



CONSULTATION DRAFT

Peripheral Venous Access

Clinical care standard

July 2019

Published by the Australian Commission on Safety and Quality in Health Care

Level 5, 255 Elizabeth Street, Sydney NSW 2000

Phone: (02) 9126 3600

Fax: (02) 9126 3613

Email: mail@safetyandquality.gov.au

Website: www.safetyandquality.gov.au

ISBN: 978-1-925665-57-4

© Australian Commission on Safety and Quality in Health Care 2019

All material and work produced by the Australian Commission on Safety and Quality in Health Care is protected by copyright. The Commission reserves the right to set out the terms and conditions for the use of such material.

As far as practicable, material for which the copyright is owned by a third party will be clearly labelled. The Australian Commission on Safety and Quality in Health Care has made all reasonable efforts to ensure that this material has been reproduced in this publication with the full consent of the copyright owners.

With the exception of any material protected by a trademark, any content provided by third parties, and where otherwise noted, all material presented in this publication is licensed under a

Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International licence.



Enquiries about the licence and any use of this publication are welcome and can be sent to communications@safetyandquality.gov.au.

The Commission's preference is that you attribute this publication (and any material sourced from it) using the following citation:

Australian Commission on Safety and Quality in Health Care. Consultation Draft – Peripheral Venous Access Clinical Care Standard. Sydney: ACSQHC; 2019.

Disclaimer

The Australian Commission on Safety and Quality in Health Care has produced this clinical care standard to support the delivery of appropriate care for a defined condition. The clinical care standard is based on the best evidence available at the time of development. Healthcare professionals are advised to use clinical discretion and consideration of the circumstances of the individual patient, in consultation with the patient and/or their carer or guardian, when applying information in the clinical care standard. Consumers should use the clinical care standard as a guide to inform discussions with their healthcare professionals about the applicability of the clinical care standard to their individual condition.

Please note that there is the potential for minor revisions of this document. Please check www.safetyandquality.gov.au for any amendments.

The Commission does not accept any legal liability for any injury, loss or damage incurred by the use of, or reliance on, this document.

Contents

Peripheral Venous Access Clinical Care Standard Quality Statements	4	Quality statement 1 – Identify need for intravenous access	14
Indicators for local monitoring	5	Quality statement 2 – Inform and partner with patients	16
About clinical care standards	6	Quality statement 3 – Ensure competency	19
About the Australian Commission on Safety and Quality in Health Care	6	Quality statement 4 – Document decisions and care	21
Peripheral venous access	7	Quality statement 5 – Maximise first insertion success	23
When PIVCs are used	7	Quality statement 6 – Choose the right insertion site and peripheral device	24
PIVC use in Australia and internationally	7	Quality statement 7 – Insert and secure	26
Problems associated with using PIVCs	8	Quality statement 8 – Routine use: inspect, access and flush	27
Improving PIVC use	9	Quality statement 9 – Review ongoing need	29
About the Peripheral Venous Access Clinical Care Standard	10	Quality statement 10 – Remove safely and replace if needed	30
Why this is needed	10	Appendix A: Indicators to support local monitoring	32
Goal	10	Appendix B: Measuring and monitoring patient experiences	34
Scope	10	Appendix C: Integration with the National Safety and Quality Health Service Standards	35
Pathway of care	10	Glossary	37
Healthcare settings	11	References	41
What is not covered	11	Acknowledgements	43
Evidence sources that underpin this clinical care standard	11		
Supporting documents	11		
How to use this clinical care standard	12		
General principles of care	12		
Person-centred care	12		
Multidisciplinary care	12		
Carers and family members	13		
Integrated approach to care	13		

Peripheral Venous Access Clinical Care Standard Quality Statements

- 1 Identify need for intravenous access**

A patient requiring medicines or fluids is assessed to identify the most appropriate route of administration for their clinical needs.
- 2 Inform and partner with patients**

A patient requiring intravenous access receives information and education about the need and the procedure so they can provide informed consent and help reduce the risk of device-related complications.
- 3 Ensure competency**

A clinician inserting and/or maintaining a PIVC is trained and assessed as competent in practices to prevent PIVC-related complications that are relevant to their scope of practice, and according to current, evidence-based recommendations.
- 4 Document decisions and care**

A patient with a PIVC will have documentation of the insertion, maintenance and removal of the device, and regular review of the insertion site.
- 5 Maximise first insertion success**

A health service organisation has a procedure to maximise first insertion success.
- 6 Choose the right insertion site and peripheral device**

Where peripheral venous access is appropriate, a clinician assesses the patient to identify the most suitable insertion site and PIVC (length and gauge) to meet the patient's clinical needs and their preferences for its location.
- 7 Insert and secure**

A clinician inserting a patient's PIVC implements standard precautions, including hand hygiene and wearing gloves. Aseptic technique is maintained at all times to reduce the risk of infection. The device is secured, and an appropriate sterile, transparent, semi-permeable dressing is used to help protect it from contamination.
- 8 Routine use: inspect, access and flush**

A clinician inspects a patient's PIVC and insertion site for signs of complications at least once per shift and when accessing the device, or if the patient raises concerns. Standard precautions including hand hygiene, wearing gloves and aseptic technique is maintained at all times when performing site care and accessing the device. Flushing is performed at intervals according to local policy to minimise risk of device failure.
- 9 Review ongoing need**

A clinician will review and document the ongoing need for a patient's PIVC at least daily or more often if clinically indicated.
- 10 Remove safely and replace if needed**

A patient with a PIVC will have it removed when it is no longer needed; at the first sign of malfunctioning or local site complications, including redness, pain or swelling; or at an interval according to a current, locally endorsed evidence-based guideline. A new PIVC will be inserted only if ongoing peripheral vascular access is necessary.

Indicators for local monitoring

Indicators to support monitoring of how well care described in this clinical care standard is implemented have been developed for the following quality statements:

- 3 Ensure competency**
Evidence of a locally approved policy that defines the competency a clinician must demonstrate to insert, monitor and remove PIVCs. The policy should specify how competency is assessed and monitored.
- 4 Document decisions and care**
Evidence of a locally approved policy that defines the information that must be documented for every PICV inserted, where documentation should occur, and the process to audit adherence to the policy.
- 8 Routine use: inspect, access and flush**
Evidence of a locally approved policy that defines procedures that must be followed by a clinician to access, inspect, maintain, and flush a PIVC.

The policy should specify the locally approved inspection protocol and equipment requirements to maintain hand hygiene and aseptic technique.
- 10 Remove safely and replace if needed**
Evidence of a locally approved policy that defines when a PIVC should be removed or replaced and the process to audit adherence to the policy.

See Appendix A for further information about indicators.



About clinical care standards

Clinical care standards aim to support the delivery of appropriate evidence-based clinical care, and promote shared decision-making between patients, carers and clinicians.

A clinical care standard contains a small number of quality statements that describe the clinical care a patient should be offered for a specific clinical condition or when undergoing a specific procedure. It is based on the best available evidence at the time of development. Some of the quality statements are linked to indicators that can be used by health service organisations to monitor how well they are implementing the care recommended in the clinical care standard.

A clinical care standard differs from, and is not intended to be, a clinical practice guideline. Rather than describing all the components of care recommended for managing a clinical condition or performing a certain procedure, a clinical care standard addresses areas of the patient pathway where the need for quality improvement is greatest.

Clinicians are advised to use clinical judgement and consider an individual patient's circumstances, in consultation with the patient, or their carer or guardian, when applying the information in a clinical care standard. Health service organisations are responsible for ensuring that local policies, processes and protocols to guide clinical practice are in place, so that clinicians can apply the information described in the clinical care standard, and so that clinicians and health service organisations can monitor the delivery of appropriate care.

Clinical care standards aim to support key groups of people in the healthcare system by:

- Educating the public about the care that the healthcare system should offer, and helping people to make informed treatment decisions in partnership with their clinicians
- Providing clear information to clinicians to help them make decisions about appropriate care
- Outlining the systems required by health service organisations so that they are better able to review their performance and make improvements in the care that they provide.

The Australian Commission on Safety and Quality in Health Care (the Commission) developed the Peripheral Venous Access Clinical Care Standard in collaboration with consumers, clinicians, researchers and health service organisations. The clinical care standard complements existing efforts, including state- and territory-based initiatives that aim to reduce complications associated with inserting, managing and removing peripheral intravenous catheters.

For more information about this clinical care standard visit www.safetyandquality.gov.au/our-work/clinical-care-standards/

About the Australian Commission on Safety and Quality in Health Care

The Commission is an Australian Government agency that leads and coordinates national improvements in the safety and quality of health care based on the best available evidence. By working in partnership with the Australian Government, states and territories, the private sector, clinical experts, and patients and carers, the Commission aims to ensure that the health system is better informed, supported and organised to deliver safe and high-quality care.

Peripheral venous access

A peripheral intravenous catheter (PIVC) is also known as a peripheral venous line or peripheral intravenous cannula. It is commonly referred to as an 'IV' or a 'drip'. It is a small flexible tube that is inserted through the skin into a peripheral vein. Peripheral veins are the small veins in the arm, hands and feet; PIVCs are usually inserted in the arm. This allows medicines, hydration fluids, nutritional supplements, contrast media and blood products to be given directly into the bloodstream, which otherwise cannot be given, or are less effective if given another way such as by mouth.

When PIVCs are used

When medicines and fluids need to be given intravenously, clinicians need to decide between giving them via a PIVC or a central line. Central lines are tubes that are placed in a large central vein (in the abdomen or chest) that leads directly to the bloodstream near the heart.^{3, 6}

Generally, PIVCs are preferred when intravenous (IV) access is needed for a short time, or when direct access to the blood supply near the heart is not necessary. PIVCs are usually safer, easier to insert and less painful than central lines.

