

Appendix 8.12 Results on barriers, facilitators, implementation strategies and implementation outcomes (Review 2)

Authors (publication year), Country	Variables or data source	Findings on barriers, facilitators, implementation strategies and implementation outcomes
Benn et al. (2012), UK	<p>Implementation factors</p> <p>Frontline staff support for the SPI programme</p> <p>Availability of early adopters to lead the testing of changes</p> <p>Staff understanding of SPI aims & methods</p> <p>Existing clinical administrative systems to support SPI data collection</p> <p>Management of the SPI programme in the hospital</p> <p>Compatibility of SPI objectives with other targets</p> <p>Senior management/executive support & leadership for the SPI programme</p> <p>Support from line managers for the SPI programme</p> <p>Support from nurses for the SPI programme</p> <p>Support from junior doctors for the SPI programme</p> <p>Support from consultants for the SPI programme</p> <p>Initial choice of SPI team members</p> <p>Collaboration between different professional groups</p> <p>Time period over which process data was collected</p>	<p>Significant association between safety culture outcome and the presence of early adopters supporting the program ($p<0.05$), collaboration among various professional groups ($p<0.05$), and the level of process monitoring via data collection ($p<0.001$).</p>
Caris et al. (2017), Netherlands	Compliance to checklist	<p>Compliance to hand hygiene checklist (n=6401, distribution over time not stated)</p> <p>Baseline compliance averaged 46% (ranging from 33% to 74%).</p> <p>2 units with high levels in safety culture measurement showed improvement over time (21% and 16%), 2 units with low levels in safety culture did not improve.</p>
Cavalcanti et al. (2016), Brazil	<p>Adherence to 7 care processes:</p> <p>Tidal volume ≤ 8 mL/kg of predicted body weight</p> <p>Moderate sedation to alert and calm (RASS -3 to 0)</p> <p>Central venous catheter use</p> <p>Urinary catheter use</p> <p>Head-of-bed elevated $\geq 30^\circ$</p> <p>Prophylaxis for venous thromboembolism</p> <p>Diet administration</p>	<p>Intervention improved adherence for the 4 care processes that had poor baseline adherence: increased use of low tidal volume (67.5% vs 58.9% of patient-days; adjusted rate ratio [RR], 1.14; 95% CI, 1.03-1.26; $P = .01$) and patient-days receiving light sedation or alert and calm among patients under mechanical ventilation (40.5% vs 35.0% of patient-days; adjusted RR, 1.19; 95% CI, 1.00-1.42; $P = .05$) and decreased use of central venous catheters (72.4% vs 72.9% of patient-days; adjusted RR, 0.90; 95% CI, 0.83-0.98; $P = .02$) and urinary catheters (62.8% vs 74.8% of patient-days; adjusted RR, 0.86; 95% CI, 0.80-0.93; $P < .001$)</p> <p>Intervention did not affect the 3 care processes with better baseline adherence (bed elevation to $\geq 30^\circ$ [95.6% vs 89.7% of patient-days; adjusted RR, 1.05; 95% CI, 0.99-1.11; $P = .14$]; VTE prophylaxis [74.8% vs 75.0% of patient-days; adjusted RR, 1.05; 95% CI, 0.91-1.22; $P = .50$]; and diet administration [79.2% vs 76.4% of patient-days; adjusted RR, 1.03; 95% CI, 0.89-1.20; $P = .65$])</p>

		Association between adherence and safety culture was not examined.
Damery et al. (2021), UK	Interviews (n=49)	<p>Barriers: Initial skepticism about increased bureaucracy, reliance on strong leadership, and high staff turnover posed challenges..</p> <p>Tensions existed between the evaluation team and clinical.</p> <p>Positive findings were sometimes overemphasized, while challenges were defensively viewed.</p> <p>Long-term sustainability is at risk when one-to-one facilitator support is withdrawn.</p> <p>Facilitators:</p> <p>Positive attitudes towards the intervention from management.</p>
Dodge et al. (2019), US	Interviews (n=15)	<p>Barriers:</p> <p>Difficulties with the training and implementation process, resistance from some staff, high turnover, and the need for persistence.</p> <p>Facilitators:</p> <p>Importance of program "champions," integrating intervention into standard training, taking incremental steps, and celebrating small successes</p>
Dubois et al. (2017), Sweden	Adherence to checklist Identity verifications of patients	<p>Adherence to checklist</p> <p>Identity verifications of patients:</p> <p>Statistically significant increase in accurate patient identity verification by physicians was (from 0% to 87%, $p < 0.001$), and remained high among nurses (from 93% to 96%, $p =$ nonsignificant)</p> <p>Association between adherence and safety culture was not examined</p>

