

# Exploring the implementation of interventions to reduce catheter-associated urinary tract infections (ENACT)

## Appendices O to W

### Contents

Appendix O: Final list of intervention components following stakeholder, project team and steering group feedback, presented in stakeholder questionnaire .....	2
Appendix P: Relevance and APEASE scores for all intervention components in primary or community care.....	9
Appendix R: Relevance and APEASE scores for all intervention components in secondary care .....	14
Appendix S: Relevance and APEASE scores for all intervention components in care homes .....	18
Appendix T: Intervention components excluded based on stakeholders' feedback .....	21
Appendix U: Theoretical congruence between BCTs and TDF domains for each of the national interventions .....	25
Appendix V: Theoretical congruence between BCTs and TDF domains in national interventions.....	36
Appendix W: Seized and missed opportunities for intervention functions and policy categories for each of the national interventions.....	42

## Appendix O: Final list of intervention components following stakeholder, project team and steering group feedback, presented in stakeholder questionnaire

Theme or barrier (based on CAUTI report)	TDF domains	Intervention	BCTs delivered	Sources of the suggested intervention
Limited and inconsistent documentation and records; Transitions of care; Lack of information regarding placement and duration of catheter insertion	Environmental Context and Resources; Knowledge	Standardised nationwide computer-based documentation, accessible across healthcare sectors, requiring person initiating urinary catheterisation to insert details such as date of catheter insertion, reason for catheterisation, an action plan for review and removal and details of difficult catheterisation (if relevant). Provided when transferring patients across settings	Restructuring the physical environment; Prompts or cues; Action planning; Restructuring the social environment.	Previous CAUTI report, rapid review and stakeholders
CAUTI guidelines not perceived as relevant across hospital departments or settings	Social Professional Role and Identity	Ensure availability of setting and profession specific guidelines which are in agreement and which include examples of how to adapt to local contexts where possible.	Adding objects to the environment or Restructuring the physical environment; Social support practical	Previous CAUTI report, stakeholders, and the project team

<b>Theme or barrier (based on CAUTI report)</b>	<b>TDF domains</b>	<b>Intervention</b>	<b>BCTs delivered</b>	<b>Sources of the suggested intervention</b>
Poor urinary catheter insertion technique	Skills	Provision of face-to-face training for nurses in catheter insertion, maintenance and removal	Instruction on how to perform a behaviour; Behavioural demonstration	Stakeholders
Unavailability of medical alternatives to urinary catheterisation; Lack of knowledge of how to manage patients without catheters	Environmental Context and Resources; Knowledge	Increase availability and visibility of alternatives to catheters including; continence pads, commodes, continence sheaths and female urinary devices (for example, funnel) to encourage wider use.	Restructuring the physical environment; Behavioural substitution; Instruction on how to perform a behaviour	Rapid review, stakeholders, project team and the steering group
Unavailability of medical alternatives to urinary catheterisation; Lack of knowledge of how to manage patients without catheters	Environmental Context and Resources; Knowledge	Promotion or wider implementation of intermittent urinary catheterisation as an alternative to indwelling urinary catheters complemented by staff training on clinical indications and appropriate use of intermittent catheterisation.	Adding objects to the environment; Behavioural substitution; Instruction on how to perform a behaviour; Behavioural practice or rehearsal	Stakeholders and steering group
Unavailability of medical alternatives; Lack of knowledge of how to manage patients without catheters	Environmental Context and Resources; Knowledge	Provision of bladder scanners, accompanied by staff training on how to use scanners, to aid decisions in relation to problems with urinary retention.	Adding objects to the environment; Behavioural substitution; Instruction on how to perform a behaviour;	Rapid review, stakeholders and the steering group

Theme or barrier (based on CAUTI report)	TDF domains	Intervention	BCTs delivered	Sources of the suggested intervention
			Behavioural practice or rehearsal	
Transitions of care; Pre-emptively deciding to insert catheters due to likely subsequent catheterisation	Environmental Context and Resources; Memory, Attention and Decision Making	Creating the rule that staff transferring catheterised patients to another setting, check or review the need for a catheter with the receiving team. This rule could be prompted by a checklist for discharge or admission of patients to another setting.	Restructuring the social environment; Prompts and Cues; Action planning	Previous CAUTI report
Physicians dictate nurses' practice; Lack of peer support and buy-in	Social Influences	Introduction of 'CAUTI Champions' (nurses and doctors). Champions role model how to manage patient and carer requests for catheter, lead on staff education and provide practical support for colleagues wanting to support patients to TWOC (trial without catheter).	Restructuring the social environment; Social support practical	Rapid review, stakeholders, project team and the steering group
The issue of catheterising for convenience; Perceived severity of CAUTI;	Beliefs about Consequences; Knowledge	Intervention to persuade staff of benefits of not using catheters for both patients (for example, loss of mobility, bed sores, lower risk of infection) and staff (for example,	Information about health consequences; Salience of consequences; Instruction on how to perform a behaviour;	Rapid review, stakeholders, project team and the steering group

Theme or barrier (based on CAUTI report)	TDF domains	Intervention	BCTs delivered	Sources of the suggested intervention
Lack of awareness of the risks associated with use of urinary catheter		fewer patients developing infection, improved patient outcomes, lower costs). Reassure staff that not using catheters does not lead to suboptimal care and reframing severity of CAUTI as patient safety issue with a story of a patient who contracted CAUTI.	Social support unspecified; Anticipated regret	
Requests from patients and their carers	Social Influences	Before inserting catheters, staff are required to inform patients and relatives about pros and cons of catheters, risks associated with catheter use, including sepsis and antibiotic resistance as well as the importance of hydration (with or without written resources) and record that this has been explained to patients.	Information about health consequences; Salience of consequences; Pros and cons	Previous CAUTI report and stakeholders
Perceived severity of CAUTI; Lack of awareness of risks associated with catheter use	Beliefs about Consequences; Knowledge	Provide feedback to staff on any patients with CAUTI in their care. Provide case review and analysis of care pathway to identify and feedback where staff could have	Feedback on behaviour; Feedback on outcome of behaviour; Problem solving	Rapid review, stakeholders, project team and the steering group

Theme or barrier (based on CAUTI report)	TDF domains	Intervention	BCTs delivered	Sources of the suggested intervention
		protected the patient and stopped or reviewed catheter use.		
Challenging practice norms for catheterisation in specific patient groups; Absence of standard CAUTI diagnostics criteria to help decision making	Social Influences; Memory, Attention and Decision Making	Compare and feedback rates of catheterisation across similar settings with corresponding rates of infection, if suitable metric is developed.	Social comparison	Previous CAUTI report, steering group and the project team
Perceived severity of CAUTI; Lack of awareness of risks associated with catheter use	Beliefs about Consequences; Knowledge	Cascade a Patient Safety Alert for CAUTI.	Adding objects to the environment; Feedback on outcome of behaviour	Solution suggested by the project team
Lack of information regarding placement and duration of catheter	Knowledge	Implementation of a reminder system to prompt staff to review catheter use, for example a sticker on patient notes or a computerised prompt.	Adding objects to the environment; Prompt and cues	Rapid review, stakeholders, project team and the steering group
Lack of information regarding placement and duration of catheter.	Knowledge	Daily review of number of catheters on ward including rates of catheters fitted, removed and in situ; numbers displayed on ward information board.	Feedback on behaviour	Rapid review, project team and the steering group

<b>Theme or barrier (based on CAUTI report)</b>	<b>TDF domains</b>	<b>Intervention</b>	<b>BCTs delivered</b>	<b>Sources of the suggested intervention</b>
Transitions of care	Environmental Context and Resources	Rule that patients coming from A & E, ICU or surgery have immediate catheter review (with catheter removal where possible) when they arrive on the ward and then review every 24 hours.	Restructuring the social environment; Action planning	Previous CAUTI report, project team and the steering group
Limited and inconsistent documentation and records; Transitions of care	Environmental Context and Resources	Shift manager allocates a staff member (doctor or nurse) to be responsible for review of urinary catheterisation decisions and to be responsible for overseeing and ensuring documentation of catheter decisions or ward transfers.	Restructuring the social environment	Project team and the steering group
Lack of peer support and buy-in	Social Influences	Trust-wide multi-disciplinary commitment to catheter guidelines. Leaders and senior members of staff denouncing catheterising for convenience.	Information about others approval; Restructuring the social environment	Previous CAUTI report, project team and the steering group
Lack of information regarding placement and duration of catheter	Knowledge	GP is given information that a patient is catheterised and the catheter review date when patient is discharged from another care setting and this is clear on patient	Restructuring the social environment; Adding objects to the environment; Prompts and Cues	Stakeholders, project team and the steering group