PIVC use in Australia and internationally

In 2016–17, about 11 million patients were admitted to Australian hospitals.¹¹ Inserting a PIVC is one of the most common procedures performed during a patient's hospitalisation – about 70% of patients require at least one PIVC at some point during their hospital stay.^{1, 4}

International studies estimate that, even though this is such a common procedure, 4–28% of PIVCs inserted are not used.⁴ Australian studies report that this figure is even higher in the emergency department, where about 50% of PIVCs inserted are not used. In the emergency department, patients are more likely to have a PIVC inserted as a routine admission procedure – 'just in case' it is needed later, or for the sole purpose of taking blood samples.^{4, 5} International studies on PIVC use have also reported that Australia has the highest prevalence of redundant PIVCs: 43% have no documented IV order for fluids or medicines, suggesting that the PIVC may not have been needed in the first instance.¹²

Quick facts about PIVCs

- 70% of hospitalised patients require at least one PIVC at some point during their hospital stay.^{1, 4}
- 4–28% of PIVCs inserted are not needed.⁴ This increases to 50% in the emergency department, where a PIVC is often inserted 'just in case'.⁵
- Up to 69% of PIVCs are associated with complications, leading to up to 90% of PIVCs being removed before therapy is finished.^{2, 3, 6, 7}
- If a patient has one PIVC fail, the risk of future PIVCs failing is greater.^{2, 8}
- First insertion success rates are poor. Up to 40% of all first insertion attempts in adults fail; up to 65% of first insertion attempts in children fail.^{1, 9, 10}

Problems associated with using PIVCs

Despite their frequency of use, PIVCs are reportedly associated with complications up to 69% of the time, including^{3, 13, 14}:

- Blockage and dislodgment
- Redness and swelling of the vein
- Catheter-associated bloodstream infection, commonly known as Staphylococcus aureus bacteraemia (SAB).

These complications lead to up to 90% of catheters being removed before they are planned to be replaced or therapy is finished.⁶

Unfortunately, not all attempts to insert a PIVC are successful. Up to 40% of all first insertion attempts in adults^{1, 9} and up to 65% of first attempts in children fail.¹⁰ Adding to this complexity is that more than a third of adults and up to half of children who have a PIVC inserted have difficult intravenous access. This is defined as having at least two failed insertion attempts before a successful insertion, and is characterised by veins that are difficult to see and feel.¹⁵ People with difficult intravenous access usually undergo multiple painful attempts before a PIVC is successfully inserted. Highly skilled clinicians or other advanced techniques such as ultra-sound or near infra-red are often needed to successfully insert a PIVC in someone with difficult intravenous access.¹⁶

Box 1 contains a list of factors that may contribute to difficult intravenous access.

When a PIVC fails, it usually needs to be replaced with a new device. This can impose a significant burden on the patient's quality of life and on the health system. Removing the old PIVC and replacing it with a new one means that the patient's therapy is interrupted and their vessel health deteriorates because of the attempts made to insert a PIVC.⁶ As a result, the patient experiences more pain and discomfort, especially when IV access is difficult and multiple attempts are needed to successfully reinsert a PIVC.^{3, 12} Resources – both hospital workforce and material – are also needed to reinsert a new PIVC so that therapy can continue. The cost of managing a PIVC failure can be significant; the average cost of a replacement device is estimated at A\$70 per episode of care.²⁰

Box 1: Factors that might contribute to difficult intravenous access¹⁵⁻¹⁹

- Diseases or conditions that affect the integrity of the vessel structure, such as diabetes
- Known history of poor vein health
- History of more than two attempts to successfully insert a PIVC
- Excessive hair on the arms or hands
- Particular skin types in particular populations
- Presence of scars or tattoos
- Age of the patient
- Obesity or malnourishment
- Dehydration
- History of treatment with anticoagulants or corticosteroids
- Intravenous drug use

Improving PIVC use

To reduce rates of PIVC-related complications, a number of evidence-based strategies have been suggested. Best-practice guidelines recommend that clinicians use a range of techniques to reduce the risk of complications associated with using PIVCs and to preserve a patient's vessel health.³

Box 2 contains a list of techniques to be used to reduce the risk of PIVC related complications:

Box 2: Techniques to reduce the risk of PIVC related complications

- Avoid inserting PIVCs when they are not needed in the first instance
- Ensure that clinicians are highly skilled in inserting and maintaining PIVCs, where relevant to their scope of practice
- Use standard precautions when inserting or accessing a PIVC
- Ensure optimal hand hygiene when inserting or accessing a PIVC
- Place the PIVC in a stable area – for example, in adults, an area of non-flexion such as the forearm; this will also help to reduce the discomfort associated with having a PIVC in place
- Secure the PIVC to prevent movement at the insertion site
- Use airtight and watertight dressings to cover the insertion site and help minimise contamination
- Promptly remove the PIVC when signs of redness or swelling develop, or another complication such as infection is suspected
- Promptly remove the PIVC when it is no longer needed

CONSULTATION

About the Peripheral Venous Access Clinical Care Standard

Why this is needed

Data from Australia and internationally suggest that a significant proportion of patients do not receive the care recommended for the use of PIVCs.⁶ In an international cross-sectional study across 51 countries (including Australia) comparing insertion techniques and management practices with recommended care, widespread variation was noted – for example, PIVCs were:

- Inserted at inappropriate sites
- Covered with substandard dressings
- Showing visible signs of redness and swelling
- In place when they were no longer needed.

This gap between guideline recommendations and current practice has prompted calls for clinicians and health service organisations to adopt evidence-based PIVC insertion and maintenance bundles, as well as checklists, with the aim of reducing rates of PIVC complications.

Goal

The goal of the *Peripheral Venous Access Clinical Care Standard* is to promote the judicious use of PIVCs and to reduce complications by highlighting the importance of maintaining and preserving a patient's vessel health.

To achieve this goal, the clinical care standard includes 10 quality statements to support clinicians and health service organisations to deliver high-quality care to reduce complications associated with inserting, managing and removing PIVCs. It advises about the importance of:

- Considering the most appropriate route of administration for medicines and fluids
- Ensuring that patients are informed about the need for a PIVC and what having a PIVC involves so that they can share in decisions about their care with their clinicians

- Ensuring that clinicians are trained and assessed as competent in inserting and maintaining PIVCs, as relevant to their scope of practice
- Referring as per local policy, if it is unlikely a PIVC will be successfully inserted on the first attempt given the clinician's experience
- Identifying appropriate insertion sites and performing the procedure in a way that optimises first insertion success
- Using standard precautions (including wearing gloves), appropriate securement and dressings to minimise risk of contamination
- Ensuring that the PIVC is accessed and maintained appropriately
- Safely removing and replacing PIVCs, when necessary
- Reviewing the insertion site and documenting the findings.

Scope

This clinical care standard relates to the care that all patients should receive to reduce complications associated with the insertion, maintenance and removal of PIVCs.

Although many of the quality statements are relevant for vascular access in general, this clinical care standard has been developed specifically in relation to the use of PIVCs.

Pathway of care

This clinical care standard covers the period from when a patient is identified as requiring therapy to be administered by the peripheral IV route to completing the therapy and removing the PIVC.

Healthcare settings

The *Peripheral Venous Access Clinical Care Standard* applies to all healthcare settings where PIVCs may be inserted or managed, such as:

- All hospital settings, including public and private hospitals, subacute facilities, and outpatient and day procedure services
- Emergency services, such as ambulance services
- General practice and other community settings where PIVCs may be used, including outreach services such as Hospital in the Home settings.

What is not covered

This clinical care standard does not cover the use of peripherally inserted central catheters or central venous catheters.

Evidence sources that underpin this clinical care standard

Key evidence sources that underpin the *Peripheral Venous Access Clinical Care Standard* are current clinical guidelines from the National Health and Medical Research Council (NHMRC)²¹, United States Centers for Disease Control and Prevention (CDC)²² and Infusion Nurses Society (INS)^{23, 24}, and the United Kingdom's Department of Health²⁵ and Royal College of Nursing (RCN).²⁶ Other resources include Australian state-wide policies from Queensland^{27, 28}, Western Australia²⁹, the Australian Capital Territory³⁰ and New South Wales.³¹

Supporting documents

A suite of supporting documents for this clinical care standard is available at:

www.safetyandquality.gov.au/standards/clinical-care-standards/peripheral-venous-access-clinical-care-standard

How to use this clinical care standard

This clinical care standard describes the key components of care for reducing the risk of complications associated with the use of PIVCs. It should be used as part of providing high-quality, evidence-based care, taking into account the context in which care is provided, local variation in care, and the quality improvement priorities of the individual health service organisation.

When implementing the clinical care standard, health services and clinicians should consider integration with the following:

- Indicators for the *Peripheral Venous Access Clinical Care Standard*. These are listed with each quality statement – see Appendix A
- Other quality measures such as patient reported outcome measures and patient experience measures – see Appendix B
- The [National Safety and Quality Health Service \(NSQHS\) Standards](#) – See Appendix C.

General principles of care

Clinicians are advised to use clinical judgement and consider an individual patient's circumstances, in consultation with the patient, or their carer or guardian, when applying the information in this clinical care standard.

Health service organisations are responsible for ensuring that local policies, processes and protocols to guide clinical practice are in place. This enables clinicians and health service organisations to apply the information in the clinical care standard and monitor the delivery of appropriate care.

Person-centred care

Person-centred care is health care that is respectful of, and responsive to, the preferences, needs and values of patients and consumers.³²

Clinical care standards support the key principles of person-centred care, namely:

- Treating patients with dignity and respect
- Encouraging patient participation in decision-making
- Communicating with patients about their clinical condition and treatment options
- Providing patients with information in a format that they understand so they can participate in decision-making.³³

Multidisciplinary care

During a hospital admission and following discharge from hospital, patients are likely to need specific types of care provided by various clinicians. In this document, the term 'clinician' refers to all types of health professionals who provide direct clinical care to patients.³⁴ Multidisciplinary care refers to comprehensive care provided by different clinicians (for example, doctors, nurses, pharmacists, physiotherapists, other allied health professionals) from one or more organisations, who work collectively with the aim of addressing as many of a patient's health and other needs as possible.³⁵

A coordinated multidisciplinary team approach is essential for delivering the care required to reduce the risk of complications associated with the use of PIVCs.²⁴ Multidisciplinary care of patients can improve health outcomes, and offers more efficient use of health resources. Planning, coordination and regular communication between clinicians are essential components of multidisciplinary care.³⁵

Carers and family members

Carers and family members play an important role in prevention, early recognition, assessment and recovery relating to a patient's health condition. They often know the patient very well, and can provide detailed information about the patient's history, routines or symptoms, which may assist in determining treatment and ongoing support.³²

Although this clinical care standard does not specifically refer to carers and family members, each quality statement should be understood to mean that carers and family members are involved in clinicians' discussions with patients about their care, if the patient prefers carer involvement.