Etheridge et al. (2024), Singapore	Implementation outcomes Feasibility Penetration Fidelity	Feasibility: The training program was highly successful, with 96.9% of OR team members completing the electronic training module. All surgical departments achieved at least 88% compliance, with twelve departments reaching 100% compliance. Penetration: The checklist was effectively integrated into practice, as indicated by the initiation of pause points during OR cases. Fidelity: There were significant improvements in fidelity, demonstrated by the completion of checklist items, cessation of activity by the OR team, and increased eye contact among team members during checklist performance.
Gaston et al. (2016), US	Focus group interviews (n=3, overall 20 participants)	Barriers: Personal attitudes of staff Poor communication in multiprofessional team Facilitators: Use of huddle time
Gillespie et al. (2017), Australia	Barriers and facilitators of implementation	Barriers: Training is time-consuming, Difficulty recalling scenarios and personal relevance of content Facilitators: Face-to-face discussions may enhance understanding, useful for junior staff and integration into educational programs.
Haugen et al. (2020), Norway	Fidelity to checklist use	Fidelity was significantly positive associated with perceptions of safety culture dimensions in 2009 and in 2017 (r=0.07–0.21)
Johnson et al. (2021), India	Compliance to checklist	Compliance to hand hygiene checklist Odds increased 6% per month [odds ratio (OR 1.06, 95% CI 1.03–1.10) 83% of checklists were fully completed Association between compliance and safety culture was not examined
Khan et al. (2024), US	Adherence to I-PASS components	In hospitals with higher adherence to intervention, overall harms fell from 95.3 to 73.6 to 72.3 (P < .05), a 24.1% reduction. Association between adherence and safety culture was not examined
Lamming et al. (2021), UK	Embedded status and fidelity (observed)	Stages of Implementation Checklist 82% units had implemented the intervention Embedded status and fidelity Mean fidelity score across 64 units was 4.9 (scale 1-9) Association between implementation outcomes and safety culture was not examined

Mayer et al. (2011), US	Interviews (pre n=16, post n=16)	<p>Implementation strategies</p> <p>Align objectives: Team training objectives and communication were linked to organizational goals.</p> <p>Organizational support: A patient safety officer and program manager dedicated significant time to the initiative.</p> <p>Engage Frontline leaders: Both formal and informal leaders were actively recruited to participate in the project.</p> <p>Prepare Trainees: Trainees were informed about the unit's selection for training, the training process, and expected outcomes.</p> <p>Resource management: Training sessions were scheduled to minimize disruptions.</p> <p>Facilitate Teamwork application: Staff trained in interdisciplinary groups to break down hierarchy, with opportunities for practice.</p> <p>Measure Effectiveness: Success metrics were established early, with regular updates</p> <p>Barriers:</p> <p>Lack of role clarity of the presons involved, including leadership.</p> <p>Facilitators:</p> <p>Overall morale and trust among team members showed positive changes, with respondents noting better communication and an increased willingness to express concerns.</p>
Molina et al. (2016), US	Self-developed survey for operating room	<p>Adherence to Surgical Safety Checklist</p> <p>54.1% agreement that surgical teams consistently used checklists effectively</p> <p>73.6% agreement that checklists helped prevent problems or complications</p> <p>Association between adherence and safety culture was not examined</p>
Pannick et al. (2017), UK	Implementation outcome Briefing implementation fidelity	<p>Briefing implementation fidelity</p> <p>Varying across units for both frequency (median 80% working days/month, IQR 65%–90%) and engagement (median 70 issues/unit/ month, IQR 34–113)</p> <p>High fidelity to intervention reduced eLOS (OR 0.79, 95% CI 0.67 to 0.94, p:0.006)</p>
Picard et al. (2022), France	Checklist adherence	<p>Checklist adherence improved significantly over time(17% to 44% (p < 0.01).</p> <p>Association between adherence and safety culture was not examined</p>
Reszel et al. (2019), Canada	Interviews (n=15)	<p>Barriers:</p> <p>Some participants found the intervention unclear and suggested providing more details on future activities.</p> <p>Implementation was affected by team interest, staff time constraints, lack of funding, and resistance to change.</p> <p>Staff turnover and shifting priorities were noted as challenges.</p> <p>High program costs were seen as a major barrier to long-term sustainability.</p> <p>Facilitators:</p> <p>Engaged leadership and dedicated MORE^{OB} champions were key facilitators.</p>

Savage et al. (2017), Sweden	Adherence to the Surgical Safety Checklist	Checklist adherence increased slowly to ~90–95% adherence during 2010–2011; χ^2 for trend = 19.749, $p > \chi^2$ = 0.0000 Association between adherence and safety culture was not examined
Schepper et al. (2021), Belgium	Interviews (n=22)	Barriers: Hierarchy as a key barrier to flexible leadership, speaking up, and time-outs at the organizational level. A lack of safety culture also hindered the practical application of the intervention
Verbakel, de Bont, et al. (2015), Netherlands	Interviews pre n=18, post n=18)	Facilitators: Communal awareness of the problem was only raised after getting together and discussing patient safety. The combination of a questionnaire and workshop enhanced the interaction of team members and nourished team feelings. This shared experience also helped them to understand and develop tools and language for daily practice.