

<和文論文>

シソーラスの探索

①	「世界保健機関 手術安全チェックリスト」で検索し、得られた論文のシソーラスを抽出
②	得られたシソーラスで再検索し、関連のあるシソーラスを抽出
③	②を繰り返し、770件の文献のタイトルと抄録から関連しそうな文献を抽出

検索式と絞り込みの過程

	検索式	件数	検索日
医中誌	(世界保健機関/TH) and (PT=会議録除く)	3844	2018/3/19
	(チェックリスト/TH) and (PT=会議録除く)	6702	2018/3/19
	(世界保健機関/TH) or (チェックリスト/TH) and (PT=会議録除く)	10489	2018/3/19
	(世界保健機関/TH) or (チェックリスト/TH) and (PT=会議録除く) and ([メタアナリシス]/TH or [システマティックレビュー]/TH or [ランダム化比較試験]/TH or [準ランダム化比較試験]/TH or [観察研究]/TH or RD=メタアナリシス,ランダム化比較試験,準ランダム化比較試験,比較研究) and (PT=症例報告除く) and (PT=会議録除く) and CK=ヒト	770	2018/3/19
絞り込み	タイトルと抄録	3	2018/3/19
	本文	3	2018/3/19

「観察研究/TH」には、前向き研究、後ろ向き研究、症例対照研究、コホート研究、断面研究等が含まれる。

研究デザインとアウトカムのレベル

		アウトカムレベル				計
		1:臨床アウトカム	2:代替アウトカム	3:安全と間接的に関係するその他の測定可能	4:エラーや有害事象の減少に寄与するアウトカムが	
研究デザインレベル	1A:システマティックレビューまたはメタアナリシス	0	0	0	0	0
	1:無作為化比較試験	0	0	0	0	0
	2:非無作為化比較試験	0	0	0	0	0
	3:対照群のある観察研究	0	0	0	0	0
	4:対照群のない観察研究	1	1	1	0	3
	計	0	0	0	0	0

< 英文論文 >

シソーラスの探索

①	「WHO Surgical Safety Checklist」で検索し、得られた論文のシソーラスを抽出
②	得られたシソーラスで再検索し、関連のあるシソーラスを抽出
③	②を繰り返し、3,600件以上の文献のタイトルと抄録から関連しそうな文献を抽出中(継続作業中)

検索式と絞り込みの過程

	検索式	件数	検索日
PubMed	"World Health Organization"[Mesh] AND ("2008/03/16"[PDat] : "2018/03/13"[PDat])	10913	2018/3/14
	"Checklist"[Mesh] AND ("2008/03/16"[PDat] : "2018/03/13"[PDat])	4736	2018/3/14
	"World Health Organization"[Mesh] OR "Checklist"[Mesh] AND ("2008/03/16"[PDat] : "2018/03/13"[PDat])	15483	2018/3/14
	("World Health Organization"[Mesh] OR "Checklist"[Mesh]) AND ("Meta-Analysis as Topic"[Mesh] OR "Controlled	3653	2018/3/14
絞り込み	タイトルと抄録	76	
	本文	76	

研究デザインとアウトカムのレベル

		アウトカムレベル				計
		1:臨床アウトカム	2:代替アウトカム	3:安全と間接的に関係するその他の測定可能	4:エラーや有害事象の減少に寄与するアウトカムが	
研究デザインレベル	1A:システムティックレビューまたはメタアナリシス	5	1	0	0	6
	1:無作為化比較試験	2	2	0	0	4
	2:非無作為化比較試験	0	0	0	0	0
	3:対照群のある観察研究	11	4	0	2	17
	4:対照群のない観察研究	4	37	0	8	49
	計	22	44	0	10	76

WHO Surgical Safety Checklist (WHO手術安全チェックリスト) 文献一覧

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
<和文論文>											
1	「手術安全チェックリスト」を導入しての安全意識に関する追跡調査 Author: 葛西香菜紗, 眞弓祐子, 野村里織, 石井容子, 佐藤律子 Source: 川崎市立川崎病院院内看護研究集録 69回 Page8-11(2015.03)	4: 対照群のない観察研究	前後比較研究	WHOSSCの使用	医師68名、看護師(手術室、ICU、外来、病棟)57名、助産師20名、放射線技師4名、臨床工学技師5名	3: 安全と間接的に関係するその他の測定可能なアウトカム	職員の安全意識	チェックリスト導入の2年後に医師と看護師を対象に行った今回と同様の調査と比較した結果、チーム全体として誤認防止への安全意識が向上しており、チェックリストが誤認防止に有効であることが確認できた。			
2	手術安全チェックリストの運用と課題 手術部運営効率化の観点から Author: 釈永清志, 飯塚真理子, 木本久子, 山崎光章 Source: 日本手術医学会誌 (1340-8593)36巻1号 Page65-68(2015.02)	4: 対照群のない観察研究	前後比較研究	WHOSSCの使用	麻酔科管理の手術症例 7126例	2: 代替アウトカム	麻酔導入時間、手術準備時間、手術時間、麻酔時間、麻酔覚醒時間	手術安全チェックリスト運用開始後群では平均麻酔導入時間が有意に延長し、平均麻酔覚醒時間は有意に短縮したが、平均手術準備時間に有意差は認めなかった。また、運用開始後は日勤帯のすべての時間帯で手術室稼働率が改善した。			
3	臨床と研究「手術室チェックリスト」が術後合併症の発生率に与える影響の検討 Author: 太田裕之, 塚山正市, 藤岡重一, 望月慶子, 村上眞也, 川浦幸光 Source: 外科 (0016-593X)75巻10号 Page1104-1107(2013.10)	4: 対照群のない観察研究	前後比較研究	WHOSSCの使用	手術室チェックリスト導入前施行手術 350例、導入後施行手術 319例	1: 臨床アウトカム	術後30日以内の手術関連死亡、合併症発生率、術後感染症発生率	1)術後30日以内の手術関連死亡は導入前2例(0.6%)、導入後3例(0.9%)で、合併症発生率は導入前7.3%、導入後4.4%といずれも有意差は認められなかった。2)術後合併症のうち術後感染症は手術部位感染と遠隔感染の肺炎の合計でみた発生率はチェックリスト導入前の5.3%から導入後2.2%と有意に減少していた。			

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
<英文論文>											
1	Haynes AB, Edmondson L, Lipsitz SR, Molina G, Neville BA, Singer SJ, Moonan AT, Childers AK, Foster R, Gibbons LR, Gawande AA, Berry WR. Mortality Trends After a Voluntary Checklist-based Surgical Safety Collaborative. <i>Ann Surg.</i> 2017 Dec;266(6):923-929. doi: 10.1097/SLA.0000000000002249. PubMed PMID: 29140848.	3: 対照群のある観察研究	前後比較研究	The Safe Surgery 2015 South Carolina program.	Fourteen hospitals.	1: 臨床アウトカム	Postoperative mortality rates.	Before program launch, there was no difference in mortality trends between the completion cohort and all others (P = 0.33), but postoperative mortality diverged thereafter (P = 0.021). Risk-adjusted 30-day mortality among completers was 3.38% in 2010 and 2.84% in 2013 (P < 0.00001), whereas mortality among other hospitals (n = 44) was 3.50% in 2010 and 3.71% in 2013 (P = 0.3281), reflecting a 22% difference between the groups on difference-in-differences analysis (P = 0.0021).	N.A.	N.A.	
2	White MC, Peterschmidt J, Callahan J, Fitzgerald JE, Close KL. Interval follow up of a 4-day pilot program to implement the WHO surgical safety checklist at a Congolese hospital. <i>Global Health.</i> 2017 Jun 29;13(1):42. doi: 10.1186/s12992-017-0266-0. PubMed PMID: 28662709; PubMed Central PMCID: PMC5492505.	4: 対照群のない観察研究	前後比較研究	A four-day pilot SSC training course.	A single hospital centre in the Republic of Congo.	4: エラーや有害事象の減少に寄与するアウトカムがない	SSC implementation.	Over 50% of participants using the SSC at 15 months, positive changes in learning, behaviour and organisational change, but less impact on hierarchical culture.	N.A.	N.A.	
3	Bartz-Kurycki MA, Anderson KT, Abraham JE, Masada KM, Wang J, Kawaguchi AL, Lally KP, Tsao K. Debriefing: the forgotten phase of the surgical safety checklist. <i>J Surg Res.</i> 2017 Jun 1;213:222-227. doi: 10.1016/j.jss.2017.02.072. Epub 2017 Mar 6. PubMed PMID: 28601318.	4: 対照群のない観察研究	コホート研究	なし	An academic children's hospital	4: エラーや有害事象の減少に寄与するアウトカムがない	SSC adherence.	Despite slight increases annually in overall compliance to the debriefing checklist, only half of all checklists were completed in full.	N.A.	N.A.	