Theme or barrier (based on CAUTI report)	TDF domains	Intervention	BCTs delivered	Sources of the suggested intervention
		records. GP is prompted to check plan for catheter removal when seeing a patient and refer on to appropriate person.		
Unavailability of medical alternatives to urinary catheterisation; Lack of knowledge of how to manage patients without catheters	Environmental Context and Resources; Knowledge	District nurses to be provided with guidance and support to TWOC - 'trial without catheter'.	Behavioural substitution; Social support practical; Instruction on how to perform a behaviour	Stakeholders, project team and the steering group

## Appendix P: Relevance and APEASE scores for all intervention components in primary or community care

Intervention component	Deemed relevant (maximum number of participants is 11)	A	P	E	A	S	E	Total score (maximum of 66)	APEASE %
Ensure availability of setting and profession specific guidelines which are in agreement and which include examples of how to adapt to local contexts where possible.	11/11	6/11	5/11	6/11	9/11	9/11	7/11	42/66	63%
Creating the rule that staff transferring catheterised patients to another setting, check or review the need for a catheter with the receiving team. This rule could be prompted by a checklist for discharge or admission of patients to another setting.	9/11	8/11	8/11	8/11	8/11	9/11	7/11	48/66	72%
Before inserting catheters, staff are required to inform patients and relatives about pros and cons of catheters, risks associated with catheter use, including sepsis and antibiotic resistance as well as the importance of hydration (with or	9/11	8/11	8/11	7/11	8/11	8/11	6/11	45/66	68%

<b>Intervention component</b>	<b>Deemed relevant (maximum number of participants is 11)</b>	<b>A</b>	<b>P</b>	<b>E</b>	<b>A</b>	<b>S</b>	<b>E</b>	<b>Total score (maximum of 66)</b>	<b>APEASE %</b>
without written resources) and record that this has been explained to patients.									
Intervention to persuade staff of benefits of not using catheters for both patients (for example, loss of mobility, bed sores, lower risk of infection) and staff (for example, fewer patients developing infection, improved patient outcomes, lower costs). Reassure staff that not using catheters does not lead to suboptimal care and reframing severity of CAUTI as patient safety issue with a story of a patient who contracted CAUTI.	9/11	6/11	5/11	7/11	7/11	8/11	5/11	38/66	57%
Standardised nationwide computer-based documentation, accessible across healthcare sectors, requiring person initiating urinary catheterisation to insert details such as date of catheter insertion, reason for catheterisation, an action plan for review and removal and details of difficult catheterisation (if relevant).	8/11	3/11	3/11	8/11	8/11	8/11	7/11	37/11	56%

<b>Intervention component</b>	<b>Deemed relevant (maximum number of participants is 11)</b>	<b>A</b>	<b>P</b>	<b>E</b>	<b>A</b>	<b>S</b>	<b>E</b>	<b>Total score (maximum of 66)</b>	<b>APEASE %</b>
Provided when transferring patients across settings.									
Introduction of 'CAUTI Champions' (nurses and doctors). Champions role model how to manage patient and carer requests for catheter, lead on staff education and provide practical support for colleagues wanting to support patients to TWOC (trial without catheter).	8/11	5/11	3/11	7/11	6/11	8/11	4/11	33/66	50%
Provision of face-to-face training for nurses in catheter insertion, maintenance and removal.	8/11	5/11	3/11	7/11	7/11	6/11	4/11	32/66	48%
Promotion or wider implementation of intermittent urinary catheterisation as an alternative to indwelling urinary catheters complemented by staff training on clinical indications and appropriate use of intermittent catheterisation.	8/11	4/11	2/11	6/11	4/11	6/11	3/11	25/66	37%
Provide feedback to staff on any patients with CAUTI in their care. Provide case review and analysis of care pathway to	8/11	3/11	1/11	5/11	3/11	7/11	4/11	23/66	34%

<b>Intervention component</b>	<b>Deemed relevant (maximum number of participants is 11)</b>	<b>A</b>	<b>P</b>	<b>E</b>	<b>A</b>	<b>S</b>	<b>E</b>	<b>Total score (maximum of 66)</b>	<b>APEASE %</b>
identify and feedback where staff could have protected the patient and stopped or reviewed catheter use.									
Implementation of a reminder system to prompt staff to review catheter use, for example a sticker on patient notes or a computerised prompt.	7/11	6/11	5/11	7/11	8/11	7/11	4/11	37/66	56%
Increase availability and visibility of alternatives to catheters including; continence pads, commodes, continence sheaths and female urinary devices (for example, funnel) to encourage wider use.	7/11	5/11	4/11	5/11	5/11	7/11	4/11	30/66	45%
Compare and feedback rates of catheterisation across similar settings with corresponding rates of infection, if suitable metric is developed.	7/11	5/11	3/11	6/11	5/11	5/11	4/11	28/66	42%
GP is given information that a patient is catheterised and the catheter review date when patient is discharged from another care setting and this is clear on patient records. GP is prompted to check plan for	6/11	7/11	5/11	6/11	6/11	7/11	4/11	35/66	53%

<b>Intervention component</b>	<b>Deemed relevant (maximum number of participants is 11)</b>	<b>A</b>	<b>P</b>	<b>E</b>	<b>A</b>	<b>S</b>	<b>E</b>	<b>Total score (maximum of 66)</b>	<b>APEASE %</b>
catheter removal when seeing a patient and refer on to appropriate person.									
District nurses to be provided with guidance and support to TWOC - 'trial without catheter'.	6/11	4/11	4/11	6/11	6/11	5/11	5/11	30/66	45%
Provision of bladder scanners, accompanied by staff training on how to use scanners, to aid decisions in relation to problems with urinary retention.	6/11	3/11	3/11	6/11	5/11	6/11	4/11	27/66	40%
Cascade a Patient Safety Alert for CAUTI.	6/11	3/11	3/11	6/11	4/11	3/11	3/11	22/66	33%

## Appendix R: Relevance and APEASE scores for all intervention components in secondary care

Intervention component	Deemed relevant	A	P	E	A	S	E	Total score	APEASE %
Ensure availability of setting and profession specific guidelines which are in agreement and which include examples of how to adapt to local contexts where possible.	9/9	4/9	4/9	5/9	7/9	7/9	6/9	33/54	61%
Standardised nationwide computer-based documentation, accessible across healthcare sectors, requiring person initiating urinary catheterisation to insert details such as date of catheter insertion, reason for catheterisation, an action plan for review and removal and details of difficult catheterisation (if relevant). Provided when transferring patients across settings.	8/9	3/9	3/9	8/9	8/9	8/9	7/9	37/54	68%
Provision of bladder scanners, accompanied by staff training on how to use scanners, to aid decisions in relation to problems with urinary retention.	7/9	5/9	6/9	7/9	7/9	7/9	5/9	37/54	68%
Before inserting catheters, staff are required to inform patients and relatives about pros and cons of catheters, risks associated with catheter use, including sepsis and antibiotic resistance as well as	7/9	6/9	6/9	6/9	7/9	6/9	6/9	37/54	68%

