25 (6)	357 (82)
Routine use of EPO and iron in anemic patients undergoing elective surgery	91 (21)	11 (3)	24 (6)	310 (71)
Routinely stop all oral antiplatelet agents (excluding aspirin) prior to elective surgery	346 (79)	11 (3)	15 (3)	68 (15)
Routinely stop clopidogrel or ticlodipine for more than four days prior to elective surgery	338 (78)	12 (3)	26 (6)	59 (14)
Routinely continue aspirin until immediately prior to surgery in all patients	223 (52)	5 (1)	18 (4)	184 (43)
Routinely stop aspirin prior to elective surgery in patients without an acute coronary syndrome	224 (52)	2 (0)	22 (5)	181 (42)
Routinely use DDAVP for bleeding	78 (18)	11 (3)	25 (6)	323 (74)
Routinely use an antifibrinolytic such as Amicar or Tranexamic acid	381 (86)	15 (3)	13 (3)	33 (7)
Routinely use topical agents that employ bovine thrombin for hemostasis †	275 (64)	10 (2)	26 (6)	122 (28)

Results are reported as N (%). Respondents were instructed to:

Please answer “Already” if you were already doing this.
Please answer "New" if this was a change in practice resulting from the guidelines.
Please answer "Unrelated" if this was a change in practice not resulting from the guidelines.
Please answer “No” if you did not change your practice.

† P<0.01 comparing Institutional affiliation

Table 28A: Other Practices for Cardiac Surgery - Responses by Academic University affiliated respondents

	Already	New	Unrelated	No
Routinely transfuse all pump blood back to the patient, either directly or washed in a cell saver	517 (89)	6 (1)	13 (2)	45 (8)
Routinely wash all shed mediastinal blood from postoperative chest tube drainage prior to reinfusion	126 (22)	11 (2)	16 (3)	419 (73)
No longer routinely use PEEP as a routine therapy for bleeding	196 (35)	9 (2)	46 (8)	309 (55)
No longer routinely use intraoperative platelet or plasmapheresis	227 (40)	9 (2)	32 (6)	295 (52)
No longer routinely use direct reinfusion of unwashed shed mediastinal blood from postoperative chest tube drainage	270 (48)	5 (1)	31 (5)	259 (46)

Table 28B: Other Practices for Cardiac Surgery - Responses by Non-academic, affiliated respondents

	Already	New	Unrelated	No
Routinely transfuse all pump blood back to the patient, either directly or washed in a cell saver	295 (95)	2 (1)	3(1)	12 (4)
Routinely wash all shed mediastinal blood from postoperative chest tube drainage prior to reinfusion	81 (26)	8 (3)	7 (2)	215 (69)
No longer routinely use PEEP as a routine therapy for bleeding	94 (32)	8 (3)	31 (11)	161 (55)
No longer routinely use intraoperative platelet or plasmapheresis	125 (42)	9 (3)	24 (8)	141 (47)
No longer routinely use direct reinfusion of unwashed shed mediastinal blood from postoperative chest tube drainage	160 (53)	6 (2)	22 (7)	114 (38)

Table 28C: Other Practices for Cardiac Surgery -Responses by Private practice respondents

	Already	New	Unrelated	No
Routinely transfuse all pump blood back to the patient, either directly or washed in a cell saver	415 (93)	4 (1)	7 (2)	18 (4)
Routinely wash all shed mediastinal blood from postoperative chest tube drainage prior to reinfusion	111 (25)	4 (1)	27 (6)	295 (68)
No longer routinely use PEEP as a routine therapy for bleeding	147 (35)	10 (2)	50 (12)	216 (51)
No longer routinely use intraoperative platelet or plasmapheresis	165 (38)	9 (2)	33 (8)	222 (52)
No longer routinely use direct reinfusion of unwashed shed mediastinal blood from postoperative chest tube drainage	214 (50)	12 (3)	24 (6)	177 (42)

Results are reported as N (%). Respondents were instructed to:

Please answer “Already” if you were already doing this.

Please answer "New" if this was a change in practice resulting from the guidelines.

Please answer "Unrelated" if this was a change in practice not resulting from the guidelines.

Please answer “No” if you do not use the technology

Table 29: Effectiveness of Institutional Changes - - by type of Institution of Respondent

	Academic, University affiliated	Non-academic institution with academic affiliation	Private practice without an academic affiliation
Were the changes your institution made effective in reducing overall transfusion rates?			
Highly	47 (8)	29 (9)	34 (8)
Somewhat	162 (28)	108 (35)	133 (30)
Not at all	57 (10)	28 (9)	48 (11)
Increased transfusion	6 (1)	4 (1)	6 (1)
I do not know	197 (34)	100 (32)	140 (32)
We did not measure this	111 (19)	44 (14)	82 (19)
In your personal opinion, were the changes embraced by your specialty, at your institution			
Highly	124 (22)	86 (28)	106 (25)
Somewhat	306 (55)	155 (51)	221 (52)
Not at all	127 (23)	65 (21)	97 (23)
In your personal opinion, were the changes embraced by other specialties, at your institution			
Highly	48 (9)	46 (15)	43 (10)
Somewhat	334 (60)	181 (60)	245 (59)
Not at all	172 (31)	77 (25)	130 (31)

Results are reported as N (%).