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
4	Yu X, Huang Y, Guo Q, Wang Y, Ma H, Zhao Y; Relaunch and Implementation of Operating Room Surgical Safety Checklist (RIORS) study group. Clinical motivation and the surgical safety checklist. Br J Surg. 2017 Mar;104(4):472-479. doi: 10.1002/bjs.10446. Epub 2017 Feb 3. PubMed PMID: 28158915.	4: 対照群のない観察研究	前後比較研究	Revision of the SSC	Four academic/teaching hospitals	4: エラーや有害事象の減少に寄与するアウトカムがない	Completion rates of SSC	Completion rates of all stages reached over 80.0 per cent at all sites. There was a significant change in doctors who participated. The rates of hasty or casual checking decreased to less than 6.0 per cent overall.	N.A.	N.A.	
5	Gillespie BM, Marshall AP, Gardiner T, Lavin J, Withers TK. Impact of workflow on the use of the Surgical Safety Checklist: a qualitative study. ANZ J Surg. 2016 Nov;86(11):864-867. doi: 10.1111/ans.13433. Epub 2016 Jan 7. PubMed PMID: 26748669.	4: 対照群のない観察研究	質的研究 (インタビュー等)	なし	70 participants from nursing, medicine and the community.	4: エラーや有害事象の減少に寄与するアウトカムがない		Within the domain, seven categories illustrated the causal conditions which determined the ways in which workflow influenced checklist use.	N.A.	N.A.	
6	El Boghdady M, Tang B, Tait I, Alijani A. The effect of a simple intraprocedural checklist on the task performance of laparoscopic novices. Am J Surg. 2017 Aug;214(2):373-377. doi: 10.1016/j.amjsurg.2016.07.019. Epub 2016 Aug 16. PubMed PMID: 27773378.	1: 無作為化比較試験	症例対照研究	(control group) receiving paper feedback (checklist group) receiving paper feedback and the checklist	Twenty novices	2: 代替アウトカム	Errors	2,341 errors were detected during the 5 stages. During the first stage, the errors were not significantly different between the 2 groups. The checklist group committed significantly fewer errors as compared with the control group during all the later 4 stages (P < .01).	N.A.	N.A.	
7	Gitelis ME, Kaczynski A, Shear T, Deshur M, Beig M, Sefa M, Silverstein J, Ujiki M. Increasing compliance with the World Health Organization Surgical Safety Checklist-A regional health system's experience. Am J Surg. 2017 Jul;214(1):7-13. doi: 10.1016/j.amjsurg.2016.07.024. Epub 2016 Aug 16. PubMed PMID: 27692671.	3: 対照群のある観察研究	症例対照研究	電子カルテと連動するWHOSSCの使用	NorthShore University HealthSystem	2: 代替アウトカム	Compliance rate, risk events, LOS, 30-day readmissions.	Compliance increased from 48% (n = 167) to 92% (n = 1,037; P < .001) after the SSC was integrated into the electronic health record. Surgeons (91% vs 97%; P < .001), anesthesiologists (89% vs 100%; P < .001), and nurses (55% vs 93%; P < .001) demonstrated an increase in compliance. A comparison between risk events in the pre- and post-rollout period	N.A.	N.A.	

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
8	Martis WR, Hannam JA, Lee T, Merry AF, Mitchell SJ. Improved compliance with the World Health Organization Surgical Safety Checklist is associated with reduced surgical specimen labelling errors. N Z Med J. 2016 Sep 9;129(1441):63-7. PubMed PMID: 27607086.	3: 対照群のある観察研究	前後比較研究	WHOSSCの使用	Five operation room, A total of 9,825 specimen	2: 代替アウトカム	specimen labelling errors	There were 19 errors in 4,760 specimens (rate 3.99/1,000) and eight errors in 5,065 specimens (rate 1.58/1,000) before and after the change in SSC administration paradigm (P=0.0225).	N.A.	N.A.	
9	Torres-Manrique B, Nolasco-Bonmati A, Maciá-Soler L, Milberg M, Vilca AN, López-Montesinos MJ, González-Chordá VM. Cultural analysis of surgical safety checklist items in Spain and Argentina. Rev Gaucha Enferm. 2016 Aug 25;37(3):e56359. doi: 10.1590/1983-1447.2016.03.56359. English, Spanish. PubMed PMID: 27579844.	3: 対照群のある観察研究	質的研究 (インタビュー等)	なし	Two hospitals in Spain and Argentina.	4: エラーや有害事象の減少に寄与するアウトカムがない	Percentage of agreement	There was a greater percentage of classifications in fields related to the prevention of critical events. The category "clinical processes and procedures" was mentioned most frequently in both lists.	N.A.	N.A.	
10	Epiu I, Tindimwebwa JV, Mijumbi C, Ndarugirire F, Twagirumugabe T, Lugazia ER, Dubowitz G, Chokwe TM. Working towards safer surgery in Africa; a survey of utilization of the WHO safe surgical checklist at the main referral hospitals in East Africa. BMC Anesthesiol. 2016 Aug 11;16(1):60. doi: 10.1186/s12871-016-0228-8. PubMed PMID: 27515450; PubMed Central PMCID: PMC4982013.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	The main referral hospitals in each East Africa Community country., Of the 86 anaesthetists contacted and interviewed, 85 responses were analysed.	2: 代替アウトカム	Availability, knowledge and usage of the surgical checklist	Only 25 % regularly used the WHO surgical checklist. None of the anaesthetists in Mulago (Uganda) or Centre Hospitalo-Universitaire de Kamenge (Burundi) used the checklist, mainly because it was not available, in contrast with Muhimbili (Tanzania), Kenyatta (Kenya), and Centre Hospitalier Universitaire de Kigali (Rwanda), where 65 %, 19 % and 36 %, respectively, used the checklist.	N.A.	N.A.	
11	Putnam LR, Anderson KT, Diffley MB, Hildebrandt AA, Caldwell KM, Minzenmayer AN, Covey SE, Kawaguchi AL, Lally KP, Tsao K. Meaningful use and good catches: More appropriate metrics for checklist effectiveness. Surgery. 2016 Dec;160(6):1675-1681. doi: 10.1016/j.surg.2016.04.038. Epub 2016 Jul 26. PubMed PMID: 27473370.	4: 対照群のない観察研究	前後比較研究	SSCの使用	Multifaceted interventions aimed at the preincision checklist and 5 prospective audits.	4: エラーや有害事象の減少に寄与するアウトカムがない	Implementation of a systematic checklist.	Implementation of a systematic checklist program resulted in significant and sustainable improvement in performance.	N.A.	N.A.	

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
12	Diego LA, Salman FC, Silva JH, Brandão JC, de Oliveira Filho G, Carneiro AF, Bagatini A, de Moraes JM. Construction of a tool to measure perceptions about the use of the World Health Organization Safe Surgery Checklist Program. Braz J Anesthesiol. 2016 Jul-Aug;66(4):351-5. doi: 10.1016/j.bjane.2014.11.011. Epub 2016 May 1. PubMed PMID: 27343783.	4: 対照群のない観察研究	その他	麻酔科医を対象とした WHOSSC 使用状況測定ツールに関するアンケート調査	459 participants who join the 59th CBA in BH/MG.	2: 代替アウトカム	Attitudes of respondents on various aspects of the checklist applicability and usefulness.	There was a statistically significant difference between the groups of anesthesiologists who reported using the instrument in less or more than 70% of patients, indicating that the attitude questionnaire discriminates between these two groups of professionals.	N.A.	N.A.	
13	Cadman V. The impact of surgical safety checklists on theatre departments: a critical review of the literature. J Perioper Pract. 2016 Apr;26(4):62-71. Review. PubMed PMID: 27290755.	1A: システムティックレビューまたはメタアナリシス	システムティックレビュー	WHOSSC の使用	Databases utilised were CINAHL Complete, MEDLINE and Scopus.	1: 臨床アウトカム	morbidity and mortality etc.	The evidence found shows that use of the checklist reduces patient morbidity and mortality, improves communication and teamwork, reduces operating time and can reduce theatre costs.			
14	Lacassie HJ, Ferdinand C, Guzmán S, Camus L, Echevarria GC. World Health Organization (WHO) surgical safety checklist implementation and its impact on perioperative morbidity and mortality in an academic medical center in Chile. Medicine (Baltimore). 2016 Jun;95(23):e3844. doi: 10.1097/MD.0000000000003844. PubMed PMID: 27281092	3: 対照群のある観察研究	前後比較研究	WHOSSC の使用	チリ都市部の学術医療機関1施設	1: 臨床アウトカム	In-hospital mortality rate, Length of stay.	In-hospital mortality rate was 0.82% [95% CI, 0.73-0.92] before and 0.65% (95% CI, 0.57-0.74) after checklist implementation [odds ratio (OR) 0.73; 95% CI, 0.61-0.89]. The median length of stay was 3 days [interquartile range (IQR), 1-5] and 2 days (IQR, 1-4) for the pre and postchecklist period, respectively (P<0.01).	N.A.	N.A.	
15	GlobalSurg Collaborative. Mortality of emergency abdominal surgery in high-, middle- and low-income countries. Br J Surg. 2016 Jul;103(8):971-988. doi: 10.1002/bjs.10151. Epub 2016 May 4. Erratum in: Br J Surg. 2017 Apr;104(5):632. PubMed PMID: 27145169.	3: 対照群のある観察研究	コホート研究	WHOSSC の使用	357 centres in 58 countries	1: 臨床アウトカム	Mortality at 30 days.	Surgical safety checklist use was less frequent in low- and middle-income countries, but when used was associated with reduced mortality at 30 days.	N.A.	N.A.	