Integrated approach to care

An integrated, systems-based approach supported by health service organisations and their networks is central to the delivery of person-centred care as identified in this clinical care standard. The workforce will need access to resources, policies, processes and procedures.

Key elements of this approach include:

- Understanding the capacity and limitations of each component of the healthcare system across metropolitan, regional, rural and remote settings
- Developing clear lines of communication between components of the healthcare system, including primary care, hospital, subacute and community services
- Ensuring appropriate coordination so that people receive prompt access to the best care, regardless of how or where they enter the system.

To achieve these aims, health service organisations implementing this standard may need to:

- Deploy an active implementation plan and feedback mechanisms
- Include agreed protocols and guidelines, decision support tools and other resource material
- Employ a range of incentives and sanctions to influence behaviours, and encourage compliance with policies, protocols, regulations and procedures
- Integrate risk management, governance, and operational processes and procedures, including education, training and orientation.³⁶

1

Quality statement 1 – Identify need for intravenous access

A patient requiring medicines or fluids is assessed to identify the most appropriate route of administration for their clinical needs.

Purpose

To ensure that all alternative routes of administration are considered and excluded before accessing the intravenous route.²⁶

What the quality statement means

■ For patients

If you need to have medicines or fluids, your doctor or another member of your healthcare team (such as a nurse) will assess you to see what the best way to give them to you is. For example, it might be as a tablet or liquid that you can swallow, or as an injection into your muscle or under your skin.

Depending on your clinical condition, the best way to give your medicines or fluids might be directly into your bloodstream through a PIVC – often referred to as an IV or drip. If this is the case, your clinician will discuss this with you so that the right PIVC can be selected. This decision will depend on:

- How long you need to have treatment
- How healthy your veins are and the chances of being able to successfully insert a PIVC
- The treatment you need to have and whether it can damage your veins, especially if given for a long time²⁹⁻³¹
- Your history of having PIVCs inserted and whether there were any problems, such as locating your veins
- Where the PIVC should be inserted, taking into account your preferences
- Whether you already have a device in place for receiving medicines and fluids intravenously.

■ For clinicians

If a patient requires medicines or fluids, assess the patient to identify the most appropriate route of administration for their clinical needs before starting therapy.²⁶ Consider whether oral, intramuscular, subcutaneous, rectal, vaginal or intra-peritoneal routes of administration are appropriate before using the IV route.^{21, 24, 26, 29, 31}

If all other routes of administration have been excluded and IV access is needed, assess whether peripheral or central venous access is appropriate by considering the:

- Patient's age, and clinical and vascular condition^{24, 31}
- Expected duration of therapy^{24, 31}
- Likelihood of repeated or prolonged administration of vesicants or irritants such as vancomycin, flucloxacillin, potassium, or chemotherapy²⁹⁻³¹
- Patient's history of infusion therapy and whether there were complications associated with its use – for example, difficulty locating suitable veins²⁴
- Availability of appropriate insertion sites¹⁶ and the likelihood of first insertion success
- Position of the patient during any planned procedures³¹
- Patient's lifestyle, body image, and preferences for treatment and location of the device^{21, 29-31}
- Availability of resources and their ability to care for the device.²⁴

Insertion of a PIVC may be appropriate for patients at risk of clinical deterioration. Collection of pathology samples is not a valid reason to insert a PIVC; although this often happens in emergency departments, it can lead to unused PIVCs being left in.

Discuss and ascertain that the patient understands the need for IV therapy, especially if multiple device options are available, specific clinical issues need to be raised about the therapy, or the patient has concerns. Document the outcome of the discussion as part of the informed consent process.

■ For health service organisations

Ensure that policies and processes support the consideration of all routes of administration of medications and fluids before therapy is started, and that the IV route is only used if other routes are not suitable.

2

Quality statement 2 – Inform and partner with patients

A patient requiring intravenous access receives information and education about the need and the procedure so they can provide informed consent and help reduce the risk of device-related complications.

Purpose

To ensure that a patient is given information about their need for intravenous access and the procedures associated with inserting, maintaining and removing the device. This is so patients can consider the risks and benefits, and make an informed decision about whether it is right for them. Patients also have the opportunity to ask questions so that they can be engaged in the management of their device and help reduce the risk of device-related complications.

What the quality statement means

■ For patients

Unless you are unconscious or unable to respond, your doctor or another member of your healthcare team will explain why you may need a PIVC before it is inserted.^{24, 29, 31}

Information will be presented in a way that you understand so that you can make an informed decision about whether having a PIVC is right for you and to help prevent complications if you do decide to have one.^{24, 26, 40} Information about your PIVC may include the principles outlined in the WISE-USE creed (Table 1) on page 18.

If your PIVC is inserted in an emergency or while you are unconscious, a carer or relative, if available, will receive this information. As soon as you are able to respond, information will be given to you so that you can help choose your ongoing care.^{29, 31}

Your clinician will ask questions to make sure you understand the information you have been given. You will also have the opportunity to ask questions and tell them about any PIVCs that you have had in the past, whether there were any problems at the time (such as locating your veins) or whether there are any areas of your body where you should not have a PIVC inserted. This is important because it helps your clinician minimise the risks associated with inserting and using a PIVC.

If you decide to have a PIVC inserted, your consent will be recorded.^{24, 31} You can also continue to ask questions and discuss any concerns you have about its use while it is in place, as well as after it has been removed.²⁶ Your healthcare team will also continue to ask questions to make sure your PIVC continues to function properly and is safe for use.

■ For clinicians

Support the patient to have an active role in preventing PIVC-related complications by providing information and education – for example, by using the WISE-USE creed (Table 1) on page 18.

Unless it is an emergency, ensure that the need for IV access is discussed with, and understood by, the patient before the PIVC is inserted.^{24, 29, 31} This is especially important if multiple options are available for delivering therapy intravenously or specific clinical issues to raise.²⁶ Document the outcome of the discussion as part of the informed consent process.^{24, 26, 31} If IV access is required in an emergency, ensure that information is provided to a relative or carer, if available, and to the patient when they can respond, so that care can be delivered according to their preferences.

Ask the patient about previous insertions of PIVCs to identify any concerns, such as difficulty with particular access sites, allergies to tapes or antiseptics, or certain sites where a PIVC should not be inserted.³¹ This will also help to identify whether insertion is likely to be difficult and whether assistance will be required to increase the chances of first insertion success.

Invite the patient to ask questions, and use methods such as teach-back to confirm they understand the information they have received.⁴⁸ Continue to ask the patient if they have any concerns while the PIVC is in place, and for at least 48 hours after it has been removed.⁴⁸ This is important because it helps patients have informed discussions with their healthcare team,²⁶ adhere to their care plan, and participate in activities that may help to reduce the risk of PIVC-related complications.

■ For health service organisations

Ensure that systems are in place for clinicians to provide information and education to patients about their PIVC, to support shared decision making. Also ensure that patients have access to ongoing advice when needed. When consent is being obtained, ensure that policies enable patients to receive enough information to inform their decision about having a PIVC inserted, and are supported to ask questions before the device is inserted and for the time it is in place. This will help the patient to be engaged in their care and to participate more effectively in decision-making about their treatment. This is consistent with the Partnering with Consumers Standard in the NSQHS Standards (2nd ed.)³⁴

Quality statement 2 – Inform and partner with patients

Table 1: Preventing device related complications using the WISE-USE creed:

W	<p>Why is a PIVC needed and how will it be inserted?</p> <p>Patients and clinicians should discuss why IV fluids or medicines, or blood transfusions are needed. Clinicians should explain how the PIVC will be inserted.^{24, 29, 31}</p>
I	<p>Infection risk</p> <p>Patients and clinicians should discuss, and take precautions to help prevent, the risk of infection.^{24, 26, 40} Precautions include maintaining hand hygiene, wearing gloves and using aseptic technique. Clinicians should perform hand hygiene in front of the patient when inserting, accessing or maintaining an IV device.</p> <p>Clinicians should use a suitable antiseptic to clean the insertion site, and the patient should see clinicians scrub the access points of the PIVC with antiseptic before accessing it, to help reduce the risk of contamination.</p>
S	<p>Significant complications other than infection</p> <p>Other complications such as leakage or blockage may occur and cause the PIVC to fail. Clinicians should identify and immediately resolve these issues. Patients can help by knowing what to look out for so they can tell their clinician that a problem might be developing.</p>
E	<p>Effective care and management</p> <p>Clinicians should follow best-practice guidelines and hospital policies to ensure safe care of a PIVC. Clinicians should monitor the insertion site and the condition of the dressing that covers it at least once per shift. If any complications are developing, they should be resolved immediately.</p>
U	<p>Use precautionary measures to help reduce the risk of complications</p> <p>Clinicians should discuss with patients the things that they can do to help reduce the risk of complications. They should ask patients to^{24, 26}:</p> <ul style="list-style-type: none"> ■ Keep the dressing and access site clean and dry at all times ■ Protect it from knocks or being pulled ■ Ensure that the protective dressing stays in place ■ Wear loose clothing so that the PIVC does not get caught ■ Avoid getting the PIVC and dressing wet ■ Maintain hand hygiene ■ Not touch the device.
S	<p>Signs and symptoms to report</p> <p>Involving patients in the care of their PIVC empowers them to voice their concerns, and prompts clinicians to address problems and remove unused PIVCs.^{1, 24, 26} Clinicians should ask patients to report:</p> <ul style="list-style-type: none"> ■ Redness, pain or swelling at the insertion site ■ Leakage from the device ■ If they are feeling hot, cold or shivery ■ If the dressing starts to become soiled or loose ■ Any concerns about whether the PIVC is still needed. <p>Some of these symptoms can happen up to 48 hours (two days) after the PIVC has been removed. Patients should report symptoms to a clinician or, if they occur after leaving the hospital, to a general practitioner.</p>
E	<p>Expected removal</p> <p>Clinicians should tell patients when the PIVC is expected to be removed – for example, when therapy is finished, or if complications develop with the PIVC.</p> <p>If a PIVC is still in place when a patient is being discharged from hospital, clinicians and patients should check if it can be removed.</p>

3

Quality statement 3 – Ensure competency

A clinician inserting and/or maintaining a PIVC is trained and assessed as competent in practices to prevent PIVC-related complications that are relevant to their scope of practice, and according to current, evidence-based recommendations.