<b>Intervention component</b>	<b>Deemed relevant</b>	<b>A</b>	<b>P</b>	<b>E</b>	<b>A</b>	<b>S</b>	<b>E</b>	<b>Total score</b>	<b>APEASE %</b>
the importance of hydration (with or without written resources) and record that this has been explained to patients.									
Creating the rule that staff transferring catheterised patients to another setting, check or review the need for a catheter with the receiving team. This rule could be prompted by a checklist for discharge or admission of patients to another setting.	7/9	6/9	6/9	6/9	6/9	7/9	5/9	36/54	66%
Introduction of 'CAUTI Champions' (nurses and doctors). Champions role model how to manage patient and carer requests for catheter, lead on staff education and provide practical support for colleagues wanting to support patients to TWOC (trial without catheter).	7/9	5/9	3/9	7/9	6/9	7/9	5/9	33/54	61%
Intervention to persuade staff of benefits of not using catheters for both patients (for example, loss of mobility, bed sores, lower risk of infection) and staff (for example, fewer patients developing infection, improved patient outcomes, lower costs). Reassure staff that not using catheters does not lead to suboptimal care and reframing severity of CAUTI as patient safety issue with a story of a patient who contracted CAUTI.	7/9	5/9	4/9	6/9	5/9	6/9	5/9	31/54	57%

<b>Intervention component</b>	<b>Deemed relevant</b>	<b>A</b>	<b>P</b>	<b>E</b>	<b>A</b>	<b>S</b>	<b>E</b>	<b>Total score</b>	<b>APEASE %</b>
Increase availability and visibility of alternatives to catheters including; continence pads, commodes, continence sheaths and female urinary devices (for example, funnel) to encourage wider use.	7/9	5/9	4/9	5/9	5/9	7/9	4/9	30/54	55%
Provision of face-to-face training for nurses in catheter insertion, maintenance and removal.	6/9	4/9	5/9	6/9	6/9	6/9	5/9	32/54	59%
Trust-wide multi-disciplinary commitment to catheter guidelines. Leaders and senior members of staff denouncing catheterising for convenience.	6/9	6/9	5/9	5/9	5/9	6/9	5/9	32/54	59%
Daily review of number of catheters on ward including rates of catheters fitted, removed and in situ; numbers displayed on ward information board.	6/9	5/9	5/9	5/9	5/9	6/9	5/9	31/54	57%
Implementation of a reminder system to prompt staff to review catheter use, for example a sticker on patient notes or a computerised prompt.	6/9	4/9	4/9	6/9	6/9	5/9	4/9	29/54	53%
Shift manager allocates a staff member (doctor or nurse) to be responsible for review of urinary catheterisation decisions and to be responsible for overseeing and ensuring documentation of catheter decisions/ward transfers.	6/9	5/9	5/9	4/9	4/9	6/9	5/9	29/54	53%
Rule that patients coming from A&E, ICU or surgery have immediate catheter review (with catheter	6/9	4/9	4/9	5/9	5/9	6/9	5/9	29/54	53%

<b>Intervention component</b>	<b>Deemed relevant</b>	<b>A</b>	<b>P</b>	<b>E</b>	<b>A</b>	<b>S</b>	<b>E</b>	<b>Total score</b>	<b>APEASE %</b>
removal where possible) when they arrive on the ward and then review every 24 hours.									
Provide feedback to staff on any patients with CAUTI in their care. Provide case review and analysis of care pathway to identify and feedback where staff could have protected the patient and stopped or reviewed catheter use.	6/9	2/9	2/9	4/9	4/9	6/9	4/9	22/54	40%
Cascade a Patient Safety Alert for CAUTI.	5/9	4/9	4/9	5/9	5/9	4/9	4/9	26/54	48%
Compare and feedback rates of catheterisation across similar settings with corresponding rates of infection, if suitable metric is developed.	5/9	4/9	2/9	4/9	4/9	4/9	4/9	22/54	40%
Promotion or wider implementation of intermittent urinary catheterisation as an alternative to indwelling urinary catheters complemented by staff training on clinical indications and appropriate use of intermittent catheterisation.	5/9	3/9	1/9	5/9	3/9	4/9	3/9	19/54	35%

## Appendix S: Relevance and APEASE scores for all intervention components in care homes

Suggestion	Deemed relevant	A	P	E	A	S	E	Total score	APEASE %
Creating the rule that staff transferring catheterised patients to another setting, check or review the need for a catheter with the receiving team. This rule could be prompted by a checklist for discharge or admission of patients to another setting.	9/10	8/10	7/10	8/10	8/10	9/10	7/10	47/60	78%
Before inserting catheters, staff are required to inform patients and relatives about pros and cons of catheters, risks associated with catheter use, including sepsis and antibiotic resistance as well as the importance of hydration (with or without written resources) and record that this has been explained to patients.	9/10	8/10	7/10	8/10	9/10	8/10	7/10	47/60	78%
Intervention to persuade staff of benefits of not using catheters for both patients (for example, loss of mobility, bed sores, lower risk of infection) and staff (for example, fewer patients developing infection, improved patient outcomes, lower costs). Reassure staff that not using catheters does not lead to suboptimal care and reframing severity of CAUTI as patient safety issue with a story of a patient who contracted CAUTI.	9/10	5/10	3/10	8/10	7/10	8/10	6/10	37/60	61%

<b>Suggestion</b>	<b>Deemed relevant</b>	<b>A</b>	<b>P</b>	<b>E</b>	<b>A</b>	<b>S</b>	<b>E</b>	<b>Total score</b>	<b>APEASE %</b>
Ensure availability of setting and profession specific guidelines which are in agreement and which include examples of how to adapt to local contexts where possible	9/10	4/10	2/10	5/10	7/10	7/10	6/10	31/60	51%
Standardised nationwide computer-based documentation, accessible across healthcare sectors, requiring person initiating urinary catheterisation to insert details such as date of catheter insertion, reason for catheterisation, an action plan for review and removal and details of difficult catheterisation (if relevant). Provided when transferring patients across settings.	8/10	3/10	3/10	8/10	8/10	8/10	7/10	37/60	61%
Increase availability and visibility of alternatives to catheters including; continence pads, commodes, continence sheaths and female urinary devices (for example, funnel) to encourage wider use.	8/10	6/10	4/10	3/10	6/10	6/10	8/10	33/60	55%
Introduction of 'CAUTI Champions' (nurses and doctors). Champions role model how to manage patient and carer requests for catheter, lead on staff education and provide practical support for colleagues wanting to support patients to TWOC (trial without catheter).	8/10	3/10	2/10	7/10	6/10	7/10	5/10	30/60	50%
Provide feedback to staff on any patients with CAUTI in their care. Provide case review and analysis of care pathway to identify and feedback where staff could have	8/10	2/10	1/10	6/10	4/10	7/10	5/10	25/60	41%

<b>Suggestion</b>	<b>Deemed relevant</b>	<b>A</b>	<b>P</b>	<b>E</b>	<b>A</b>	<b>S</b>	<b>E</b>	<b>Total score</b>	<b>APEASE %</b>
protected the patient and stopped or reviewed catheter use.									
Implementation of a reminder system to prompt staff to review catheter use, for example a sticker on patient notes or a computerised prompt.	6/10	5/10	4/10	5/10	5/10	6/10	4/10	29/60	48%
Provision of face-to-face training for nurses in catheter insertion, maintenance and removal.	6/10	3/10	3/10	5/10	6/10	5/10	4/10	26/60	43%
Cascade a Patient Safety Alert for CAUTI.	6/10	4/10	4/10	5/10	4/10	4/10	4/10	25/60	41%
Compare and feedback rates of catheterisation across similar settings with corresponding rates of infection, if suitable metric is developed.	6/10	3/10	1/10	4/10	4/10	4/10	4/10	20/60	33%
Promotion or wider implementation of intermittent urinary catheterisation as an alternative to indwelling urinary catheters complemented by staff training on clinical indications and appropriate use of intermittent catheterisation.	5/10	2/10	0/10	5/10	4/10	4/10	3/10	18/60	30%
Provision of bladder scanners, accompanied by staff training on how to use scanners, to aid decisions in relation to problems with urinary retention.	4/10	1/10	0/10	4/10	3/10	4/10	3/10	15/60	25%