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
16	Lyons VE, Popejoy LL. Time-Out and Checklists: A Survey of Rural and Urban Operating Room Personnel. J Nurs Care Qual. 2017 Jan/Mar;32(1):E3-E10. PubMed PMID: 27270848.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	rural and urban operating rooms.	4: エラーや有害事象の減少に寄与するアウトカムがない	checklist use	Although checklist use has been adopted in many organizations, use is inconsistent across both settings.	N.A.	N.A.	
17	de Jager E, McKenna C, Bartlett L, Gunnarsson R, Ho YH. Postoperative Adverse Events Inconsistently Improved by the World Health Organization Surgical Safety Checklist: A Systematic Literature Review of 25 Studies. World J Surg. 2016 Aug;40(8):1842-58. doi: 10.1007/s00268-016-3519-9. Review. PubMed PMID: 27125680; PubMed Central PMCID: PMC4943979.	1A: システマティックレビューまたはメタアナリシス	システマティックレビュー	WHOSSCの使用	25 studies were included.	1: 臨床アウトカム	The total complication rate, Mortality rates, Length of admission, Surgical site infections, Rates of deep vein thrombosis and/or pulmonary embolism, Total infection rates.	The effects of the checklist were largely inconsistent. Postoperative complications were examined in 20 studies; complication rates significantly decreased in ten and increased in one. Eighteen studies examined postoperative mortality.	N.A.	N.A.	
18	O'Leary JD, Wijesundera DN, Crawford MW. Effect of surgical safety checklists on pediatric surgical complications in Ontario. CMAJ. 2016 Jun 14;188(9):E191-8. doi: 10.1503/cmaj.151333. Epub 2016 Mar 14. PubMed PMID: 26976960; PubMed Central PMCID: PMC4902710.	3: 対照群のある観察研究	前後比較研究	WHOSSCの使用	116 acute care hospitals in Ontario.	1: 臨床アウトカム	perioperative complications.	The proportion of children who had perioperative complications was 4.08% (95% confidence interval [CI] 3.76%-4.40%) before the implementation of the checklist and 4.12% (95% CI 3.80%-4.45%) after implementation. After we adjusted for confounding factors, we found no significant difference in the odds of perioperative complications after the	N.A.	N.A.	

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
19	Sendhofer G, Lumenta DB, Leitgeb K, Kober B, Jantscher L, Schanbacher M, Berghold A, Pregartner G, Brunner G, Tax C, Kamolz LP. The Gap between Individual Perception and Compliance: A Qualitative Follow-Up Study of the Surgical Safety Checklist Application. PLoS One. 2016 Feb 29;11(2):e0149212. doi: 10.1371/journal.pone.0149212. eCollection 2016. PubMed PMID: 26925579; PubMed Central PMCID: PMC4771169.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	875 operating team members.	4: エラーや有害事象の減少に寄与するアウトカムがない	healthcare professionals' individual perception of, as well as satisfaction and compliance with the SSC.	Despite healthcare professionals confirming the importance of the SSC, compliance was moderate.			
20	Santana HT, de Freitas MR, Ferraz EM, Evangelista MS. WHO Safety Surgical Checklist implementation evaluation in public hospitals in the Brazilian Federal District. J Infect Public Health. 2016 Sep-Oct;9(5):586-99. doi: 10.1016/j.jiph.2015.12.019. Epub 2016 Feb 26. PubMed PMID: 26924253.	3: 対照群のある観察研究	前後比較研究	WHOSSCの使用	ブラジリア連邦直轄区所在の公的医療機関3施設	1: 臨床アウトカム	Four important measures for the prevention of SSI, Adherence to the checklist, Frequency of surgical complications, Length of stay.	WHO checklist implementation as an intervention tool showed good adherence to the majority of the items on the list. Complications and deaths were low in pre and post periods.	N.A.	N.A.	
21	Bock M, Fanolla A, Segur-Cabanac I, Auricchio F, Melani C, Girardi F, Meier H, Pycha A. A Comparative Effectiveness Analysis of the Implementation of Surgical Safety Checklists in a Tertiary Care Hospital. JAMA Surg. 2016 Jul 1;151(7):639-46. doi: 10.1001/jamasurg.2015.5490. PubMed PMID: 26842760.	3: 対照群のある観察研究	前後比較研究	WHOSSCの使用	a public, regional, university-affiliated hospital in Italy.	1: 臨床アウトカム	all-cause 90- and 30-day mortality rates.	Ninety-day all-cause mortality was 2.4% (129 patients) before compared with 2.2% (118 patients) after the SSC implementation, for an adjusted odds ratio (AOR) of 0.73 (95% CI, 0.56-0.96; P=.02). Thirty-day all-cause mortality was 1.36% (74 patients) before compared with 1.32% (70 patients) after the SSC implementation, for an AOR of 0.79 (95% CI, 0.56-1.11; P=.17).			

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
22	Gagné JF, Labidi M, Turmel A. Internal Audit of Compliance with a Perioperative Checklist in a Tertiary Care Neurosurgical Unit. Can J Neurol Sci. 2016 Jan;43(1):87-92. doi: 10.1017/cjn.2015.308. PubMed PMID: 26786640.	4: 対照群のない観察研究	前後比較研究	WHOSSCの使用	171 neurosurgical cases.	2: 代替アウトカム	compliance with and completeness of the three steps in the perioperative checklist:	Compliance with the Sign-in, Time-out and Sign-out steps was 82%, 99% and 93% respectively. On average, 92% of the Time-out elements were verified. The emergent nature of a surgery was the only factor that caused a statistically significant reduction in compliance with the checklist.			
23	Ong AP, Devcich DA, Hannam J, Lee T, Merry AF, Mitchell SJ. A 'paperless' wall-mounted safety checklist with migrated leadership can improve compliance and team engagement. BMJ Qual Saf. 2016 Dec;25(12):971-976. doi: 10.1136/bmjqs-2015-004545. Epub 2015 Dec 30. PubMed PMID: 26717990.	4: 対照群のない観察研究	前後比較研究	introducing a wall-mounted paperless WHOSSC.	111 operations.	2: 代替アウトカム	team engagement and compliance.	Improvements in team engagement and compliance with administering checklist items followed introduction of migrated leadership of checklist administration and a wall-mounted checklist	N.A.	N.A.	
24	Robert MC, Choi CJ, Shapiro FE, Urman RD, Melki S. Avoidance of serious medical errors in refractive surgery using a custom preoperative checklist. J Cataract Refract Surg. 2015 Oct;41(10):2171-8. doi: 10.1016/j.jcrs.2015.10.060.	3: 対照群のある観察研究	コホート研究	WHOSSCの使用	Consecutive patients who had primary or enhancement laser vision correction.	2: 代替アウトカム	medical errors	Although there were 2 (0.07%) serious errors in the prechecklist cohort, none occurred following implementation of the safety checklist protocol (P = .23).	N.A.	N.A.	
25	Overdyk FJ, Dowling O, Newman S, Glatt D, Chester M, Armellino D, Cole B, Landis GS, Schoenfeld D, DiCapua JF. Remote video auditing with real-time feedback in an academic surgical suite improves safety and efficiency metrics: a cluster randomised study. BMJ Qual Saf. 2016 Dec;25(12):947-953. doi: 10.1136/bmjqs-2015-004226. Epub 2015 Dec 11. PubMed PMID: 26658775; PubMed Central PMCID: PMC5256234.	1: 無作為化比較試験	無作為化比較試験 (RCT)	Remote video auditing with real-time provider feedback on checklist compliance	23-operating room (OR) suite.	2: 代替アウトカム	compliance.	Remote video auditing with feedback improves surgical safety checklist compliance for all cases, and turnover time for scheduled cases, but not for unscheduled cases.	N.A.	N.A.	