Purpose

To minimise trauma to the patient by ensuring that venous access devices are inserted and/or maintained by appropriately skilled members of the healthcare team.

What the quality statement means

■ For patients

If you need to have a PIVC inserted, you can expect that the clinician or other member of your healthcare team who will insert it has undergone relevant training in this area.²⁹⁻³¹ They will also have successfully completed a competency assessment of their practical skills and knowledge to prevent complications associated with using a PIVC.²⁴⁻²⁶ This will be a requirement of the health service organisation.²⁴ You can also expect that the clinicians inserting and looking after your PIVC will keep their skills and knowledge up to date with current guideline recommendations.^{24, 26}

■ For clinicians

Ensure that you complete training and education as specified by the health service organisation, and that you are assessed as competent in using and adhering to the current, evidence-based practices to prevent complications associated with the use of vascular access devices that are relevant to your scope of practice.²⁹⁻³¹ Comply with the health service organisation's policies regarding your scope of practice. Maintain continuing education to ensure that your practical skills and knowledge remain in line with current practice recommendations, and that your competency is maintained and documented according to your health service organisation's policies.^{24, 26}

■ For health service organisations

Use evidence-based guidelines to identify which practical skills and knowledge are required to successfully insert and manage PIVCs. Develop policies according to evidence-based recommendations that outline the competency and assessment required for clinicians. Validate competency using systems such as checklists or forms that focus on measurable assessment of performance, and use a standardised approach to assess competency so that infusion therapy practices are consistent across the organisation.²⁴⁻²⁶ Have a system for assessing competency of clinicians who have also come from other facilities, and that clinicians maintain competency in line with current guideline recommendations.

Ensure that competency is documented according to local policy. Monitor and review competency for feedback to clinicians and ongoing quality improvement.

Indicator for local monitoring

Evidence of a locally approved policy that defines the competency a clinician must demonstrate to insert, monitor and remove PIVCs. The policy should specify how competency is assessed and monitored.

A healthcare setting that has documented evidence of a locally approved policy that is implemented should record 'Yes.' Otherwise, the healthcare setting should record 'No.'

More information about this indicator, and the definitions needed to collect and calculate it can be found online at METeOR.

4

Quality statement 4 – Document decisions and care

A patient with a PIVC will have documentation of the insertion, maintenance and removal of the device, and regular review of the insertion site.

Purpose

To ensure that the plan for a patient's venous access device is clear and that decisions relating to the device and its condition are accurately recorded and accessible to all clinicians involved in the patient's care.

What the quality statement means

■ For patients

When you have a PIVC inserted, the procedure will be discussed with you and recorded so that all the people involved in your care are aware of the decisions you and your clinician made. Information will also be recorded about why the PIVC is needed, the type of PIVC, the date and time it was inserted and by whom, its location, the therapy you are receiving, when the PIVC is expected to be removed and when it is removed. Details about how regularly your PIVC was reviewed and the findings of the reviews will be recorded at the time they occur. If complications develop, the complications and what your clinician did about them will also be recorded.^{24, 26, 28-31}

■ For clinicians

Ensure that the plan for a patient's PIVC is recorded according to local policy in a place that is easily accessible to all clinicians involved in the patient's care (see Box 1).

Box 1: Plan for a PIVC

The following should be recorded for all PIVCs and made accessible to all clinicians^{24, 26, 28-31}:

Insertion:

- Why it is needed
- Type of device (length and gauge)
- Where it is located
- Who inserted it
- Date and time of insertion
- Infection prevention and control methods used

Maintenance:

- Results of daily assessments, including condition of the PIVC and insertion site
- Any patient-reported changes
- Care provided, including by whom and when

Removal:

- Results of daily assessments of the need for the PIVC
- Details about when the device is expected to be removed
- Date and time the PIVC is removed, by whom and the reason for removal
- Observations of the insertion site after removal

■ For health service organisations

Support clinicians to maintain accurate and complete healthcare records about a patient's infusion therapy by ensuring that organisational policies and procedures describe the complete requirements for documentation and how often documentation should occur. At a minimum, documentation should include information about inserting, maintaining and removing PIVCs, and reviewing the insertion site.²⁶

If an electronic system is used for records, ensure that it captures the date and time of insertion, and confirms that the PIVC has been removed before the patient is discharged from hospital. Details about any adverse events and the action taken to address them should also be documented.^{24, 26, 28-31}

Ensure that complete and accurate healthcare records are available at the point of care so that all clinicians involved in the patient's care are aware of the plan for the patient's infusion therapy. Monitor documentation procedures to ensure that they adhere to local policy, and provide feedback to clinicians as part of ongoing quality improvement.

Indicator for local monitoring

Evidence of a locally approved policy that defines the information that must be documented for every PICV inserted, where documentation should occur, and the process to audit adherence to the policy.

A healthcare setting that has documented evidence of a locally approved policy that is implemented should record 'Yes.' Otherwise, the healthcare setting should record 'No.'

More information about this indicator, and the definitions needed to collect and calculate it can be found online at METeOR.

CONSULTA

5

Quality statement 5 – Maximise first insertion success

A health service organisation has a procedure to maximise first insertion success.

Purpose

To reduce multiple failed insertion attempts that increase the risk of device failure and cause patients undue pain and anxiety.

What the quality statement means

■ For patients

Your health service organisation will have procedures in place that describe what your clinician should do if they think they will have difficulty inserting your PIVC on their first try. For example, if your clinician is having trouble locating your veins, they will not attempt to insert the PIVC. They will know who they can refer to, or what techniques or supportive therapies to use to help them.^{29, 31} If they try to insert your PIVC and cannot, it can cause your treatment to be delayed. This is why it is important for your clinician to recognise any problems immediately and to refer to someone or something else if needed.

■ For clinicians

If the clinical presentation of a patient is such that the likelihood of inserting a PIVC successfully on the first attempt is low given your level of experience, check your health service organisation's local policy for guidance on who to refer to for help, and which techniques or adjunct supportive therapies to use to maximise first insertion success. Do not attempt to insert a PIVC if the likelihood of first insertion success is limited.^{17, 37-39} Difficult or unsuccessful insertions can cause bruising, clots, delays in treatment, and undue pain and anxiety for the patient.

Consider the use of adjunctive supportive therapy to assist with insertion – for example, use of local anaesthetics.^{24, 26} For paediatric patients, consider using parental support.

■ For health service organisations

Support clinicians to maximise first insertion success by having policies describing what they should do if insertion is likely to be difficult. These include recommendations to escalate before any attempt to insert a PIVC if the complexity of the insertion is outside the clinician's expertise. Escalation may involve referring to a more experienced clinician to ensure that the expertise available to insert the device matches the complexity of the patient's clinical presentation.

Ensure that policies include information about when to escalate to a more experienced clinician, or when other techniques or technology-assisted devices such as near infra-red or ultra-sound should be used to maximise first insertion success.^{24, 29, 31}

6

Quality statement 6 – Choose the right insertion site and peripheral device

Where peripheral venous access is appropriate, a clinician assesses the patient to identify the most suitable insertion site and PIVC (length and gauge) to meet the patient's clinical needs and their preferences for its location.

Purpose

To ensure that an appropriate PIVC is selected and inserted in a suitable site that minimises the risk of failure and other device-related complications. The patient's clinical condition and preferences for the location of the PIVC are also taken into consideration.

What the quality statement means

■ For patients

Your clinician will assess you to see where your PIVC should be placed, considering^{26, 29–31}:

- Your preferences for its location
- The condition of your veins and skin
- How much you are able to move
- How painful insertion might be
- How likely it is that they will be able to insert it on the first attempt.

If possible, your PIVC will be placed in the arm that you use the least and avoid sites where problems are more likely to develop. If your clinician is having trouble locating a suitable place to insert the PIVC, they will refer to someone else, following the health service organisation's policy, so that your treatment is not delayed.

The exact type of PIVC you need depends on the type of treatment you need and how long it needs to be given. Your clinician will discuss this with you to make sure the right PIVC is used.

■ For clinicians

Identify a suitable insertion site by discussing with the patient their preference for the location of the PIVC, including the recommendation to use veins found in the non-dominant arm.²⁴⁻²⁶ Balance this against the potential risk of infection, mechanical complications and patient comfort.²⁵ Consider the condition of the patient's skin and vasculature at the insertion site, how painful insertion might be for the patient, and whether your expertise to insert the device successfully on the first attempt matches the clinical complexity of the procedure in each individual patient.