## Appendix T: Intervention components excluded based on stakeholders' feedback

Theme or barrier (based on CAUTI report)	TDF domains	Intervention component	BCTs delivered	Sources of the suggested intervention
Poor urinary catheter insertion technique	Skills	Provision of face-to-face training for nurses in catheter insertion, maintenance and removal	Instruction on how to perform a behaviour; Behavioural demonstration	Stakeholders
Unavailability of medical alternatives to urinary catheterisation; Lack of knowledge of how to manage patients without catheters	Environmental Context and Resources; Knowledge	Increase availability and visibility of alternatives to catheters including; continence pads, commodes, continence sheaths and female urinary devices (for example, funnel) to encourage wider use.	Restructuring the physical environment; Behavioural substitution; Instruction on how to perform a behaviour	Rapid review, stakeholders, project team and the steering group
Unavailability of medical alternatives to urinary catheterisation; Lack of knowledge of how to manage patients without catheters	Environmental Context and Resources; Knowledge	Promotion or wider implementation of intermittent urinary catheterisation as an alternative to indwelling urinary catheters complemented by staff training on clinical indications and appropriate use of intermittent catheterisation.	Adding objects to the environment; Behavioural substitution; Instruction on how to perform a behaviour; Behavioural practice or rehearsal	Stakeholders and steering group

Theme or barrier (based on CAUTI report)	TDF domains	Intervention component	BCTs delivered	Sources of the suggested intervention
Perceived severity of CAUTI; Lack of awareness of risks associated with catheter use	Beliefs about Consequences; Knowledge	Provide feedback to staff on any patients with CAUTI in their care. Provide case review and analysis of care pathway to identify and feedback where staff could have protected the patient and stopped or reviewed catheter use.	Feedback on behaviour; Feedback on outcome of behaviour; Problem solving	Rapid review, stakeholders, project team and the steering group
Challenging practice norms for catheterisation in specific patient groups; Absence of standard CAUTI diagnostics criteria to help decision making	Social Influences; Memory, Attention and Decision Making	Compare and feedback rates of catheterisation across similar settings with corresponding rates of infection, if suitable metric is developed.	Social comparison	Previous CAUTI report, steering group and the project team
Perceived severity of CAUTI; Lack of awareness of risks associated with catheter use	Beliefs about Consequences; Knowledge	Cascade a Patient Safety Alert for CAUTI.	Adding objects to the environment; Feedback on outcome of behaviour	Solution suggested by the project team
Lack of information regarding placement and duration of catheter	Knowledge	Implementation of a reminder system to prompt staff to review catheter use, for example a sticker on patient notes or a computerised prompt.	Adding objects to the environment; Prompt and cues	Rapid review, stakeholders, project team and the steering group

Theme or barrier (based on CAUTI report)	TDF domains	Intervention component	BCTs delivered	Sources of the suggested intervention
Lack of information regarding placement and duration of catheter.	Knowledge	Daily review of number of catheters on ward including rates of catheters fitted, removed and in situ; numbers displayed on ward information board.	Feedback on behaviour	Rapid review, project team and the steering group
Transitions of care	Environmental Context and Resources	Rule that patients coming from A & E, ICU or surgery have immediate catheter review (with catheter removal where possible) when they arrive on the ward and then review every 24 hours.	Restructuring the social environment; Action planning	Previous CAUTI report, project team and the steering group
Limited and inconsistent documentation and records; Transitions of care	Environmental Context and Resources	Shift manager allocates a staff member (doctor or nurse) to be responsible for review of urinary catheterisation decisions and to be responsible for overseeing and ensuring documentation of catheter decisions and ward transfers.	Restructuring the social environment	Project team and the steering group
Lack of peer support and buy-in	Social Influences	Trust-wide multi-disciplinary commitment to catheter guidelines. Leaders and senior members of staff denouncing catheterising for convenience.	Information about others approval; Restructuring the social environment	Previous CAUTI report, project team and the steering group

Theme or barrier (based on CAUTI report)	TDF domains	Intervention component	BCTs delivered	Sources of the suggested intervention
Lack of information regarding placement and duration of catheter	Knowledge	GP is given information that a patient is catheterised and the catheter review date when patient is discharged from another care setting and this is clear on patient records. GP is prompted to check plan for catheter removal when seeing a patient and refer on to appropriate person.	Restructuring the social environment; Adding objects to the environment; Prompts and Cues	Stakeholders, project team and the steering group
Unavailability of medical alternatives to urinary catheterisation; Lack of knowledge of how to manage patients without catheters	Environmental Context and Resources; Knowledge	District nurses to be provided with guidance and support to TWOC - 'trial without catheter'.	Behavioural substitution; Social support practical; Instruction on how to perform a behaviour	Stakeholders, project team and the steering group

## Appendix U: Theoretical congruence between BCTs and TDF domains for each of the national interventions

High congruence matches are indicated with an h in square brackets [H]. Medium congruence matches are indicated by an M in square brackets [M]. Low congruence matches are indicated by an L in square brackets [L].

<b>Intervention</b>	<b>BCTs highlighted for low, medium and high congruence with TDF domains</b>	<b>TDF domains served by the BCT identified in interventions (ranked by importance in evidence review)</b>
HSC Act 2008	Instruction on how to perform the behaviour [L]	No domains of relevance in review of barriers and facilitators.
HSC Act 2008	Monitoring of behaviours by others without feedback [L]	Skills (9 to 10)
HSC Act 2008	Behavioural practice or rehearsal [L]	Beliefs about capabilities (8) Skills (9 to 10)
NICE QS90	Instruction on how to perform the behaviour [L]	No domains of relevance in review of barriers and facilitators.
NICE QS90	Information about health consequences [H]	Knowledge (2) Beliefs about consequences (3)
NICE QS90	Goal setting (behaviour) [L]	Behavioural regulation (7) Beliefs about capabilities (8) Skills (9 to 10) Goals (9 to 10)

<b>Intervention</b>	<b>BCTs highlighted for low, medium and high congruence with TDF domains</b>	<b>TDF domains served by the BCT identified in interventions (ranked by importance in evidence review)</b>
		Intentions (11 to 14)
NICE QSG1	Instruction on how to perform the behaviour [L]	No domains of relevance in review of barriers and facilitators.
NICE QSG1	Information about health consequences [H]	Knowledge (2) Beliefs about consequences (3)
NICE QSG1	Goal setting (behaviour) [L]	Behavioural regulation (7) Beliefs about capabilities (8) Skills (9 to 10) Goals (9 to 10) Intentions (11 to 14)
NICE catheter audit tools	Goal setting (behaviour) [L]	Behavioural regulation (7) Beliefs about capabilities (8) Skills (9 to 10) Goals (9 to 10) Intentions (11 to 14)
NICE catheter audit tools	Self-monitoring (behaviour) [H]	Beliefs about consequences (3) Memory, attention and decision processes (5) Behavioural regulation (7) Beliefs about capabilities (8)

<b>Intervention</b>	<b>BCTs highlighted for low, medium and high congruence with TDF domains</b>	<b>TDF domains served by the BCT identified in interventions (ranked by importance in evidence review)</b>
		Skills (9 to 10)
NICE catheter audit tools	Self-monitoring (outcomes) [H]	Beliefs about consequences (3) Memory, attention and decision processes (5) Behavioural regulation (7) Beliefs about capabilities (8) Skills (9 to 10)
NICE catheter audit tools	Action planning [M]	Memory, attention and decision processes (5) Behavioural regulation (7) Goals (9 to 10) Intentions (11 to 14)
NICE catheter audit tools	Instruction on how to perform the behaviour [L]	No domains of relevance in review of barriers and facilitators.
NICE catheter audit tools	Credible source [M]	Beliefs about consequences (3) Goals (9 to 10) Intentions (11 to 14)
NICE catheter audit tools	Review behavioural goals [L]	Goals (9 to 10) Intentions (11 to 14)
NICE catheter audit tools	Social support (practical) [H]	Social influences (4) Social professional role and identity (6)