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
26	Rönnberg L, Nilsson U. Swedish Nurse Anesthetists' Experiences of the WHO Surgical Safety Checklist. J Perianesth Nurs. 2015 Dec;30(6):468-475. doi: 10.1016/j.jjopan.2014.01.011. Epub 2014 Dec 6. PubMed PMID: 26596382.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	A university hospital and a community hospital in Sweden, A total of 68 RNAs(register ed nurse anesthetists) were eligible for participation, and 47 (69%) answered the questionnaire.	2: 代替アウトカム	Response rate	There was a statistically significant lower compliance to "Sign-in" compared with the other two parts, "Timeout" and "Sign-out." The RNAs expressed that the checklist was very important for anesthetic and perioperative care. They also expressed that by confirming their own area of expertise, they achieved an increased sense of being a team member.	N.A.	N.A.	
27	Dixon JL, Mukhopadhyay D, Hunt J, Jupiter D, Smythe WR, Papaconstantinou HT. Enhancing surgical safety using digital multimedia technology. Am J Surg. 2016 Jun;211(6):1095-8. doi: 10.1016/j.amjsurg.2015.08.023. Epub 2015 Oct 22. PubMed PMID: 26547406.	3: 対照群のある観察研究	症例対照研究	implementation of a multimedia time-out, including a patient video.	Hospital staff.	4: エラーや有害事象の減少に寄与するアウトカムがない	clarity of patient identification, operative laterality.	The multimedia time-out allows improved participation by the surgical team and is preferred to a standard time-out process.			
28	Melekie TB, Getahun GM. Compliance with Surgical Safety Checklist completion in the operating room of University of Gondar Hospital, Northwest Ethiopia. BMC Res Notes. 2015 Aug 19;8:361. doi: 10.1186/s13104-015-1338-y. PubMed PMID: 26285824; PubMed Central PMCID: PMC4544783.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	282 patients undergoing elective and emergency surgery.	2: 代替アウトカム	Compliance and completeness rate with implementation of Sign-in, Time-out, and Sign-out domains.	The overall compliance and completeness rate were 39.7 and 63.4% respectively. The sign-in, time-out and sign-out were missed in 30.5% (273/896), 35.4 % (436/1,232) and 45.7% (307/672) respectively.	N.A.	N.A.	

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
29	Toor AA, Farooka MW, Ayyaz M, Sarwar H, Malik AA, Shabbir F. Pre-operative antibiotic use reduces surgical site infection. J Pak Med Assoc. 2015 Jul;65(7):733-6. PubMed PMID: 26160082	3: 対照群のある観察研究	前後比較研究	WHOSSCの使用	Mayo Hospital, Lahore, Pakistan	1: 臨床アウトカム	Adherence of optimal administration of antibiotic, and other safety protocols, Rate of post-operative infection, Length of stay.	Adherence of optimal administration of antibiotic increased from 114(37.6%) to 282(91%) (p<0.001). The rate of post-operative infection fell from 99(32.7%) to 47(15.2%) (p<0.001). Mean hospital stay was reduced from 7.8±5.7 days to 6.5±5.6 days (p<0.001).	N.A.	N.A.	
30	Bergs J, Hellings J, Cleemput I, Vandijck D; Flemish Safe Surgery Consortium. The World Health Organisation's Surgical Safety Checklist in Belgian Operating Theatres: a Content-Driven Evaluation. Acta Chir Belg. 2015 Mar-Apr;115(2):147-54. PubMed PMID: 26021949.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	Belgian hospitals (n=36)	2: 代替アウトカム	Response rate	Based on self-report, 69.4% (n=25) of hospitals reported to use all WHO items. The expert panel determined that 17.1% (n=6) of checklists included all WHO items. Inclusion ranged from 7 to 22 items (mean=16.6, Std. Dev.=4.48).	N.A.	N.A.	
31	Kim RY, Kwakye G, Kwok AC, Baltaga R, Ciobanu G, Merry AF, Funk LM, Lipsitz SR, Gawande AA, Berry WR, Haynes AB. Sustainability and long-term effectiveness of the WHO surgical safety checklist combined with pulse oximetry in a resource-limited setting: two-year update from Moldova. JAMA Surg. 2015 May;150(5):473-9. doi: 10.1001/jamasurg.2014.3848. PubMed PMID: 25806951.	3: 対照群のある観察研究	前後比較研究	WHOSSCの使用	A total of 637 patients undergoing noncardiac surgery were included in the long-term follow-up group were compared with 2106 patients who underwent surgery shortly after implementation in the short-term follow-up group	2: 代替アウトカム	Change in Surgical Complication Rates	Between the short- and long-term follow-up groups, the complication rate decreased 30.7% (P=.03). Surgical site infections decreased 40.4% (P=.05). The mean (SD) rate of completion of the checklist items increased from 88% (14%) in the short-term follow-up group to 92% (11%) in the long-term follow-up group (P<.001).	N.A.	N.A.	

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
32	Mayer EK, Sevdalis N, Rout S, Caris J, Russ S, Mansell J, Davies R, Skapinakis P, Vincent C, Athanasiou T, Moorthy K, Darzi A. Surgical Checklist Implementation Project: The Impact of Variable WHO Checklist Compliance on Risk-adjusted Clinical Outcomes After National Implementation: A Longitudinal Study. Ann Surg. 2016 Jan;263(1):58-63. doi: 10.1097/SLA.0000000000001185. PubMed PMID: 25775063.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	6714 patients at 5 academic and community hospitals.	1: 臨床アウトカム	The primary endpoint was any complication, including mortality, occurring before hospital discharge.	Checklist completion did not affect mortality reduction, but significantly lowered risk of postoperative complication (16.9% vs. 11.2%), and was largely noticed when all 3 components of the checklist had been completed (odds ratio = 0.57, 95% confidence interval: 0.37-0.87, P < 0.01).	N.A.	N.A.	
33	Oak SN, Dave NM, Garasia MB, Parelkar SV. Surgical checklist application and its impact on patient safety in pediatric surgery. J Postgrad Med. 2015 Apr-Jun;61(2):92-4. doi: 10.4103/0022-3859.150450. PubMed PMID: 25766340; PubMed Central PMCID: PMC4943428.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	3000 consecutive surgeries	2: 代替アウトカム	major peri-operative errors and events, near missed catastrophe	No major perioperative errors were noted. The patient identification tag was missing in four (0.1%) patients. Mention of the side of procedures was missing in 108 (3.6%) cases. In 0.1% (3) of patients there was mix up of the mention of side of operation in the case papers and consent forms.	N.A.	N.A.	
34	Lepänluoma M, Rahi M, Takala R, Löyttyniemi E, Ikonen TS. Analysis of neurosurgical reoperations: use of a surgical checklist and reduction of infection-related and preventable complication-related reoperations. J Neurosurg. 2015 Jul;123(1):145-52. doi: 0.3171/2014.12.JNS141077. Epub 2015 Feb 27. PubMed PMID: 25723297.	3: 対照群のある観察研究	前後比較研究	WHOSSCの使用	Turku University Hospital, Finland	1: 臨床アウトカム	Operations leading to complication-related reoperations, Preventable complications leading to reoperation, Rate of infection-related reoperations	The overall rate of preventable complication-related neurosurgical reoperations decreased from 3.3% (95% CI 2.7%-4.0%) to 2.0% (95% CI 1.5%-2.6%) after the checklist implementation. All infection-related reoperations proportioned to all neurosurgical operations (2.5% before vs 1.6% after checklist implementation) showed a significant reduction (p = 0.02) after the implementation of the checklist.	N.A.	N.A.	