Use a site that is most likely to last the duration of the prescribed therapy to maximise dwell time and minimise pain, promote self-care, and prevent accidental removal or blockage. Avoid areas of flexion. Do not use veins in the lower extremities unless this is necessary because of the risk of tissue damage and local site complications in the upper extremities.²⁴⁻²⁶

If the degree of difficulty of inserting the PIVC successfully on your first attempt is low given your level of experience, refer to your health service organisation's policy for ways to maximise first insertion success.²⁵

Choose the right peripheral device by considering the type of therapy the patient needs and its duration. Where possible, use a safety-engineered device.²⁴

■ For health service organisations

Ensure that policies describe the criteria for selection of PIVC insertion sites and devices. Consider use of device selection algorithms to help clinicians select a device that meets the patient's clinical needs, and to identify suitable insertion sites.

Ensure that clinicians are adequately trained, and know how to select the most appropriate PIVC and insertion site for the patient's intended therapy. This includes knowing the:

- Patient's clinical condition
- Product's insertion technique
- Potential for complications
- Appropriateness of the device for the prescribed therapy.

Monitor compliance with escalation policies and provide feedback to clinicians as part of ongoing quality improvement.

7

Quality statement 7 – Insert and secure

A clinician inserting a patient's PIVC implements standard precautions, including hand hygiene and wearing gloves. Aseptic technique is maintained at all times to reduce the risk of infection. The device is secured, and an appropriate sterile, transparent, semi-permeable dressing is used to help protect it from contamination.

Purpose

To emphasise the need for correct infection prevention and control measures regarding PIVC insertion. The device is secured to minimise complications and unintentional loss of IV access, and the PIVC and insertion site can be easily monitored.

What the quality statement means

■ For patients

Your clinician will carry out procedures to help reduce your risk of infection while your PIVC is being inserted. This includes making sure they clean their hands thoroughly immediately before they come into contact with you and your PIVC, and wearing gloves. They will use aseptic technique, and the correct antiseptics and dressings while inserting your PIVC, to help protect it from contamination and protect the surrounding skin from infection.^{25, 29-31, 40}

■ For clinicians

Ensure that you have completed training in standard precautions, including hand hygiene and aseptic technique, to safely insert and secure a PIVC.²⁴⁻²⁶ Insert and secure the PIVC according to local, evidence-based policies and procedures. Implement standard precautions, including hand hygiene and wearing gloves, and adhere to aseptic technique at all times during the insertion.^{26, 29, 31}

Use an appropriate sterile, transparent, semi-permeable dressing to secure the PIVC, and consider patient characteristics such as allergies to tapes or antiseptics.^{29, 31} Secure the dressing, taking care not to contaminate the insertion site.^{24, 26} Ensure that the dressing remains intact for the duration of the insertion to prevent complications such as unintended dislodgement.

■ For health service organisations

Ensure that systems are in place to enable clinicians to complete training in standard precautions, including hand hygiene procedures and aseptic technique.⁴¹ Ensure that policies and procedures outline²⁶:

- What is needed to insert and secure a PIVC, including equipment and dressings
- How to care for the PIVC
- What infection control measures to use.

Ensure that policies include information about how to dispose of the equipment used to insert and maintain the PIVC.



Quality statement 8 – Routine use: inspect, access and flush

A clinician inspects a patient's PIVC and insertion site for signs of complications at least once per shift and when accessing the device, or if the patient raises concerns. Standard precautions including hand hygiene, wearing gloves and aseptic technique is maintained at all times when performing site care and accessing the device. Flushing is performed at intervals according to local policy to minimise risk of device failure.

Purpose

To reduce the risk of PIVC device failure and preserve vessel health by ensuring that PIVCs are regularly reviewed and access is maintained using hand hygiene and aseptic technique. Lines are also flushed at intervals according to local policy to maintain patency and prevent mixing of incompatible medicines or solutions.

What the quality statement means

■ For patients

Your clinician will check your PIVC at least once every shift^{25, 26} and each time they use the device, or if you raise any concerns about it to make sure it continues to function properly.

Specifically, your clinician will check^{24, 26, 29, 31}:

- For pain, swelling or redness of your skin around where your PIVC has been inserted
- Whether an infection might be developing
- If your PIVC is leaking at the insertion site, or if it is blocked
- If it is still firmly in place and not dislodged
- That the dressing covering the insertion site has not become wet or loose.

It is also important that you tell your clinician if you notice any of these symptoms or problems.

Your clinician will provide regular care to prevent complications from developing. If you do have any complications, your clinician will address them immediately.

Each time your PIVC needs to be touched, your clinician will thoroughly clean their hands and take precautions to make sure the PIVC stays clean.^{24, 26, 29, 31} They will also flush your PIVC with fluid from time to time to make sure it does not become blocked.^{24–26, 28–31}

■ For clinicians

Routinely **inspect** the PIVC and insertion site for signs of complications that can lead to device failure. This should happen at least once per shift^{25, 26} and when accessing the device, or if the patient raises any concerns about it. In particular, check^{24, 26, 29, 31}:

- For signs of pain, swelling or redness at the insertion site, by visual inspection through the transparent dressing and gentle palpation through the dressing^{42, 43}
- For signs of localised or systemic infection; if either are confirmed, report as per local policy in an incident management system
- For leakage of fluid from the insertion site, or signs of occlusion or infiltration
- Whether the PIVC remains appropriately dressed and secured.

As part of the review, ask the patient questions to check whether they are tolerating their PIVC, and whether they understand why it is needed and the treatment they are having. Explain the reasons for checking the device, and the signs and symptoms you are looking for that might suggest that problems are developing.

Ask the patient if they have any concerns associated with the use of their PIVC and address these concerns. Check that the patient knows what signs and symptoms to report, including local site complications such as pain, redness, swelling, skin irritation or a temperature. Advise about the importance of telling their clinician if they think complications are developing so that they can be addressed immediately.

Use standard precautions when **accessing** the PIVC or providing site care to help reduce the risk of PIVC-associated infections. Decontaminate access ports before and after access with a solution recommended in current evidence-based or best-practice guidelines, and allow at least 15 seconds to air dry.⁴⁰

Flush the PIVC using a solution recommended in current evidence-based or best-practice guidelines and at intervals according to local policy to maintain line patency, reduce the risk of blockage, and prevent mixing of incompatible medicines or fluids.^{24-26, 29-31}

■ For health service organisations

Ensure that evidence-based policies and procedures are in place outlining what is needed to access, maintain and flush a PIVC. Ensure that equipment is available at the point of care to ensure that hand hygiene and aseptic technique are maintained every time the PIVC is reviewed, accessed or flushed.

Indicator for local monitoring

Evidence of a locally approved policy that defines procedures that must be followed by a clinician to access, inspect, maintain, and flush a PIVC.

The policy should specify the locally approved inspection protocol and equipment requirements to maintain hand hygiene and aseptic technique.

A healthcare setting that has documented evidence of a locally approved policy that is implemented should record 'Yes.' Otherwise, the healthcare setting should record 'No.'

More information about this indicator, and the definitions needed to collect and calculate it can be found online at METeOR.

9

Quality statement 9 – Review ongoing need

A clinician will review and document the ongoing need for a patient's PIVC at least daily or more often if clinically indicated.

Purpose

To ensure that PIVCs are promptly removed when they are no longer needed.⁴⁴

What the quality statement means

■ For patients

Your clinician will review your PIVC at least once a day to make sure that it is still needed. If it is not needed any more, it will be removed.^{24, 25}

■ For clinicians

Assess the ongoing clinical need for a patient's PIVC at least once per day, or more often if clinically indicated. Remove it immediately if it is no longer required, according to local policies.^{24, 25}

■ For health service organisations

Ensure that policies are in place that describe how often the need for ongoing IV access should be reviewed, and that PIVCs are removed immediately when they are no longer needed.²⁵

10

Quality statement 10 – Remove safely and replace if needed

A patient with a PIVC will have it removed when it is no longer needed; at the first sign of malfunctioning or local site complications, including redness, pain or swelling; or at an interval according to a current, locally endorsed evidence-based guideline. A new PIVC will be inserted only if ongoing peripheral vascular access is necessary.

Purpose

To minimise complications by ensuring that PIVCs are removed safely when they are no longer needed or are malfunctioning. Replacement with a new device only occurs when IV therapy needs to continue.

What the quality statement means

■ For patients

Your PIVC will be removed when it is no longer needed.^{24, 26} If you are unsure when it will be removed, ask your clinician.

If your PIVC shows signs of problems developing, such as pain, redness or swelling, and your treatment is not finished yet, your clinician will need to remove your PIVC and replace it with a new one.

If you are going home and your PIVC is still in place, ask your clinician if it can be removed.

■ For clinicians

Remove PIVCs as soon as they are no longer needed – for example, if a patient can tolerate oral therapy – or if complications occur.²⁵ Signs and symptoms that might indicate that the line should be removed include^{24, 26}:

- Pain and tenderness at the insertion site, with or without palpation
- Warmth, redness or swelling
- Leakage of fluid from the insertion site
- Resistance when flushing or absence of blood return.

Document the reason for the removal and the condition of the site. Observe the insertion site for 48 hours after the PIVC is removed for signs of post-infusion pain, redness or swelling. If the patient is discharged from hospital, explain what signs they should look out for after the PIVC is removed and who they should contact if signs of infection develop.

Quality statement 10

Replace with a new PIVC if IV therapy needs to continue. If extended IV therapy is anticipated, consider whether an alternative device, such as a peripherally inserted central catheter or central line, should be inserted (see quality statement 1).

Consider re-siting PIVCs when adherence to aseptic technique, such as insertion during a medical emergency, is uncertain or unknown.⁴⁵

For hospitalised patients, ensure that PIVCs are removed before discharge, unless the PIVC is intended to continue beyond discharge as part of the patient's care plan.

■ For health service organisations

Ensure that systems are in place that state when a PIVC should be removed and replaced, and monitor adherence to guideline recommendations for ongoing quality improvement. The interval chosen should be practical for the clinical context of the organisation, and consider:

- The availability of dedicated services to monitor for PIVC-related complications
- Workforce profiles
- Local bloodstream infection data related to PIVC use
- Incident data reporting
- Availability of appropriately skilled clinicians on all shifts to review and replace PIVCs.

Indicator for local monitoring

Evidence of a locally approved policy that defines when a PIVC should be removed or replaced and the process to audit adherence to the policy.