<b>Intervention</b>	<b>BCTs highlighted for low, medium and high congruence with TDF domains</b>	<b>TDF domains served by the BCT identified in interventions (ranked by importance in evidence review)</b>
		Beliefs about capabilities (8) Goals (9 to 10) Intentions (11 to 14)
NICE catheter audit tools	Discrepancy between behaviour and goal [L]	No domains of relevance in review of barriers and facilitators.
NICE catheter audit tools	Information about health consequences [H]	Knowledge (2) Beliefs about consequences (3)
NICE catheter audit tools	Information about social environmental consequences [H]	Knowledge (2) Beliefs about consequences (3)
DH PHE 2013	Instruction on how to perform the behaviour [L]	No domains of relevance in review of barriers and facilitators.
DH PHE 2013	Information about health consequences [H]	Knowledge (2) Beliefs about consequences (3)
DH PHE 2013	Monitoring of outcome of behaviour without feedback [L]	Skills (9 to 10)
DH PHE 2013	Monitoring of behaviours by others without feedback [L]	Skills (9 to 10)
Safety thermometer	Goal-setting (outcome) [L]	Behavioural regulation (7) Beliefs about capabilities (8) Skills (9 to 10)

Intervention	BCTs highlighted for low, medium and high congruence with TDF domains	TDF domains served by the BCT identified in interventions (ranked by importance in evidence review)
		Goals (9 to 10) Intentions (11 to 14)
Safety thermometer	Self-monitoring (behaviour) [H]	Beliefs about consequences (3) Memory, attention and decision processes (5) Behavioural regulation (7) Beliefs about capabilities (8) Skills (9 to 10)
Safety thermometer	Self-monitoring (outcome) [H]	Beliefs about consequences (3) Memory, attention and decision processes (5) Behavioural regulation (7) Beliefs about capabilities (8) Skills (9 to 10)
Safety thermometer	Feedback on behaviour [H]	Knowledge (2) Beliefs about consequences (3) Beliefs about capabilities (8) Goals (9 to 10)
Safety thermometer	Feedback on outcome [H]	Knowledge (2) Beliefs about consequences (3) Beliefs about capabilities (8)

Intervention	BCTs highlighted for low, medium and high congruence with TDF domains	TDF domains served by the BCT identified in interventions (ranked by importance in evidence review)
		Goals (9 to 10)
Safety thermometer	Reward (outcome) [L]	Skills (9 to 10) Goals (9 to 10) Intentions (11 to 14) Reinforcement (11 to 14)
Safety thermometer	Information about social environmental consequences [H]	Knowledge (2) Beliefs about consequences (3)
Safety thermometer	Credible Source [M]	Beliefs about consequences (3) Goals (9 to 10) Intentions (11 to 14)
Safety thermometer	Social comparison [M]	Social influences (4)
Epic 3	Self-monitoring (behaviour) [H]	Beliefs about consequences (3) Memory, attention and decision processes (5) Behavioural regulation (7) Beliefs about capabilities (8) Skills (9 to 10)
Epic 3	Information about health consequences [H]	Knowledge (2) Beliefs about consequences (3)

<b>Intervention</b>	<b>BCTs highlighted for low, medium and high congruence with TDF domains</b>	<b>TDF domains served by the BCT identified in interventions (ranked by importance in evidence review)</b>
Epic 3	Instruction on how to perform the behaviour [L]	No domains of relevance in review of barriers and facilitators
Epic 3	Social support (practical) [H]	Social influences (4) Social professional role and identity (6) Beliefs about capabilities (8) Goals (9 to 10) Intentions (11 to 14)
Epic 3	Prompts or cues [H]	Environmental context and resources (1) Memory, attention and decision processes (5) Behavioural regulation (7)
Epic 3	Feedback (behaviour) [H]	Knowledge (2) Beliefs about consequences (3) Beliefs about capabilities (8) Goals (9 to 10)
Epic 3	Feedback (outcomes) [H]	Knowledge (2) Beliefs about consequences (3) Beliefs about capabilities (8) Goals (9 to 10)
High Impact	Self-monitoring (behaviour) [H]	Beliefs about consequences (3)

Intervention	BCTs highlighted for low, medium and high congruence with TDF domains	TDF domains served by the BCT identified in interventions (ranked by importance in evidence review)
		Memory, attention and decision processes (5) Behavioural regulation (7) Beliefs about capabilities (8) Skills (9 to 10)
High Impact	Credible source [M]	Beliefs about consequences (3) Goals (9 to 10) Intentions (11 to 14)
High Impact	Information about social environmental consequences [H]	Knowledge (2) Beliefs about consequences (3)
High Impact	Goal-setting (behaviour) [L]	Behavioural regulation (7) Beliefs about capabilities (8) Skills (9 to 10) Goals (9 to 10) Intentions (11 to 14)
High Impact	Discrepancy between behaviour and goal [L]	No domains of relevance in review of barriers and facilitators.
High Impact	Feedback (behaviour) [H]	Knowledge (2) Beliefs about consequences (3) Beliefs about capabilities (8)

Intervention	BCTs highlighted for low, medium and high congruence with TDF domains	TDF domains served by the BCT identified in interventions (ranked by importance in evidence review)
		Goals (9 to 10)
High Impact	Feedback (outcome) [H]	Knowledge (2) Beliefs about consequences (3) Beliefs about capabilities (8) Goals (9 to 10)
High Impact	Information about health consequences [H]	Knowledge (2) Beliefs about consequences (3)
Catheter Care	Credible source [M]	Beliefs about consequences (3) Goals (9 to 10) Intentions (11 to 14)
Catheter Care	Social support (practical) [H]	Social influences (4) Social professional role and identity (6) Beliefs about capabilities (8) Goals (9 to 10) Intentions (11 to 14)
Catheter Care	Self-monitoring (behaviour) [H]	Beliefs about consequences (2) Memory, attention and decision processes (5) Behavioural regulation (7) Beliefs about capabilities (8)

<b>Intervention</b>	<b>BCTs highlighted for low, medium and high congruence with TDF domains</b>	<b>TDF domains served by the BCT identified in interventions (ranked by importance in evidence review)</b>
		Skills (9 to 10)
Catheter Care	Self-monitoring (outcome) [H]	Beliefs about consequences (3) Memory, attention and decision processes (5) Behavioural regulation (7) Beliefs about capabilities (8) Skills (9 to 10)
Catheter Care	Instruction on how to perform the behaviour [L]	No domains of relevance in review of barriers and facilitators.
Catheter Care	Demonstration of the behaviour [M]	Social influences (4) Skills (9 to 10)
Catheter Care	Behavioural practice or rehearsal [L]	Beliefs about capabilities (8) Skills (9 to 10)
Catheter Care	Identification of self as a role model [M]	Social influences (4)
Catheter Care	Information on health consequences [H]	Knowledge (2) Beliefs about consequences (3)
Catheter Care	Information on emotional consequences [M]	Knowledge (2) Emotions (11 to 14)
Catheter Care	Information on social and environmental consequences [H]	Knowledge (2)

<b>Intervention</b>	<b>BCTs highlighted for low, medium and high congruence with TDF domains</b>	<b>TDF domains served by the BCT identified in interventions (ranked by importance in evidence review)</b>
		Beliefs about consequences (3)
Catheter Care	Monitoring of behaviour by others without feedback [L]	Skills (9 to 10)
HOUDINI	Instruction on how to perform the behaviour [L]	No domains of relevance in review of barriers and facilitators.
HOUDINI	Restructuring the social environment [H]	Environmental context and resources (1) Social influences (6) Behavioural regulation (7)
Catheter Passport	Information about health consequences [H]	Knowledge (2) Beliefs about consequences (3)
Catheter Passport	Social support (practical) [H]	Social Influences (4) Social professional role and identity (6) Beliefs about capabilities (8) Goals (9 to 10) Intentions (11 to 14)
Catheter Passport	Instruction on how to perform the behaviour [L]	No domains of relevance in review of barriers and facilitators.
Catheter Passport	Demonstration of the behaviour [M]	Social influences (4) Skills (9 to 10)

## Appendix V: Theoretical congruence between BCTs and TDF domains in national interventions

### Notes

Linked Theoretical Domains Framework (TDF) domains are based on the integrated mapping matrix. Key domains are indicated by a K in square brackets [K].