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
35	Helmiö P, Blomgren K, Lehtivuori T, Palonen R, Aaltonen LM. Towards better patient safety in otolaryngology: characteristics of patient injuries and their relationship with items on the WHO Surgical Safety Checklist. Clin Otolaryngol. 2015 Oct;40(5):443-8. doi: 10.1111/coa.12396. PubMed PMID: 25704536.	4: 対照群のない観察研究	コホート研究	WHOSSCの使用	Claim record study of national patient insurance charts in Finland.	1: 臨床アウトカム	patient injuries	Patient injuries in otolaryngology are strongly related to operative care. The WHO checklist is one suitable tool for error prevention.			
36	Chaudhary N, Varma V, Kapoor S, Mehta N, Kumaran V, Nundy S. Implementation of a surgical safety checklist and postoperative outcomes: a prospective randomized controlled study. J Gastrointest Surg. 2015 May;19(5):935-42. doi: 10.1007/s11605-015-2772-9. Epub 2015 Feb 18. PubMed PMID: 25691114.	1: 無作為化比較試験	無作為化比較試験 (RCT)	WHOSSCの使用	700 consecutive patients	1: 臨床アウトカム		Postoperative wound-related (p=0.04), abdominal (p=0.01), and bleeding (p=0.03) complications were significantly lower in the checklist group compared to the control group.			
37	Biskup N, Workman AD, Kutzner E, Adetayo OA, Gupta SC. Perioperative Safety in Plastic Surgery: Is the World Health Organization Checklist Useful in a Broad Practice? Ann Plast Surg. 2016 May;76(5):550-5. doi: 10.1097/SAP.0000000000000427. PubMed PMID: 25664411.	3: 対照群のある観察研究	前後比較研究	WHOSSCの使用	Loma Linda University Medical Center, A total of 2166 patients were operated on before list implementation and a total of 2310 patients after checklist implementation.	1: 臨床アウトカム	morbidity and mortality	The most common complications were wound related, including infection, seroma and/or hematoma, dehiscence, and flap-related complications. No significant decrease in the measured complications, neither total nor each specific complication, occurred after the implementation of the SSC.	N.A.	N.A.	

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
38	Jammer I, Ahmad T, Aldecoa C, Koulenti D, Goranović T, Grigoras I, Mazul-Sunko B, Matos R, Moreno R, Sigurdsson GH, Toft P, Walder B, Rhodes A, Pearse RM; European Surgical Outcomes Study (EuSOS) group. Point prevalence of surgical checklist use in Europe: relationship with hospital mortality. Br J Anaesth. 2015 May;114(5):801-7. doi: 10.1093/bja/aeu460. Epub 2015	3: 対照群のある観察研究	横断的研究	WHOSSCの使用	45,591 patients from 426 sites were included in the primary analysis	1: 臨床アウトカム	The use of a surgical checklist, hospital mortality.	There were wide variations in exposure to surgical checklist use between European nations. Exposure was associated with a lower hospital mortality after adjustment for risk factors, which may differ between hospitals and countries.	N.A.	N.A.	
39	Myers JW, Gilmore BA, Powers KA, Kim PJ, Attinger CE. The utility of the surgical safety checklist for wound patients. Int Wound J. 2016 Oct;13(5):848-53. doi: 10.1111/iwj.12391. Epub 2015 Jan 14. PubMed PMID: 25585543.	4: 対照群のない観察研究	前後比較研究	WHOSSCの使用	233 patients.	2: 代替アウトカム	the frequency of changes in patient care resulting from the use of a SSC.	The number of patients whose management was modified as a result of the checklist was 113 (48%) out of 233. The total number of changes made was 132, and 18 patients had more than one modification made to their care plan.	N.A.	N.A.	
40	Rodrigo-Rincon I, Martin-Vizcaino MP, Tirapu-Leon B, Zabalza-Lopez P, Zaballos-Barcala N, Villalgordo-Ortin P, Abad-Vicente FJ, Gost-Garde J. The effects of surgical checklists on morbidity and mortality: a pre- and post-intervention study. Acta Anaesthesiol Scand. 2015 Feb;59(2):205-14. doi: 10.1111/aas.12443. Epub 2014 Dec 5. PubMed PMID: 25476578; PubMed Central PMCID:	3: 対照群のある観察研究	前後比較研究	WHOSSCの使用	A tertiary teaching hospital.	1: 臨床アウトカム	Mortality and surgical adverse events (AEs).	The overall AE rate did not decrease significantly between the two periods. However, the rate of infectious AEs and overall AEs in patients with non-elective admissions had statistically significant reductions. Mortality rate at 30 days decreased from 1.5% to 0.9% (P = 0.35).	N.A.	N.A.	

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
41	Russ S, Rout S, Caris J, Mansell J, Davies R, Mayer E, Moorthy K, Darzi A, Vincent C, Sevdalis N. Measuring variation in use of the WHO surgical safety checklist in the operating room: a multicenter prospective cross-sectional study. J Am Coll Surg. 2015 Jan;220(1):1-11.e4. doi: 10.1016/j.jamcollsurg.2014.09.021. Epub 2014 Oct 12. PubMed PMID: 25456785.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	5 English hospitals	2: 代替アウトカム	Variability in How the WHO Checklist Was Used at Time-Out / Sign-Out.	A bespoke Checklist Usability Tool (CUT) for assessment of variation in checklist use was developed. On average, two-thirds of the items were checked, team members were absent in more than 40% of cases, and they failed to pause or focus on the checks in more than 70% of cases. Information sharing could be improved across the entire operating room (OR) team. Sign-out was not completed in 39% of cases, largely due to uncertainty about when to conduct it.	N.A.	N.A.	
42	Patel J, Ahmed K, Guru KA, Khan F, Marsh H, Shamim Khan M, Dasgupta P. An overview of the use and implementation of checklists in surgical specialities – a systematic review. Int J Surg. 2014 Dec;12(12):1317-23. doi: 10.1016/j.ijsu.2014.10.031. Epub 2014 Oct 28. Review. PubMed PMID: 25448652.	1A: システマティックレビューまたはメタアナリシス	システマティックレビュー	WHOSSCの使用	The literature search found 916 potentially relevant articles. A final total of 16 studies were identified that observed the use of checklists in various surgical specialties	1: 臨床アウトカム	Compliance of the WHO Checklist, Percentage decrease in post-operative complication rate and mortal rate.	The positive impact of the WHO surgical safety checklist on patient outcomes and post-operative complications can be seen in several studies. It is thought that the use of checklists in surgery can reduce the incidence of wrong site surgery, as well as reduce complications, something which has been mentioned in various studies. There is a general consensus amongst surgical staff that the WHO checklist is beneficial, and as a result has been widely accepted.	N.A.	N.A.	

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
43	Russ SJ, Sevdalis N, Moorthy K, Mayer EK, Rout S, Caris J, Mansell J, Davies R, Vincent C, Darzi A. A qualitative evaluation of the barriers and facilitators toward implementation of the WHO surgical safety checklist across hospitals in England: lessons from the "Surgical Checklist Implementation Project". Ann Surg. 2015 Jan;261(1):81-91. doi: 10.1097/SLA.0000000000000793. PubMed PMID: 25072435.	4: 対照群のない観察研究	質的研究 (インタビュー等)	WHOSSCの使用	A longitudinal interview study with operating room personnel was conducted across a representative sample of 10 hospitals in England.	4: エラーや有害事象の減少に寄与するアウトカムがない	Checklist implementation	Most barriers to implementation were specific to the checklist itself (eg, perceived design issues) but also included problematic integration into preexisting processes.	N.A.	N.A.	
44	Cullati S, Licker MJ, Francis P, Degiorgi A, Bezzola P, Courvoisier DS, Chopard P. Implementation of the surgical safety checklist in Switzerland and perceptions of its benefits: cross-sectional survey. PLoS One. 2014 Jun 18;9(7):e101915. doi: 10.1371/journal.pone.0101915. eCollection 2014. PubMed PMID: 25036453; PubMed Central PMCID: PMC4103799.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	Surgeons and anaesthetists working in Swiss hospitals and clinics	2: 代替アウトカム	Perceptions of the SSC	the SSC has been largely implemented in many Swiss hospitals and clinics. Both surgeons and anaesthetists perceived the SSC as a valuable tool in improving intraoperative patient safety and communication among health care professionals, with lesser importance in facilitating teamwork	N.A.	N.A.	
45	van Schoten SM, Kop V, de Blok C, Spreeuwenberg P, Groenewegen PP, Wagner C. Compliance with a time-out procedure intended to prevent wrong surgery in hospitals: results of a national patient safety programme in the Netherlands. BMJ Open. 2014 Jul 3;4(7):e005075. doi: 10.1136/bmjopen-2014-005075.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	Operating rooms of 2 academic, 4 teaching and 12 general Dutch hospitals	2: 代替アウトカム	Compliance of time-out procedure	Large differences in compliance with the TOP were observed between participating hospitals which can be attributed at least in part to the type of hospital, surgical specialty and patient characteristics.	N.A.	N.A.	