A healthcare setting that has documented evidence of a locally approved policy that is implemented should record 'Yes.' Otherwise, the healthcare setting should record 'No.'

More information about this indicator, and the definitions needed to collect and calculate it can be found online at METeOR.

Appendix A:

Indicators to support local monitoring

The Commission has developed a set of indicators to support clinicians and local health service organisations in monitoring how well they implement the care described in this clinical care standard. The indicators are a tool to support local quality improvement activities. No benchmarks are set for any indicator.

The process to develop the indicators specified in this document comprised:

- A review of existing local and international indicators
- Prioritisation, review and refinement of the indicators with the Peripheral Venous Access Clinical Care Standard Roundtable and Working Group.

Most of the data underlying these indicators are collected from local sources, mainly through prospective data collection or a retrospective chart review. Where an indicator refers to 'local arrangements', these can include clinical guidelines, policies, protocols, care pathways or any other documentation providing guidance to clinicians on the care of patients to reduce complications associated with inserting and managing PIVCs.

Monitoring the implementation of the clinical care standard will help organisations to meet some of the requirements of the NSQHS Standards. Information about the NSQHS Standards is available at the [NSQHS Standards website](#).

In this document, the indicator titles and hyperlinks to the specifications are included with the relevant quality statement under the heading 'Indicator for local monitoring'. Full specifications of the Peripheral Venous Access Clinical Care Standard indicators can be found in the Metadata Online Registry (METeOR).

METeOR is Australia's web-based repository for national metadata standards for the health, community services and housing assistance sectors. Hosted by the Australian Institute of Health and Welfare, METeOR provides users with online access to a wide range of nationally endorsed data and indicator definitions.

Indicators to support local monitoring of the overall quality of PIVC management

As the goal of this clinical care standard is to promote the judicious use of PIVCs and to reduce complications by highlighting the importance of maintaining and preserving a patient's vessel health, the Commission has a number of programs to support monitoring complications relating to management of PIVC.

■ Hospital-acquired complications

Hospital-acquired complications (HACs) are one of the most common complications affecting hospital patients, and greatly increase morbidity and mortality, as well as the risk of readmission within 12 months.

One of the 16 priority areas measured by the HACs list are healthcare associated infections. A central line and peripheral line associated blood stream infection refers to a blood stream infection caused by the introduction of pathogens into the blood stream via a central or peripheral line. A patient with a diagnosis of a hospital central line and peripheral line associated bloodstream infection is captured through this mechanism.

The Commission has developed a number of resources for clinicians, managers and executives, governing bodies and others, to put in place strategies that reduce the occurrence of HACs. These are available at safetyandquality.gov.au/our-work/indicators/hospital-acquired-complications.

Data on cases of healthcare-associated *Staphylococcus aureus* bacteraemia (SAB) within Australian hospitals are already collected routinely in all states and territories. Such data can help hospitals track their efforts to monitor and reduce rates of healthcare-associated SAB.

More information about healthcare-associated SAB, including implementation guides for surveillance and dataset specifications, are available at:

1. www.safetyandquality.gov.au/our-work/healthcare-associated-infection/national-hai-surveillance-initiative/
2. www.safetyandquality.gov.au/our-work/healthcare-associated-infection/national-hai-surveillance-initiative/surveillance-initiative-publications/

Data on healthcare-associated SAB also form part of the hospital-acquired complications (HACs) list. More information about the HACs list and specifications for these indicators can be found at www.safetyandquality.gov.au/our-work/indicators/hospital-acquired-complications.

Appendix B:

Measuring and monitoring patient experiences

Systematic, routine monitoring of patients' experiences of health care is an important way to ensure that the patient's perspective drives service improvements and patient-centred care. This is the case in all health services.

Patient-reported outcome measures

In Australia, patient-reported outcome measures (PROMs) are an emerging method of assessing the quality of health care. The Commission is leading a national work program to support the consistent and routine use of PROMs to drive quality improvement.

PROMs are standardised, validated questionnaires that patients complete, without any input from health professionals. They are often administered at least twice to an individual patient – at baseline and again after an intervention or at regular intervals during a chronic illness. The information contributed by patients filling out PROMs questionnaires can be used to support and monitor the movement of health systems towards person-centred, value-based health care.

PROMs are being used to evaluate healthcare effectiveness at different levels of the health system, from the individual level to service and system levels. There is growing interest across Australia and internationally in the routine interrogation of patient-reported outcome information for evaluation and decision-making activities at levels of the health system beyond the clinical consultation.

Patient experience measures

This clinical care standard does not include indicators specific to measuring patient experiences. The Commission strongly encourages organisations to use the Australian Hospital Patient Experience Question Set (AHPEQS). AHPEQS is a 12-question generic patient experience survey that has been validated in both day-only and admitted hospital patients across many clinical settings. The [instrument is available for download](#) to both private and public sector health services.

Appendix C:

Integration with the National Safety and Quality Health Service Standards

The Commission developed the NSQHS Standards in collaboration with the Australian Government, states and territories, clinical experts, and consumers. The NSQHS Standards aim to protect the public from harm and improve the quality of health service provision. They provide a quality assurance mechanism that tests whether relevant systems are in place to ensure that expected standards of safety and quality are met.

The second edition of the NSQHS Standards was launched in November 2017, and health service organisations have been assessed against the new standards since January 2019.

In the NSQHS Standards (2nd ed.), the Clinical Governance Standard and the Partnering with Consumers Standard combine to form the clinical governance framework for all health service organisations.

The Clinical Governance Standard aims to ensure that systems are in place within health service organisations to maintain and improve the reliability, safety and quality of health care.

The Partnering with Consumers Standard aims to ensure that consumers are partners in the design, delivery and evaluation of healthcare systems and services, and that patients are given the opportunity to be partners in their own care, to the extent that they choose.

Under the NSQHS Standards (2nd ed.), health service organisations are expected to support clinicians to use the best available evidence, including clinical care standards such as the Peripheral Venous Access Clinical Care Standard (see Action 1.27b of the NSQHS Standards).

Health service organisations are expected to implement the NSQHS Standards in a way that suits the clinical services provided and their associated risks. Other aspects of the NSQHS Standards (2nd ed.) that are relevant to inserting, managing and removing PIVCs include those listed in Table 2.

Table 2: Aspects of the NSQHS Standards relevant to this clinical care standard

Clinical Governance Standard	Partnering with Consumers Standard	Preventing and Controlling Healthcare Associated Infection Standard	Medication Safety Standard	Recognising and Responding to Acute Deterioration Standard
Governance, leadership and culture (1.1 and 1.2)	Informed consent (2.3–2.5)	Integrating clinical governance (3.1)	Integrating clinical governance (4.1)	Responding to deterioration (8.10)
Safety and quality monitoring, including incident reporting systems (1.8 and 1.11)	Sharing decisions and planning care (2.6 and 2.7)	Applying quality improvement systems (3.2)	Applying quality improvement systems (4.2)	
Policies and procedures (1.7)	Information for consumers (2.9) and communication of clinical information (2.10)	Partnering with consumers (3.3)	Partnering with consumers (4.3)	
Healthcare records (1.16)		Surveillance (3.4)	Medicines scope of clinical practice (4.4)	
Credentialing and scope of clinical practice (1.23 and 1.24)		Standard and transmission-based precautions (3.5–3.7)	Information and decision support tools for medicines (4.13)	
Evidence-based care (1.27)		Hand hygiene (3.8)	High-risk medicines (4.15)	
Variation in clinical practice and health outcomes (1.28)		Aseptic technique (3.9)		
		Invasive medical devices (3.10)		

Glossary

Term	Definition
adverse events	Unintended and sometimes harmful occurrences associated with the use of a medicine, vaccine or medical device (collectively known as therapeutic goods). Adverse events include side effects to medicines and vaccines, and problems or incidents involving medical devices. ⁴⁶
antiseptics	Antimicrobial substances that are applied to the skin to reduce the number of micro-organisms. Examples include topical alcohols, chlorhexidine, triclosan and iodine. ³¹
aseptic technique	A technique that aims to prevent microorganisms on hands, surfaces and equipment from being introduced to susceptible sites. Unlike sterile technique, aseptic techniques can be achieved in typical ward and home settings. ³⁴
attempt	An effort at inserting a PIVC at one site. ³¹
assessment	A clinician's evaluation of a disease or condition, based on ⁴⁷ : <ul style="list-style-type: none"> ■ The patient's report of the symptoms and course of the illness or condition ■ Information reported by family members, carers and other members of the healthcare team ■ The clinician's objective findings (including data obtained through tests, physical examination and medical history, and information reported by family members and other members of the healthcare team).
best available evidence	The best systematic research evidence available that is used to support decisions about the care of individual patients.
best practice	The diagnosis, treatment or care provided, based on the best available evidence, which is used to achieve the best possible outcomes for the patient.
bloodstream infection	The presence of live pathogen(s) in the blood, causing an infection. ³¹
carers	A person who provides care and support to a family member or friend who has a disease, disability, mental illness, chronic condition, terminal illness or general frailty. Carers include parents and guardians caring for children. ³⁴
central line	A catheter inserted into a large vein with the tip residing in the superior or inferior vena cava. ²⁴
clinical practice guidelines	Systematically developed statements to assist clinician and consumer decisions about appropriate health care for specific circumstances. ³⁴
clinician	Any trained health professional who provides direct clinical care to patients. Clinicians may be registered or non-registered practitioners working individually or in teams. They include medical practitioners, nurses, midwives, allied health professionals, nurses' assistants, phlebotomists (blood collectors), technicians, scientists, students who provide health care under supervision, Aboriginal health workers and all other people who provide health care services. ^{34, 48}
competency	For the purpose of this clinical care standard, competency refers to a clinician who has completed a relevant medical training program and has inserted a considerable number of PIVCs. Experienced clinicians are not necessarily more senior clinicians; they may be registered nurses, midwives or junior medical officers.