<b>BCT</b>	<b>Frequency</b>	<b>Linked TDF domains with importance ranking in brackets</b>	<b>Theoretical congruence between BCT and domain</b>
Feedback (on outcome of behaviour)	3 out of 11 interventions (Safety thermometer, Epic 3, High Impact)	<ul style="list-style-type: none"> <li>• Knowledge (2) [K]</li> <li>• Beliefs about consequences (3) [K]</li> <li>• Beliefs about capabilities (8)</li> <li>• Goals (9 to 10)</li> </ul>	HIGH
Feedback (on behaviour)	3 out of 11 interventions (Safety thermometer, Epic 3, High Impact)	<ul style="list-style-type: none"> <li>• Knowledge (2) [K]</li> <li>• Beliefs about consequences (3) [K]</li> <li>• Beliefs about capabilities (8)</li> <li>• Goals (9)</li> </ul>	HIGH

<b>BCT</b>	<b>Frequency</b>	<b>Linked TDF domains with importance ranking in brackets</b>	<b>Theoretical congruence between BCT and domain</b>
Self-monitoring (behaviour)	5 out of 11 interventions (NICE catheter audit tools, Safety thermometer, Epic 3, High Impact Catheter Care)	<ul style="list-style-type: none"> <li>• Memory, attention, decision processes (5) [K]</li> <li>• Behavioural regulation (7)</li> <li>• Skills (9)</li> <li>• Beliefs about consequences (3) [K]</li> <li>• Beliefs about capabilities (8)</li> </ul>	HIGH
Self-monitoring (outcomes behaviour)	3 out of 11 interventions (NICE catheter audit tools, Safety thermometer, Catheter Care)	<ul style="list-style-type: none"> <li>• Memory, attention, decision processes (5) [K]</li> <li>• Behavioural regulation (7)</li> <li>• Skills (9)</li> <li>• Beliefs about consequences (3) [K]</li> <li>• Beliefs about capabilities (8)</li> </ul>	HIGH
Social support (practical)	4 out of 11 interventions (NICE catheter audit tools, Epic 3, Catheter Care, Catheter Passport)	<ul style="list-style-type: none"> <li>• Social influences (4) [K]</li> <li>• Beliefs about capabilities (8)</li> <li>• Social professional role and identity (6) [K]</li> <li>• Intentions (11 to 14)</li> <li>• Goals (9 to 10)</li> </ul>	HIGH

<b>BCT</b>	<b>Frequency</b>	<b>Linked TDF domains with importance ranking in brackets</b>	<b>Theoretical congruence between BCT and domain</b>
Information about health consequences	8 out of 11 interventions (NICE QS90, NICE QSG1, NICE catheter audit tools, DH PHE 2013, Epic 3, High Impact, Catheter Care, Catheter Passport)	<ul style="list-style-type: none"> <li>• Knowledge (2) [K]</li> <li>• Beliefs about consequences (3) [K]</li> </ul>	HIGH
Information about social environmental consequences	4 out of 11 interventions (NICE catheter audit tools, Safety thermometer, High Impact, Catheter Care)	<ul style="list-style-type: none"> <li>• Knowledge (2) [K]</li> <li>• Beliefs about consequences (3) [K]</li> </ul>	HIGH
Prompts or cues	1 out of 11 interventions (Epic 3)	<ul style="list-style-type: none"> <li>• Memory, attention, decision processes (5) [K]</li> <li>• Environmental context and resources (1) [K]</li> <li>• Behavioural regulation (7)</li> </ul>	HIGH
Restructuring the social environment	1 out of 11 interventions (HOUDINI)	<ul style="list-style-type: none"> <li>• Social influences (4) [K]</li> <li>• Environmental context and resources (1) [K]</li> </ul>	HIGH

<b>BCT</b>	<b>Frequency</b>	<b>Linked TDF domains with importance ranking in brackets</b>	<b>Theoretical congruence between BCT and domain</b>
Action planning	1 out of 11 interventions (NICE catheter audit tools)	<ul style="list-style-type: none"> <li>• Goals (9 to 10)</li> <li>• Intentions (11 to 14)</li> <li>• Memory, attention, decision processes (5) [K]</li> <li>• Behavioural regulation (7)</li> </ul>	MED
Information about emotional consequences	1 out of 11 interventions (Catheter Care)	<ul style="list-style-type: none"> <li>• Knowledge (2) [K]</li> <li>• Emotions (11 to 14)</li> </ul>	MED
Social comparison	1 out of 11 interventions (Safety thermometer)	<ul style="list-style-type: none"> <li>• Social influences (4) [K]</li> </ul>	MED
Demonstration of behaviour	2 out of 11 interventions (Catheter Care, Catheter Passport)	<ul style="list-style-type: none"> <li>• Social influences (4) [K]</li> <li>• Skills (9)</li> </ul>	MED
Credible source	3 out of 11 interventions (NICE catheter audit tools, Safety thermometer, High Impact, Catheter Care)	<ul style="list-style-type: none"> <li>• Beliefs about consequences (3) [K]</li> <li>• Goals (9 to 10)</li> <li>• Intentions (11 to 14)</li> </ul>	MED
Identification of self as a role model	1 out of 11 interventions (Catheter Care)	<ul style="list-style-type: none"> <li>• Social influences (4) [K]</li> </ul>	MED

<b>BCT</b>	<b>Frequency</b>	<b>Linked TDF domains with importance ranking in brackets</b>	<b>Theoretical congruence between BCT and domain</b>
Goal-setting (behaviour)	4 out of 11 interventions (NICE QS90, NICE QSG1, NICE catheter audit tools, High Impact)	<ul style="list-style-type: none"> <li>• Behavioural regulation (7)</li> <li>• Skills (9 to 10)</li> <li>• Beliefs about capabilities (8)</li> <li>• Goals (9 to 10)</li> <li>• Intentions (11 to 14)</li> </ul>	LOW
Goal-setting (outcome)	1 out of 11 interventions (Safety thermometer)	<ul style="list-style-type: none"> <li>• Behavioural regulation (7)</li> <li>• Skills (9 to 10)</li> <li>• Beliefs about capabilities (8)</li> <li>• Goals (9 to 10)</li> <li>• Intentions (11 to 14)</li> </ul>	LOW
Review behaviour goal(s)	1 out of 11 interventions (NICE catheter audit tools)	<ul style="list-style-type: none"> <li>• Goals (9 to 10)</li> <li>• Intentions (11 to 14)</li> </ul>	LOW
Discrepancy between current behaviour and goal(s)	2 out of 11 interventions (NICE catheter audit tools, High Impact)	<ul style="list-style-type: none"> <li>• None</li> </ul>	LOW
Monitoring of outcome of behaviour by others without feedback	1 out of 11 interventions (DH PHE 2013)	<ul style="list-style-type: none"> <li>• Skills (9 to 10)</li> </ul>	LOW

<b>BCT</b>	<b>Frequency</b>	<b>Linked TDF domains with importance ranking in brackets</b>	<b>Theoretical congruence between BCT and domain</b>
Monitoring of the behaviour by others without feedback	3 out of 11 interventions (HSC Act 2008, DH PHE 2013, Catheter Care)	<ul style="list-style-type: none"> <li>• Skills (9 to 10)</li> </ul>	LOW
Instruction on how to perform the behaviour	9 out of 11 interventions (HSC Act 2008, NICE QS90, NICE QSG1, NICE catheter audit tools, DH PHE 2013, Epic 3, Catheter Care, HOUDINI, Catheter Passport)	<ul style="list-style-type: none"> <li>• Skills (9 to 10)</li> </ul>	LOW
Reward (outcome)	1 out of 11 interventions (Safety thermometer)	<ul style="list-style-type: none"> <li>• Skills (9 to 10)</li> <li>• Reinforcement (11 to 14)</li> <li>• Goals (9 to 10)</li> <li>• Intentions (11 to 14)</li> </ul>	LOW
Behavioural practice or rehearsal	2 out of 11 interventions (HSC Act 2008, Catheter Care)	<ul style="list-style-type: none"> <li>• Skills (9 to 10)</li> <li>• Beliefs about capabilities (8)</li> </ul>	LOW

## Appendix W: Seized and missed opportunities for intervention functions and policy categories for each of the national interventions

### Key to tables

For all interventions:

Green (GRN) = opportunity seized (relevant intervention function or policy category delivered).