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
46	Putnam LR, Levy SM, Sajid M, Dubuisson DA, Rogers NB, Kao LS, Lally KP, Tsao K. Multifaceted interventions improve adherence to the surgical checklist. Surgery. 2014 Aug;156(2):336-44. doi: 10.1016/j.surg.2014.03.032. Epub 2014 Jun 16. PubMed PMID: 24947646	4: 対照群のない観察研究	横断的研究	Safety council was created. Safety workshops, Checklist modification, Stakeholder audit and feedback.	Children's Memorial Hermann Hospital (Texas)	2: 代替アウトカム	Adherence to checklist.	Adherence to the checklist significantly improved. Interventions targeted to improve the culture of safety, local engagement of stakeholders, and comprehension of the checklist significantly improved checklist adherence from 30% to 96% over the course of 2 years.	N.A.	N.A.	
47	Haugen AS, Søfteland E, Almeland SK, Sevdalis N, Vonen B, Eide GE, Nortvedt MW, Harthug S. Effect of the World Health Organization checklist on patient outcomes: a stepped wedge cluster randomized controlled trial. Ann Surg. 2015 May;261(5):821-8. doi: 10.1097/SLA.0000000000000716. PubMed PMID: 24824415	4: 対照群のない観察研究	横断的研究		2 hospitals in Norway; a tertiary teaching hospital (1,100 beds) and a central community hospital (300 beds).	2: 代替アウトカム	Major and minor complications and in-hospital mortality up to 30 days after surgery, Length of stay.	A total of 2212 control procedures were compared with 2263 SCC procedures. The complication rates decreased from 19.9% to 11.5% (P < 0.001), with absolute risk reduction 8.4 (95% confidence interval, 6.3-10.5) from the control to the SSC stages.	N.A.	N.A.	
48	Gillespie BM, Chaboyer W, Thalib L, John M, Fairweather N, Slater K. Effect of using a safety checklist on patient complications after surgery: a systematic review and meta-analysis. Anesthesiology. 2014 Jun;120(6):1380-9. doi: 10.1097/ALN.0000000000000232. Review. PubMed PMID: 24845919.	1A: システマティックレビューまたはメタアナリシス	システマティックレビュー	WHOSSCの使用	Of the 207 intervention studies identified, 7 representing 37,339 patients	1: 臨床アウトカム	Complication rate, Mortality	The use of checklists in surgery compared with standard practice led to a reduction in any complication and wound infection and also reduction in blood loss. There were no significant reductions in mortality	N.A.	N.A.	
49	Bergs J, Hellings J, Cleemput I, Zurel Ö, De Troyer V, Van Hiel M, Demeere JL, Claeys D, Vandijck D. Systematic review and meta-analysis of the effect of the World Health Organization surgical safety checklist on postoperative complications. Br J Surg. 2014 Feb;101(3):150-8. doi: 10.1002/bjs.9381. Review. PubMed PMID: 24469615.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	The Cochrane Library, MEDLINE, Embase and CINAHL were searched. Seven of 723 studies identified met the inclusion criteria.	2: 代替アウトカム	Complication, surgical-site infection (SSI) and mortality.	Risk ratios for any complication, mortality and SSI were 0.59 (95 per cent confidence interval 0.47 to 0.74), 0.77 (0.60 to 0.98) and 0.57 (0.41 to 0.79) respectively. There was a strong correlation between a significant decrease in postoperative complications and adherence to aspects of care embedded in the checklist (Q = 0.82; P =	N.A.	N.A.	

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
50	Lepänluoma M, Takala R, Kotkansalo A, Rahi M, Ikonen TS. Surgical safety checklist is associated with improved operating room safety culture, reduced wound complications, and unplanned readmissions in a pilot study in neurosurgery. Scand J Surg. 2014 Mar;103(1):66-72. doi: 10.1177/1457496913482255. Epub 2013 Dec 17. PubMed PMID: 24345978.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	From structured questionnaires delivered to operating room personnel, answers were analyzed during 89 and 73 neurosurgical operations before and after the checklist implementation, respectively.	2: 代替アウトカム	Communication between the surgeon and the anesthesiologist, safety-related issues, Wound complications	Communication between the surgeon and the anesthesiologist was enhanced, and safety-related issues were better covered when the checklist was used. Unplanned readmissions fell from 25% to 10% after the checklist implementation (p = 0.02). Wound complications decreased from 19% to 8% (p = 0.04).	N.A.	N.A.	
51	Vasconcelos H, Bomfim CC, Mello MJ, Borges PS, Couceiro TC, Orange FA. Is the anesthesiologist actually prepared for loss of airway or respiratory function? A cross-sectional study conducted in a tertiary hospital. Rev Assoc Med Bras (1992). 2014 Jan-Feb;60(1):40-6. PubMed PMID: 24918851.	4: 対照群のない観察研究	前後比較研究	WHOSSCの使用	87 patients aged 18 to 60 years	2: 代替アウトカム	Compliance	It was found that in 87.4% of patients, the airway was not evaluated using the Mallampati classification and in 51.7% of cases, preoperative fasting was not confirmed	N.A.	N.A.	
52	McDowell DS, McComb SA. Safety checklist briefings: a systematic review of the literature. AORN J. 2014 Jan;99(1):125-137.e13. doi: 10.1016/j.aorn.2013.11.015. Review. PubMed PMID: 24369977.	1A: システムティックレビューまたはメタアナリシス	システムティックレビュー	WHOSSCの使用	23 studies conducted in 17 countries	2: 代替アウトカム	The studies used a variety of methodologies and outcome measures.	Common themes in the studies included enhanced patient safety, improved compliance over time, and increased communication among team members when checklists were used.	N.A.	N.A.	
53	Pickering SP, Robertson ER, Griffin D, Hadi M, Morgan LJ, Catchpole KC, New S, Collins G, McCulloch P. Compliance and use of the World Health Organization checklist in U.K. operating theatres. Br J Surg. 2013 Nov;100(12):1664-70. doi: 10.1002/bjs.9305. PubMed PMID: 24264792.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	One district general hospital, three teaching hospitals and one tertiary referral centre.	2: 代替アウトカム	The attempt rate of time-out and sign-out, the median time taken to perform a time-out	The time-out section of the WHOSSC was usually attempted, but the sign-out section was not.	N.A.	N.A.	

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
54	Saturno PJ, Soria-Aledo V, Da Silva Gama ZA, Lorca-Parra F, Grau-Polan M. Understanding WHO surgical checklist implementation: tricks and pitfalls. An observational study. World J Surg. 2014 Feb;38(2):287-95. doi: 10.1007/s00268-013-2300-6. PubMed PMID: 24142333.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	A regional network of nine Spanish hospitals	2: 代替アウトカム	SSC compliance was assessed overall and by item.	In the retrospective evaluation the SSC was present in 83.1 % of cases, fully completed in 28.4 %, with 69.3 % of all possible items checked. Recorded SSC compliance may be widely unreliable and higher than actual compliance, particularly when recording is facilitated by using an electronic format.	N.A.	N.A.	
55	Boaz M, Bermant A, Ezri T, Lakstein D, Berlovitz Y, Laniado I, Feldbrin Z. Effect of Surgical Safety checklist implementation on the occurrence of postoperative complications in orthopedic patients. Isr Med Assoc J. 2014 Jan;16(1):20-5. PubMed PMID: 24575500.	4: 対照群のない観察研究	前後比較研究	WHOSSCの使用	The records of 760 patients (380 in each group) hospitalized during this 12 month period were analyzed.	1: 臨床アウトカム	Postoperative f	Postoperative fever occurred in 5.3% versus 10.6% of patients with and without the checklist respectively (P = 0.008). Significantly more patients received only postoperative prophylactic antibiotics rather than both pre-and postoperative antibiotic treatment prior to implementation of the	N.A.	N.A.	
56	Papaconstantinou HT, Smythe WR, Reznik SI, Sibbitt S, Wehbe-Janek H. Surgical safety checklist and operating room efficiency: results from a large multispecialty tertiary care hospital. Am J Surg. 2013 Dec;206(6):853-9; discussion 859-60. doi: 10.1016/j.amjsurg.2013.08.016. Epub 2013 Oct 8. PubMed PMID: 24112671.	4: 対照群のない観察研究	前後比較研究	WHOSSCの使用	All operations at one large multispecialty tertiary care hospital	2: 代替アウトカム	operating room time, operation time, first starts on time, and same-day cancellations, etc.	A total of 35,570 operations were reviewed: 17,204 pre-SSC and 18,366 post-SSC. There was no difference between groups for operating room time (P = .93), operation time (P = .66), first starts on time (P = .15), and same-day cancellations (P = .57). The mean OR disposable cost was significantly lower (\$70/operation) for the post-SSC group (P < .01).	N.A.	N.A.	