Term	Definition
consumer	A person who has used, or may potentially use, health services, or is a carer for a patient using health services. A healthcare consumer may also act as a consumer representative to provide a consumer perspective, contribute consumer experiences, advocate for the interests of current and potential health service users, and take part in decision-making processes. ³⁴
decontaminate	To use physical or chemical means to remove, inactivate or destroy pathogens on a surface or item so that the surface or item is no longer capable of transmitting pathogens, and is rendered safe for handling, use or disposal
device	For the purposes of this clinical care standard, a peripheral intravenous catheter.
difficult intravenous access	At least two failed attempts to insert an intravenous catheter. ¹⁵
escalate	An action whereby a clinician has not been able to insert a PIVC after two attempts refers the procedure according to local policy
evidence-based (or best-practice) guideline	A set of recommended actions that are developed using the best available evidence and are used to achieve the best outcomes for a patient. They provide clinicians with evidence-informed recommendations that support clinical practice, and guide clinician and patient decisions about appropriate health care in specific clinical practice settings and circumstances. ⁴⁹
flushing	Moving fluids, medications, blood and blood products out of the PIVC into the bloodstream; used to assess and maintain patency and prevent precipitation due to mixing of incompatible solutions and medicines. ²⁴
hand hygiene	A general term referring to any action of hand cleansing. ³⁴
healthcare-associated infection	An infection acquired in a health service organisation facility or as a result of a healthcare intervention which may manifest after the patient is discharged from the organisation. ³⁴
healthcare record	Paper or electronic record of the patient's medical history, treatment notes, observations, correspondence, investigations, test results, photographs, prescription records and medication charts for an episode of care. ³⁴ Includes My Health Record.
health service organisation	A separately constituted health service that is responsible for implementing clinical governance, administration and financial management of a service unit or service units providing health care at the direction of the governing body. A service unit involves a group of clinicians and others working in a systematic way to deliver health care to patients. It can be in any location or setting, including pharmacies, clinics, outpatient facilities, hospitals, patients' homes, community settings, practices and clinicians' rooms. ³⁴
hospital	A licensed facility providing healthcare services to patients for short periods of acute illness, injury or recovery. ⁵⁰
informed consent	A process of communication between a patient and clinician about options for treatment, care processes or potential outcomes. This communication results in the patient's authorisation or agreement to undergo a specific intervention or participate in planned care. The communication should ensure that the patient has an understanding of the care they will receive, all the available options and the expected outcomes, including success rates and side effects for each option. ³⁴

Term	Definition
infection	Invasion and reproduction of pathogens inside the body. This may cause tissue injury and disease. ³⁴
medical practitioner	A medically qualified person whose primary role is the diagnosis and treatment of physical and mental illnesses, disorders and injuries. They include general practitioners, medical specialists, interns and residents.
medical record	Paper or electronic record, including My Health Record. See 'healthcare record'.
medicine	A chemical substance given with the intention of preventing, diagnosing, curing, controlling or alleviating disease, or otherwise improving the physical or mental wellbeing of people. These include prescription, non-prescription, investigational, clinical trial and complementary medicines, regardless of how they are administered. ³⁴
pathogen	A microorganism that can cause disease.
patient	A person who is receiving care in a health service organisation. ³⁴ (Note: for paediatric patients, many of the statements relate to a parent, guardian or carer.)
peripheral intravenous cannula	See peripheral intravenous catheter (PIVC) .
peripheral intravenous catheter (PIVC)	A device that is designed to be inserted into, and remain within, a peripheral vein (excludes peripherally inserted central catheters). Peripheral veins are those in the arms, legs, hands and feet.
point of care	The time and location of an interaction between a patient and a clinician to deliver care. ³⁴
prevention	Care that is provided to reduce the risk of complications.
primary care	The first level of care or entry point to the health care system, such as general practice clinics, community health practice (for example, clinics, outreach or home visiting services), ambulance services, pharmacists, or services for specific populations (for example Aboriginal or refugee health services).
procedure	The set of instructions to make policies and protocols operational, which are specific to an organisation. ³⁴
quality improvement	The combined efforts of the workforce and others – including consumers, patients and their families, researchers, planners and educators – to make changes that will lead to better patient outcomes (health), better system performance (care) and better professional development. Quality improvement activities may be sequential, intermittent or continuous. ³⁴ Numerous models can be used; all share the same focus to reduce errors, and unnecessary morbidity and mortality.
quality of life	The general wellbeing of a person in terms of health, comfort, functional status and happiness.
risk assessment	Assessment, analysis and management of risks. It involves recognising which events may lead to harm in the future, and minimising their likelihood and consequence. ³⁴
risk factor	A characteristic, condition or behaviour that increases the possibility of disease, injury or loss of wellbeing. ⁵¹

Term	Definition
scope of practice	The extent of an individual clinician’s approved clinical practice within a particular organisation, based on the clinician’s skills, knowledge, performance and professional suitability, and the needs and service capability of the organisation. ³⁴
shared decision making	A consultation process in which a clinician and a patient jointly participate in making a health decision, having discussed the options and their benefits and harms, and having considered the patient’s values, preferences, and circumstances. ³⁴
side effects	Unintended effects from a medicine, treatment or device. ⁵²
standard precautions	Work practices that provide a first-line approach to infection prevention and control, and are used for the care and treatment of all patients. ³⁴
system	The resources, policies, processes and procedures that are organised, integrated, regulated and administered to provide health care. Systems enable the objectives of healthcare standards to be accomplished by addressing risk management, governance, operational processes and procedures, implementation and training, and by influencing behaviour change to encourage compliance. ³⁴
teach-back	A method that clinicians can use to confirm they have explained to patients what they need to know about their condition in a manner that the patient understands. The clinician asks the patient to state in their own words the key points of the discussion. The cycle continues until the clinician is certain the key messages have been delivered and understood. ⁴⁸
veins	Vessels that return blood from the tissues to the lungs.

CONSULTANT

References

- Cooke M, Ullman AJ, Ray-Barruel G, Wallis M, Corley A, Rickard CM. Not “just” an intravenous line: Consumer perspectives on peripheral intravenous cannulation (PIVC). An international cross-sectional survey of 25 countries. *PLoS One*. 2018;13(2):e0193436.
- Helm RE, Klausner JD, Klemperer JD, Flint LM, Huang E. Accepted but unacceptable: peripheral IV catheter failure. *J Infus Nurs*. 2015;38(3):189–203. Epub 2015/04/15.
- Marsh N, Webster J, Larson E, Cooke M, Mihala G, Rickard CM. Observational study of peripheral intravenous catheter outcomes in adult hospitalized patients: a multivariable analysis of peripheral intravenous catheter failure. *J Hosp Med*. 2018;13(2):83–9. Epub 2017/10/27.
- Zingg W, Pittet D. Peripheral venous catheters: an under-evaluated problem. *Int J Antimicrob Agents*. 2009;34 Suppl 4:S38–42. Epub 2009/12/16.
- Limm EI, Fang X, Dendle C, Stuart RL, Egerton Warburton D. Half of all peripheral intravenous lines in an Australian tertiary emergency department are unused: pain with no gain? *Ann Emerg Med*. 2013;62(5):521–5. Epub 2013/04/30.
- Alexandrou E, Ray-Barruel G, Carr PJ, Frost SA, Inwood S, Higgins N, et al. Use of Short Peripheral Intravenous Catheters: Characteristics, Management, and Outcomes Worldwide. *J Hosp Med*. 2018;13(5). Epub 2018/05/31.
- Wallis MC, McGrail M, Webster J, Marsh N, Gowardman J, Playford EG, et al. Risk factors for peripheral intravenous catheter failure: a multivariate analysis of data from a randomized controlled trial. *Infect Control Hosp Epidemiol*. 2014;35(1):63–8. Epub 2013/12/18.
- Hadaway L. Short peripheral intravenous catheters and infections. *J Infus Nurs*. 2012;35(4):230–40. Epub 2012/07/05.
- Jacobson AF, Winslow EH. Variables influencing intravenous catheter insertion difficulty and failure: an analysis of 339 intravenous catheter insertions. *Heart Lung*. 2005;34(5):345–59. Epub 2005/09/15.
- Malyon L, Ullman AJ, Phillips N, Young J, Kleidon T, Murfield J, et al. Peripheral intravenous catheter duration and failure in paediatric acute care: A prospective cohort study. *Emerg Med Australas*. 2014;26(6):602–8. Epub 2014/10/28.
- Australian Institute of Health and Welfare. Admitted Patient Care 2016–2017: Australian Hospital Statistics [internet]. Canberra: Commonwealth of Australia; 2018 [cited May 2019]; Available from: www.aihw.gov.au/reports/hospitals/ahs-2016-17-admitted-patient-care/contents/table-of-contents.
- Alexandrou E, Ray-Barruel G, Carr PJ, Frost S, Inwood S, Higgins N, et al. International prevalence of the use of peripheral intravenous catheters. *J Hosp Med*. 2015;10(8):530–3. Epub 2015/06/05.
- Rickard CM, Webster J, Wallis MC, Marsh N, McGrail MR, French V, et al. Routine versus clinically indicated replacement of peripheral intravenous catheters: a randomised controlled equivalence trial. *Lancet*. 2012;380(9847):1066–74. Epub 2012/09/25.
- Webster J, Clarke S, Paterson D, Hutton A, van Dyk S, Gale C, et al. Routine care of peripheral intravenous catheters versus clinically indicated replacement: randomised controlled trial. *BMJ*. 2008;337:a339. Epub 2008/07/11.
- Fields JM, Piela NE, Au AK, Ku BS. Risk factors associated with difficult venous access in adult ED patients. *Am J Emerg Med*. 2014;32(10):1179–82. Epub 2014/08/31.
- Sou V, McManus C, Mifflin N, Frost SA, Ale J, Alexandrou E. A clinical pathway for the management of difficult venous access. *BMC Nurs*. 2017;16:64. Epub 2017/11/28.
- Carr PJ, Higgins NS, Cooke ML, Rippey J, Rickard CM. Tools, clinical prediction rules, and algorithms for the insertion of peripheral intravenous catheters in adult hospitalized patients: a systematic scoping review of literature. *J Hosp Med*. 2017;12(10). Epub 2017/10/11.
- Armenteros-Yeguas V, Garate-Echenique L, Tomas-Lopez MA, Cristobal-Dominguez E, Moreno-de Gusmao B, Miranda-Serrano E, et al. Prevalence of difficult venous access and associated risk factors in highly complex hospitalised patients. *J Clin Nurs*. 2017;26(23–24):4267–75. Epub 2017/02/07.
- Rodriguez-Calero MA, Fernandez-Fernandez I, Molero-Ballester LJ, Matamalas-Massanet C, Moreno-Mejias L, de Pedro-Gomez JE, et al. Risk factors for difficult peripheral venous cannulation in hospitalised patients. Protocol for a multicentre case-control study in 48 units of eight public hospitals in Spain. *BMJ Open*. 2018;8(2):e020420.
- Tuffaha HW, Rickard CM, Webster J, Marsh N, Gordon L, Wallis M, et al. Cost-effectiveness analysis of clinically indicated versus routine replacement of peripheral intravenous catheters. *Applied health economics and health policy*. 2014;12(1):51–8. Epub 2014/01/11.
- National Health & Medical Research Council. Australian guidelines for the prevention and control of infection in healthcare. Canberra: Australian Government; 2010; Available from: www.nhmrc.gov.au/about-us/publications/australian-guidelines-prevention-and-control-infection-healthcare-2019 (accessed Jun 2019).