Red (R) = opportunity missed (relevant intervention or policy category not delivered).

Grey (GRY) = intervention function or policy category not relevant to this analysis.

Yellow (Y) = irrelevant intervention function or policy category delivered.

## The Health and Social Care Act (2008) Code of Practice on the prevention and control of infections and related guidance

	Intervention functions (number of interventions serving each function)								
	Education	Persuasion	Incentivisation	Coercion	Training	Restriction	Environmental restructuring	Modelling	Enablement
COM-B: Physical capability					GRY				GRY
COM-B: Psychological capability TDF: Knowledge; Memory attention, decision processes	GRN				GRN				R
COM-B: Physical opportunity TDF: Environmental context and resources					GRN	R	R		R
COM-B: Social opportunity TDF: Social influences						R	R	R	R
COM-B: Automatic motivation		GRY	GRY	GRY	GRY		GRY	GRY	GRY
COM-B: Reflective motivation TDF: Beliefs about consequences; Social professional role and identity		GRN	R	R	R			R	

## The Health and Social Care Act (2008) Code of Practice on the prevention and control of infections and related guidance

	Policy categories						
	Communication and marketing	Guidelines	Fiscal measures	Regulation	Legislation	Environmental and social planning	Service provision
Education	R	R		R	GRN		R
Persuasion	GRY	GRY		GRY	GRY		GRY
Incentivisation	GRY	GRY	GRY	GRY	GRY		GRY
Coercion	GRY	GRY	GRY	GRY	GRY		GRY
Training		R	R	R	GRN		R
Restriction		GRY		GRY	GRY		
Environmental restructuring		GRY	GRY	GRY	GRY	GRY	
Modelling	GRY						GRY
Enablement		GRY	GRY	GRY	GRY	GRY	GRY

## NICE QS90: Urinary tract infections in adults

	Intervention functions (number of interventions serving each function)							Modelling	Enablement
	Education	Persuasion	Incentivisation	Coercion	Training	Restriction	Environmental restructuring		
COM-B: Physical capability					GRY				GRY
COM-B: Psychological capability TDF: Knowledge; Memory attention, decision processes	GRN				R				R
COM-B: Physical opportunity TDF: Environmental context and resources					R	R	R		R
COM-B: Social opportunity TDF: Social influences						R	R	R	R
COM-B: Automatic motivation		GRY	GRY	GRY	GRY		GRY	GRY	GRY
COM-B: Reflective motivation TDF: Beliefs about consequences; Social professional role and identity	GRN	R	R	R				R	

## NICE QS90: Urinary tract infections in adults

	Policy categories						
	Communication and marketing	Guidelines	Fiscal measures	Regulation	Legislation	Environmental and social planning	Service provision
Education	R	GRN		R	R		R
Persuasion	GRY	GRY		GRY	GRY		GRY
Incentivisation	GRY	GRY	GRY	GRY	GRY		GRY
Coercion	GRY	GRY	GRY	GRY	GRY		GRY
Training		GRY	GRY	GRY	GRY		GRY
Restriction		GRY		GRY	GRY		
Environmental restructuring		GRY	GRY	GRY	GRY	GRY	
Modelling	GRY						GRY
Enablement		GRY	GRY	GRY	GRY	GRY	GRY

## NICE QSG1: Infection prevention and control

	Intervention functions (number of interventions serving each function)								
	Education	Persuasion	Incentivisation	Coercion	Training	Restriction	Environmental restructuring	Modelling	Enablement
COM-B: Physical capability					GRY				GRY
COM-B: Psychological capability TDF: Knowledge; Memory attention, decision processes	GRN				R				R
COM-B: Physical opportunity TDF: Environmental context and resources					R	R	R		R
COM-B: Social opportunity TDF: Social influences						R	R	R	R
COM-B: Automatic motivation		GRY	GRY	GRY	GRY		GRY	GRY	GRY
COM-B: Reflective motivation TDF: Beliefs about consequences; Social professional role and identity	GRN	R	R	R				R	

## NICE QSG1: Infection prevention and control

	Policy categories						
	Communication and marketing	Guidelines	Fiscal measures	Regulation	Legislation	Environmental and social planning	Service provision
Education	R	GRN		R	R		R
Persuasion	GRY	GRY		GRY	GRY		GRY
Incentivisation	GRY	GRY	GRY	GRY	GRY		GRY
Coercion	GRY	GRY	GRY	GRY	GRY		GRY
Training		GRY	GRY	GRY	GRY		GRY
Restriction		GRY		GRY	GRY		
Environmental restructuring		GRY	GRY	GRY	GRY	GRY	
Modelling	GRY						GRY
Enablement		GRY	GRY	GRY	GRY	GRY	GRY

## NICE Catheter audit tools

	Intervention functions (number of interventions serving each function)								
	Education	Persuasion	Incentivisation	Coercion	Training	Restriction	Environmental restructuring	Modelling	Enablement
COM-B: Physical capability					GRY				GRY
COM-B: Psychological capability TDF: Knowledge; Memory attention, decision processes	GRN				R				GRN
COM-B: Physical opportunity TDF: Environmental context and resources					R	R	R		GRN
COM-B: Social opportunity TDF: Social influences						R	R	R	GRN
COM-B: Automatic motivation		GRY	GRY	GRY	GRY		GRY	GRY	GRY
COM-B: Reflective motivation TDF: Beliefs about consequences; Social professional role and identity	GRN	R	R	R				R	

## NICE Catheter audit tools

	Policy categories						
	Communication and marketing	Guidelines	Fiscal measures	Regulation	Legislation	Environmental and social planning	Service provision
Education	R	GRN		R	R		R
Persuasion	GRY	GRY		GRY	GRY		GRY
Incentivisation	GRY	GRY	GRY	GRY	GRY		GRY
Coercion	GRY	GRY	GRY	GRY	GRY		GRY
Training		GRY	GRY	GRY	GRY		GRY
Restriction		GRY		GRY	GRY		
Environmental restructuring		GRY	GRY	GRY	GRY	GRY	
Modelling	GRY						GRY
Enablement		GRN	R	R	R	R	R

## Department of Health and Public Health England (2013) Prevention and control of infections in care homes: an informative resource

	Intervention functions (number of interventions serving each function)								
	Education	Persuasion	Incentivisation	Coercion	Training	Restriction	Environmental restructuring	Modelling	Enablement
COM-B: Physical capability					GRY				GRY
COM-B: Psychological capability TDF: Knowledge; Memory attention, decision processes	GRN				GRN				R
COM-B: Physical opportunity TDF: Environmental context and resources					GRN	R	R		R
COM-B: Social opportunity TDF: Social influences						R	R	R	R
COM-B: Automatic motivation		GRY	GRY	GRY	GRY		GRY	GRY	GRY
COM-B: Reflective motivation TDF: Beliefs about consequences; Social professional role and identity	GRN	R	R	R				R	

## Department of Health and Public Health England (2013) Prevention and control of infections in care homes: an informative resource

	Policy categories						
	Communication and marketing	Guidelines	Fiscal measures	Regulation	Legislation	Environmental and social planning	Service provision
Education	R	GRN		R	R		R
Persuasion	GRY	GRY		GRY	GRY		GRY
Incentivisation	GRY	GRY	GRY	GRY	GRY		GRY
Coercion	GRY	GRY	GRY	GRY	GRY		GRY
Training		GRN	R	R	R		R
Restriction		GRY		GRY	GRY		
Environmental restructuring		GRY	GRY	GRY	GRY	GRY	
Modelling	GRY						GRY
Enablement		GRY	GRY	GRY	GRY	GRY	GRY