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
57	Sparks EA, Wehbe-Janek H, Johnson RL, Smythe WR, Papaconstantinou HT. Surgical Safety Checklist compliance: a job done poorly! J Am Coll Surg. 2013 Nov;217(5):867-73.e1-3. doi: 10.1016/j.jamcollsurg.2013.07.393. Epub 2013 Aug 21. PubMed PMID: 23973104.	4: 対照群のない観察研究	前後比較研究	WHOSSCの使用	One institution	2: 代替アウトカム	compliance score etc.	Mean overall compliance score was 27.7 (± 5.4 SD) of 40 possible points (69.3% ± 13.5% of total possible score; n = 671) and did not change over time. Although completion scores were high (16.9 ± 2.7 out of 20 [84.5% ± 13.6%]), accuracy was poor (10.8 ± 3.4 out of 20 [54.1% ± 16.9%]). Overall compliance score was significantly associated with case start-time (p < 0.05), and operative time and case complexity showed no association.	N.A.	N.A.	
58	Hannam JA, Glass L, Kwon J, Windsor J, Stapelberg F, Callaghan K, Merry AF, Mitchell SJ. A prospective, observational study of the effects of implementation strategy on compliance with a surgical safety checklist. BMJ Qual Saf. 2013 Nov;22(11):940-7. doi: 10.1136/bmjqs-2012-001749. Epub 2013 Jul 9. PubMed PMID: 23840072.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	An original WHO pilot study centre (Hospital 1) with that at a similar neighbouring hospital (Hospital 2) that independently integrated the SSC with preexisting practice.	2: 代替アウトカム	Domain compliance	Domain compliance at Hospital 1 and Hospital 2, respectively, was: 96% and 31% (p<0.0005) for Sign In; 99% and 48% (p<0.0005) for Time Out and 22% and 9% (p=0.008) for Sign Out. Engagement of two or more teams during Sign In and Time Out occurred more frequently at Hospital 2 than at Hospital 1.	N.A.	N.A.	
59	Haugen AS, Søfteland E, Eide GE, Sevdalis N, Vincent CA, Nortvedt MW, Harthug S. Impact of the World Health Organization's Surgical Safety Checklist on safety culture in the operating theatre: a controlled intervention study. Br J Anaesth. 2013 May;110(5):807-15. doi: 10.1093/bja/aet005. Epub 2013 Feb 12. PubMed PMID: 23404986; PubMed Central PMCID: PMC3630285.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	a single Norwegian university hospital.	2: 代替アウトカム	Norwegian version of the Hospital Survey on Patient Safety Culture.	Significant positive changes in the checklist intervention group for the culture factors 'frequency of events reported' and 'adequate staffing'. Overall, the intervention group reported significantly		N.A.	

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
60	Cullati S, Le Du S, Raë AC, Micallef M, Khabiri E, Ourahmoune A, Boireaux A, Licker M, Chopard P. Is the Surgical Safety Checklist successfully conducted? An observational study of social interactions in the operating rooms of a tertiary hospital. <i>BMJ Qual Saf.</i> 2013 Aug;22(8):639-46. doi: 10.1136/bmjqs-2012-001634. Epub 2013 Mar 8. PubMed PMID: 23476070.	4: 対照群のない観察研究	前後比較研究	WHOSSCの使用	Geneva University Hospitals	2: 代替アウトカム	Validation of the items, etc.	Items were mostly confirmed during the Time Out (range 100-72%) but less often during the Sign Out (range 86-19%). Validation of the items was far from optimal: only 13% of Time Outs and 3% of Sign Outs were properly checked (all items validated).	N.A.	N.A.	
61	Poon SJ, Zuckerman SL, Mainthia R, Hagan SL, Lockney DT, Zotov A, Holt GE, Bennett ML, Anders S, France DJ. Methodology and bias in assessing compliance with a surgical safety checklist. <i>Jt Comm J Qual Patient Saf.</i> 2013 Feb;39(2):77-82. PubMed PMID: 23427479.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	A single observer group made up of medical students and nurses recorded compliance with each of the 11 standardized items of the time-out.	2: 代替アウトカム	Compliance.	One item (procedure to be performed) achieved > 95% compliance. Three items (surgical site; availability of necessary blood products, implants, devices; and start of antibiotics) achieved 80%-95% compliance. Of the 11 items on the time-out being evaluated, there was a statistically significant difference between medical student and nursing observations for 10 items ($p < .05$).			
62	Fudickar A, Hörle K, Wiltfang J, Bein B. The effect of the WHO Surgical Safety Checklist on complication rate and communication. <i>Dtsch Arztebl Int.</i> 2012 Oct;109(42):695-701. doi: 10.3238/arztebl.2012.0695. Epub 2012 Oct 19. Review. PubMed PMID: 23264813; PubMed Central PMCID: PMC3489074.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	The 20 studies that we analyzed included a single prospective randomized trial concerning the effect of the WHO checklist on safety-related behavior in the operating room.	2: 代替アウトカム	Effects on perioperative morbidity and mortality, Effects on safety culture, Practical implementation, Acceptance in the operating room	The two surgical outcome studies documented a relative improvement of perioperative mortality by 47% in one study (from 56 in 3733 cases [1.5%] to 32 in 3955 cases [0.8%]) and by 62% in the other (from 31 in 842 cases [3.7%] to 13 in 908 cases [1.4%]), as well as a relative improvement of perioperative morbidity by 36% in one study (from 411 in 3733 cases [11.0%] to 288 in 3,955 cases [7.3%]) and by 37% in the other (from 151 in 842 cases [17.9%] to 102 in	N.A.	N.A.	

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
63	Mohammed A, Wu J, Biggs T, Ofili-Yebovi D, Cox M, Pacquette S, Duffy S. Does use of a World Health Organization obstetric safe surgery checklist improve communication between obstetricians and anaesthetists? A retrospective study of 389 caesarean sections. BJOG. 2013 Apr;120(5):644-8. doi: 10.1111/1471-0528.12041. Epub 2012 Nov 27. PubMed PMID: 23190321.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	a Teaching hospital in London, 195 caesarean sections before introduction of the WHO safe surgery checklist and 194 caesarean sections after checklist introduction were studied	2: 代替アウトカム	Differences in grading	WHO Obstetric Safe Surgery checklist improves the communication of caesarean section grade (urgency) between obstetricians and anaesthetists.	N.A.	N.A.	
64	Romain B, Chemaly R, Meyer N, Brigand C, Steinmetz JP, Rohr S. Value of a preoperative checklist for laparoscopic appendectomy and cholecystectomy. J Visc Surg. 2012 Dec;149(6):408-11. doi: 10.1016/j.jviscsurg.2012.10.001. Epub 2012 Nov 17. PubMed PMID: 23164526.	4: 対照群のない観察研究	前後比較研究	WHOSSCの使用	Laparoscopic procedures	1: 臨床アウトカム	The number of incidents etc.	The risk of at least one incident to occur during the procedure was increased 3-fold ([1.36 vs. 6.64], P=0.007) when the checklist was not used compared to when the preoperative checklist was used. Likewise, the number of incidents increased 2.4-fold ([1.15; 5.01], P=0.02), compared to when the preoperative checklist was used. The checklist significantly reduced the proportion of incidences during which time was lost from 22%	N.A.	N.A.	