## Safety Thermometer

	Intervention functions (number of interventions serving each function)							Modelling	Enablement
	Education	Persuasion	Incentivisation	Coercion	Training	Restriction	Environmental restructuring		
COM-B: Physical capability					GRY				GRY
COM-B: Psychological capability TDF: Knowledge; Memory attention, decision processes	GRN				R				GRN
COM-B: Physical opportunity TDF: Environmental context and resources					R	R	R		GRN
COM-B: Social opportunity TDF: Social influences						R	R	R	GRN
COM-B: Automatic motivation		GRY	GRY	GRY	GRY		GRY	GRY	GRY
COM-B: Reflective motivation TDF: Beliefs about consequences; Social professional role and identity	GRN	R	GRN	R				R	

## Safety thermometer

	Policy categories						
	Communication and marketing	Guidelines	Fiscal measures	Regulation	Legislation	Environmental and social planning	Service provision
Education	R	R		R	R		GRN
Persuasion	GRY	GRY		GRY	GRY		GRY
Incentivisation	R	R	R	R	R		GRN
Coercion	GRY	GRY	GRY	GRY	GRY		GRY
Training		GRY	GRY	GRY	GRY		GRY
Restriction		GRY		GRY	GRY		
Environmental restructuring		GRY	GRY	GRY	GRY	GRY	
Modelling	GRY						GRY
Enablement		R	R	R	R	R	GRN

### EPIC 3

	Intervention functions (number of interventions serving each function)								
	Education	Persuasion	Incentivisation	Coercion	Training	Restriction	Environmental restructuring	Modelling	Enablement
COM-B: Physical capability					GRY				GRY
COM-B: Psychological capability TDF: Knowledge; Memory attention, decision processes	GRN				R				GRN
COM-B: Physical opportunity TDF: Environmental context and resources					R	R	R		GRN
COM-B: Social opportunity TDF: Social influences						R	R	R	GRN
COM-B: Automatic motivation		GRY	GRY	GRY	GRY		GRY	GRY	GRY
COM-B: Reflective motivation TDF: Beliefs about consequences; Social professional role and identity	GRN	R	R	R				R	

## EPIC 3

	Policy categories						
	Communication and marketing	Guidelines	Fiscal measures	Regulation	Legislation	Environmental and social planning	Service provision
Education	R	GRN		R	R		R
Persuasion	GRY	GRY		GRY	GRY		GRY
Incentivisation	GRY	GRY	GRY	GRY	GRY		GRY
Coercion	GRY	GRY	GRY	GRY	GRY		GRY
Training		GRY	GRY	GRY	GRY		GRY
Restriction		GRY		GRY	GRY		
Environmental restructuring		GRY	GRY	GRY	GRY	GRY	
Modelling	GRY						GRY
Enablement		GRN	R	R	R	R	R

## High impact intervention for best practice insertion and care

	Intervention functions (number of interventions serving each function)							Modelling	Enablement
	Education	Persuasion	Incentivisation	Coercion	Training	Restriction	Environmental restructuring		
COM-B: Physical capability					GRY				GRY
COM-B: Psychological capability TDF: Knowledge; Memory attention, decision processes	GRN				GRN				GRN
COM-B: Physical opportunity TDF: Environmental context and resources					GRN	R	R		GRN
COM-B: Social opportunity TDF: Social influences						R	R	R	GRN
COM-B: Automatic motivation		GRY	GRY	GRY	GRY		GRY	GRY	GRY
COM-B: Reflective motivation TDF: Beliefs about consequences; Social professional role and identity	GRN	R	R	R				R	

## High impact intervention for best practice insertion and care

	Policy categories						
	Communication and marketing	Guidelines	Fiscal measures	Regulation	Legislation	Environmental and social planning	Service provision
Education	R	GRN		R	R		R
Persuasion	GRY	GRY		GRY	GRY		GRY
Incentivisation	GRY	GRY	GRY	GRY	GRY		GRY
Coercion	GRY	GRY	GRY	GRY	GRY		GRY
Training		GRN	R	R	R		R
Restriction		GRY		GRY	GRY		
Environmental restructuring		GRY	GRY	GRY	GRY	GRY	
Modelling	GRY						GRY
Enablement		GRN	R	R	R	R	R

## Catheter care: Royal College of Nursing guidance for nurses

	Intervention functions (number of interventions serving each function)							Modelling	Enablement
	Education	Persuasion	Incentivisation	Coercion	Training	Restriction	Environmental restructuring		
COM-B: Physical capability					GRY				GRY
COM-B: Psychological capability TDF: Knowledge; Memory attention, decision processes	GRN				GRN				GRN
COM-B: Physical opportunity TDF: Environmental context and resources					GRN	R	R		GRN
COM-B: Social opportunity TDF: Social influences						R	R	GRN	GRN
COM-B: Automatic motivation		GRY	GRY	GRY	GRY		GRY	GRY	GRY
COM-B: Reflective motivation TDF: Beliefs about consequences; Social professional role and identity	GRN	R	R	R				GRN	

## Catheter care: Royal College of Nursing guidance for nurses

	Policy categories						
	Communication and marketing	Guidelines	Fiscal measures	Regulation	Legislation	Environmental and social planning	Service provision
Education	R	GRN		R	R		R
Persuasion	GRY	GRY		GRY	GRY		GRY
Incentivisation	GRY	GRY	GRY	GRY	GRY		GRY
Coercion	GRY	GRY	GRY	GRY	GRY		GRY
Training		GRN	R	R	R		R
Restriction		GRY		GRY	GRY		
Environmental restructuring		GRY	GRY	GRY	GRY	GRY	
Modelling	R	Y					R
Enablement		GRN	R	R	R	R	R

## HOUDINI protocol

	Intervention functions (number of interventions serving each function)							Modelling	Enablement
	Education	Persuasion	Incentivisation	Coercion	Training	Restriction	Environmental restructuring		
COM-B: Physical capability					GRY				GRY
COM-B: Psychological capability TDF: Knowledge; Memory attention, decision processes	GRN				R				GRN
COM-B: Physical opportunity TDF: Environmental context and resources					R	R	R		GRN
COM-B: Social opportunity TDF: Social influences						R	R	R	GRN
COM-B: Automatic motivation		GRY	GRY	GRY	GRY		GRY	GRY	GRY
COM-B: Reflective motivation TDF: Beliefs about consequences; Social professional role and identity	GRN	R	R	R				R	

## HOUDINI protocol

	Policy categories						
	Communication and marketing	Guidelines	Fiscal measures	Regulation	Legislation	Environmental and social planning	Service provision
Education	R	GRN		R	R		R
Persuasion	GRY	GRY		GRY	GRY		GRY
Incentivisation	GRY	GRY	GRY	GRY	GRY		GRY
Coercion	GRY	GRY	GRY	GRY	GRY		GRY
Training		GRY	GRY	GRY	GRY		GRY
Restriction		GRY		GRY	GRY		
Environmental restructuring		GRY	GRY	GRY	GRY	GRY	
Modelling	GRY						GRY
Enablement		GRN	R	R	R	R	R

## Catheter passport

	Intervention functions (number of interventions serving each function)								
	Education	Persuasion	Incentivisation	Coercion	Training	Restriction	Environmental restructuring	Modelling	Enablement
COM-B: Physical capability					GRY				GRY
COM-B: Psychological capability TDF: Knowledge; Memory attention, decision processes	GRN				R				GRN
COM-B: Physical opportunity TDF: Environmental context and resources					R	R	R		GRN
COM-B: Social opportunity TDF: Social influences						R	R	GRN	GRN
COM-B: Automatic motivation		GRY	GRY	GRY	GRY		GRY	GRY	GRY
COM-B: Reflective motivation TDF: Beliefs about consequences; Social professional role and identity	GRN	R	R	R				GRN	

## Catheter passport

	Policy Categories						
	Communication and marketing	Guidelines	Fiscal measures	Regulation	Legislation	Environmental and social planning	Service provision
Education	R	GRN		R	R		R
Persuasion	GRY	GRY		GRY	GRY		GRY
Incentivisation	GRY	GRY	GRY	GRY	GRY		GRY
Coercion	GRY	GRY	GRY	GRY	GRY		GRY
Training		GRY	GRY	GRY	GRY		GRY
Restriction		GRY		GRY	GRY		
Environmental restructuring		GRY	GRY	GRY	GRY	GRY	
Modelling	R	Y					R
Enablement		GRN	R	R	R	R	R