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
65	Borchard A, Schwappach DL, Barbir A, Bezzola P. A systematic review of the effectiveness, compliance, and critical factors for implementation of safety checklists in surgery. Ann Surg. 2012 Dec;256(6):925-33. doi: 10.1097/SLA.0b013e3182682f27. Review. PubMed PMID: 22968074.	1A: システマティックレビューまたはメタアナリシス	システムティックレビュー	WHOSSCの使用	Medline including Premedline (OvidSP), Embase, and Cochrane Collaboration Library, hand search, a search of reference lists of key articles, and tables of content.	1: 臨床アウトカム	Mortality, etc.	With the use of checklists, the relative risk for mortality is 0.57 [95% confidence interval (CI): 0.42-0.76] and for any complications 0.63 (95% CI: 0.58-0.67). The overall compliance rate ranged from 12% to 100% (mean: 75%) and for the Time Out from 70% to 100% (mean: 91%).	N.A.	N.A.	
66	Levy SM, Senter CE, Hawkins RB, Zhao JY, Doody K, Kao LS, Lally KP, Tsao K. Implementing a surgical checklist: more than checking a box. Surgery. 2012 Sep;152(3):331-6. doi: 10.1016/j.surg.2012.05.034. Epub 2012 Jul 6. PubMed PMID: 22770952.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	One hospital. A total of 142 pediatric surgical cases were observed.	2: 代替アウトカム	Compliance.	Hospital reported data demonstrated 100% compliance with the preincision phase of the checklist for these cases. None of the cases completely executed all items on the checklist, and the average number of checklist items performed in the observed cases was 4 of 13. The most commonly performed checkpoint were the confirmation of patient name and procedure (99%) and the	N.A.	N.A.	
67	Yuan CT, Walsh D, Tomarken JL, Alpern R, Shakpeh J, Bradley EH. Incorporating the World Health Organization Surgical Safety Checklist into practice at two hospitals in Liberia. Jt Comm J Qual Patient Saf. 2012 Jun;38(6):254-60. PubMed PMID: 22737776.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	two hospitals in the resource-limited setting of Liberia, 232 consecutively enrolled patients who were undergoing surgery.	2: 代替アウトカム	Overall surgical processes and surgical outcomes.	The introduction of the checklist was associated with significant ($p < 0.05$) improvements in terms of overall surgical processes and surgical outcomes.	N.A.	N.A.	

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
68	Pérez-Guisado J, de Haro-Padilla JM, Rioja LF. Implementation of the World Health Organization surgical safety checklist in plastic and reconstructive patients. <i>Plast Reconstr Surg.</i> 2012 Mar;129(3):600e-602e. doi: 10.1097/PRS.0b013e3182419b1c. PubMed PMID: 22374042.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	n=1684 patients; 719 operations under general anesthesia and 965 operations under local anesthesia	2: 代替アウトカム	Surgical Safety Checklist Item Implementation	Results were better for operations performed under local anesthesia (resident surgeons in charge) when compared with operations performed under general anesthesia (94.87 percent versus 83.63 percent).	N.A.	N.A.	
69	Berrisford RG, Wilson IH, Davidge M, Sanders D. Surgical time out checklist with debriefing and multidisciplinary feedback improves venous thromboembolism prophylaxis in thoracic surgery: a prospective audit. <i>Eur J Cardiothorac Surg.</i> 2012 Jun;41(6):1326-9. doi: 10.1093/ejcts/ezr179. Epub 2011 Dec 26. PubMed PMID: 22374042.	4: 対照群のない観察研究	前後比較研究	WHOSSC (time out) の使用	959 patients of 990 (96.8%) undergoing thoracic surgery.	2: 代替アウトカム	Errors.	After a lag period of 15 months, during which the team underwent human factors training, introduced debriefing and escalated VTE prophylaxis to regular departmental meetings, VTE prophylaxis errors were substantially reduced.	N.A.	N.A.	
70	van Klei WA, Hoff RG, van Aarnhem EE, Simmermacher RK, Regli LP, Kappen TH, van Wolfswinkel L, Kalkman CJ, Buhre WF, Peelen LM. Effects of the introduction of the WHO "Surgical Safety Checklist" on in-hospital mortality: a cohort study. <i>Ann Surg.</i> 2012 Jan;255(1):44-9. doi: 10.1097/SLA.0b013e31823779ae. PubMed PMID: 22123159.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	The University Medical Center Utrecht (The Netherlands), 11,151 patients	2: 代替アウトカム	In-hospital mortality within 30 days after surgery.	After checklist implementation, crude mortality decreased from 3.13% to 2.85% (P = 0.19). After adjustment for baseline differences, mortality was significantly decreased after checklist implementation (odds ratio [OR] 0.85; 95% CI, 0.73-0.98).	N.A.	N.A.	

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
71	Takala RS, Pauniahio SL, Kotkansalo A, Helmiö P, Blomgren K, Helminen M, Kinnunen M, Takala A, Aaltonen R, Katila AJ, Peltomaa K, Ikonen TS. A pilot study of the implementation of WHO surgical checklist in Finland: improvements in activities and communication. Acta Anaesthesiol Scand. 2011 Nov;55(10):1206-14. doi: 10.1111/j.1399-6576.2011.02525.x. Epub 2011 Sep 26. PubMed PMID: 22092125.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	Four university and teaching hospitals, Questionnaires were returned from 1748 operations, 901 before and 847 after checklist implementation.	2: 代替アウトカム	Performance of safety checks and communication.	Patient's identity was more often confirmed and knowledge of names and roles among team members improved with the checklist. Anaesthesiologists and surgeons discussed critical events pre-operatively more frequently after the checklist.	N.A.	N.A.	
72	Vogts N, Hannam JA, Merry AF, Mitchell SJ. Compliance and quality in administration of a Surgical Safety Checklist in a tertiary New Zealand hospital. N Z Med J. 2011 Sep 9;124(1342):48-58. PubMed PMID: 21963925.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	100 adult surgical cases were observed.	2: 代替アウトカム	The rate (per 100 cases) of the checklist domain administration.	The mean (range) checklist item compliance was 56% (27-100%) for Sign In, 69% (33-100%) for Time Out, and 40% for Sign Out. Checklist items related to patient identity and surgical procedure were administered in 100% of Sign In	N.A.	N.A.	
73	Calland JF, Turrentine FE, Guerlain S, Bovbjerg V, Poole GR, Lebeau K, Peugh J, Adams RB. The surgical safety checklist: lessons learned during implementation. Am Surg. 2011 Sep;77(9):1131-7. PubMed PMID: 21944620.	1: 無作為化比較試験	無作為化比較試験 (RCT)	WHOSSCの使用	47 laparoscopic cholecystectomies.	1: 臨床アウトカム	patient outcomes, case times, or technical proficiency	Participants in the intervention (checklist) group consistently rated their cases as involving less satisfactory subjective levels of comfort, team efficiency, and communication compared with those performed by surgeons in the control group.	N.A.	N.A.	
74	Panesar SS, Noble DJ, Mirza SB, Patel B, Mann B, Emerton M, Cleary K, Sheikh A, Bhandari M. Can the surgical checklist reduce the risk of wrong site surgery in orthopaedics?—Can the checklist help? Supporting evidence from analysis of a national patient incident reporting system. J Orthop Surg Res. 2011 Apr 18;6:18. doi: 10.1186/1749-799X-6-18. PubMed PMID: 21501466	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	The National Reporting and Learning Service (NRLS) database	2: 代替アウトカム	WHOSSCの使用を想定した場合に防げた有害事象の割合	the checklist could have been prevented 28/133 [21.1% (95%CI 14.1 - 28.0%)] patient safety incidents.	N.A.	N.A.	

	執筆者、題名、雑誌・書籍名、出版日	研究デザインのレベル	研究デザイン	介入の内容	対象者	アウトカムのレベル	アウトカムの指標	主な結果	活動・対策の短所	費用	その他
75	Helmiö P, Blomgren K, Takala A, Pauniahho SL, Takala RS, Ikonen TS. Towards better patient safety: WHO Surgical Safety Checklist in otorhinolaryngology. Clin Otolaryngol. 2011 Jun;36(3):242-7. doi: 10.1111/j.1749-4486.2011.02315.x. PubMed PMID: 21481197.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	The Department of Otorhinolaryngology at the Helsinki University Central Hospital	2: 代替アウトカム	Questions concerned patient-related safety checks, teamwork and communication.	The checklist improved verification of the patient's identity (P < 0.001). Awareness of the patient's medical history, medication and allergies increased (P < 0.001).	N.A.	N.A.	
76	Weiser TG, Haynes AB, Dziekan G, Berry WR, Lipsitz SR, Gawande AA; Safe Surgery Saves Lives Investigators and Study Group. Effect of a 19-item surgical safety checklist during urgent operations in a global patient population. Ann Surg. 2010 May;251(5):976-80. doi: 10.1097/SLA.0b013e3181d970e3. PubMed PMID: 20395848.	4: 対照群のない観察研究	横断的研究	WHOSSCの使用	842 patients had urgent operations before checklist implementation and 908 after checklist implementation	2: 代替アウトカム	Complication rate, Death rates	The complication rate was 18.4% (n = 151) at baseline and 11.7% (n = 102) after the checklist was introduced (P = 0.0001). Death rates dropped from 3.7% to 1.4% following checklist introduction (P = 0.0067). Adherence to 6 measured safety steps improved from 18.6% to 50.7% (P < 0.0001).	N.A.	N.A.	