References

22. O'Grady NP, Alexander M, Burns LA, Dellinger EP, Garland J, Heard SO, et al. Guidelines for the prevention of intravascular catheter-related infections. *Am J Infect Control*. 2011;39(4 Suppl 1):S1–34. Epub 2011/04/29.
23. Gorski LA. The 2016 infusion therapy standards of practice. *Home Healthc Now*. 2017;35(1):10–8. Epub 2016/12/07.
24. Infusion Nurses Society. Infusion therapy standards of practice. *J Infus Nurs*. 2016;39(1S):S1–S159.
25. Loveday HP, Wilson JA, Pratt RJ, Golsorkhi M, Tingle A, Bak A, et al. epic3: national evidence-based guidelines for preventing healthcare-associated infections in NHS hospitals in England. *J Hosp Infect*. 2014;86 Suppl 1:S1–70. Epub 2013/12/18.
26. Royal College of Nursing. Standards for infusion therapy. London: RCN; 2016 [cited Jan 2019]; Available from: www.rcn.org.uk/professional-development/publications/pub-005704 (accessed Jan 2018).
27. Queensland Health. Peripheral intravenous catheter (PIVC) Guideline. Brisbane: Queensland Government; 2015; Available from: www.health.qld.gov.au/_data/assets/pdf_file/0025/444490/icare-pivc-guideline.pdf (accessed Nov 2018).
28. Queensland Health. Intravascular device management (I-Care) [internet]. Brisbane: Queensland Government; 2015 [cited Nov 2018]; Available from: www.health.qld.gov.au/clinical-practice/guidelines-procedures/diseases-infection/infection-prevention/intravascular-device-management (accessed Nov 2018).
29. Government of Western Australia. Insertion and management of peripheral intravenous cannulae in Western Australian healthcare facilities policy. Perth: Department of Health; 2017 [cited Dec 2018]; Available from: ww2.health.wa.gov.au/About-us/Policy-Frameworks (accessed Dec 2018).
30. ACT Health. Canberra hospital and health services procedure peripheral intravenous cannula, adults and children (not neonates). Canberra: ACT Government; 2015 [cited Dec 2018]; Available from: www.health.act.gov.au/sites/default/files/2018-09/Peripheral%20Intravenous%20Cannula%2C%20Adults%20and%20Children%20%28Not%20neonates%29.docx (accessed Dec 2018).
31. NSW Ministry of Health. Peripheral intravenous cannula (PIVC) insertion and post insertion care in adult patients. Sydney: NSW Health; 2013; Available from: www1.health.nsw.gov.au/pds/ActivePDSDocuments/GL2013_013.pdf (accessed Nov 2018).
32. Australian Commission on Safety and Quality in Health Care. Patient-centred care: Improving quality and safety through partnerships with patients and consumers. A discussion paper. Sydney: ACSQHC, 2011.
33. Australian Commission on Safety and Quality in Health Care. Windows into safety and quality. Sydney: ACSQHC, 2011.
34. Australian Commission on Safety and Quality in Health Care. National Safety and Quality Health Service Standards. 2nd ed. Sydney 2017.
35. Mitchell GK, Tieman JJ, Shelby-James TM. Multi-disciplinary care planning and teamwork in primary care. *Med J Aust*. 188(8 Suppl):S61-4.
36. Australian Commission on Safety and Quality in Health Care. National Safety and Quality Health Service Standards. Sydney: ACSQHC, 2011.
37. Carr PJ, Rippey JC, Budgeon CA, Cooke ML, Higgins N, Rickard CM. Insertion of peripheral intravenous cannulae in the Emergency Department: factors associated with first-time insertion success. *The journal of vascular access*. 2016;17(2):182-90. Epub 2015/12/15.
38. Carr PJ, Rippey JCR, Cooke ML, Trevenen ML, Higgins NS, Foale AS, et al. Factors associated with peripheral intravenous cannulation first-time insertion success in the emergency department. A multicentre prospective cohort analysis of patient, clinician and product characteristics. *BMJ Open*. 2019;9(4):e022278.
39. Rippey JC, Carr PJ, Cooke M, Higgins N, Rickard CM. Predicting and preventing peripheral intravenous cannula insertion failure in the emergency department: Clinician 'gestalt' wins again. *Emerg Med Australas*. 2016;28(6):658-65. Epub 2016/11/20.
40. National Institute for Health and Care Excellence. Infection prevention and control. QS61. London: NICE; 2014 [cited Jan 2019]; Available from: www.nice.org.uk/guidance/qs61/resources/infection-prevention-and-control-pdf-2098782603205 (accessed Jan 2019).
41. Austin Health. Hand Hygiene Australia [internet]. Melbourne [cited Jan 2019].
42. Ray-Barruel G, Polit DF, Murfield JE, Rickard CM. Infusion phlebitis assessment measures: a systematic review. *J Eval Clin Pract*. 2014;20(2):191–202. Epub 2014/01/10.
43. Marsh N, Mihala G, Ray-Barruel G, Webster J, Wallis MC, Rickard CM. Inter-rater agreement on PIVC-associated phlebitis signs, symptoms and scales. *J Eval Clin Pract*. 2015;21(5):893-9. Epub 2015/07/18.
44. Health Protection Scotland. Infection control: Preventing infections when inserting and maintaining a peripheral vascular catheter (PVC) [internet]. Scotland: NHS National Services Scotland; 2014 [cited Nov 2018]; Available from: www.hps.scot.nhs.uk/haic/ic/resourcedetail.aspx?id=660.

45. HSE Health Protection Surveillance Centre. Prevention of intravascular catheter related infection in Ireland. Update of 2009 National Guidelines. September 2014. SARI Prevention of Intravascular Catheter-related Infection Sub-Committee; December 2009, Updated February 2010.
46. Therapeutic Goods Administration. Overview of adverse events. Department of Health; [cited July 2017]; Available from: www.tga.gov.au/reporting-adverse-events.
47. The Free Dictionary. Assessment [internet]. Farlex; 2016 [cited Mar 2016]; Available from: <http://medical-dictionary.thefreedictionary.com/assessment>.
48. Australian Commission on Safety and Quality in Health Care. Health literacy: Taking action to improve safety and quality. Sydney: ACSQHC; 2014 [cited January 2018]; Available from: www.safetyandquality.gov.au/publications/health-literacy-taking-action-to-improve-safety-and-quality/.
49. Australian Nursing and Midwifery Federation (SA Branch). Best practice guidelines. Adelaide: ANMF; 2016.
50. Australian Commission on Safety and Quality in Health Care. National consensus statement: essential elements for recognising and responding to clinical deterioration. Sydney: ACSQHC, 2010.
51. The Free Dictionary. Risk factor [internet]. Farlex; 2016 [cited Nov 2016]; Available from: www.thefreedictionary.com/risk+factor.
52. NPS Medicinewise. Glossary-side effects. Sydney: NPS MedicineWise; 2016 [cited Mar 2016]; Available from: www.nps.org.au/glossary/side-effects.

Acknowledgements

Many individuals and organisations have freely given their time and expertise in the development of this document. In particular, the Commission wishes to thank the Peripheral Venous Access Clinical Care Standard Roundtable and other key experts who have given their time and advice. The involvement and willingness of all concerned to share their experience and expertise is greatly appreciated:

- Dr Evan Alexandrou
- A/Prof Anthony Allworth
- Dr Stephane Bouchoucha
- A/Prof Richard Brightwell
- Ms Samantha Butenko
- Dr Daryl Cheng
- Ms Kerrie Curtis
- Ms Kathy Dempsey
- Ms Nicole Gavin
- A/Prof Michael Guinness
- Mr Liam Harte
- Dr Abby Harwood
- Ms Barbara Hewer
- Ms Lucy Hughson
- Dr Louise Hobbs
- Ms Susan Jain
- Prof Samantha Keogh
- Ms Dhanya Kachappilly Louis
- Dr Adrian Lim
- Ms Jen Makin
- Ms Nicole Marsh
- Ms Rebecca McCann
- Dr Mary McCaskill
- Ms Cheree Morgan
- Ms Joanne Muller
- Dr Laura Raiti
- Prof Claire Rickard
- Dr Simon Singer
- Ms Susi Tegen
- Dr Murray Selig
- Dr Jennifer Stevens
- A/Prof Archana Sud
- Ms Kerry Taliaferro



CONSULTATION DRAFT

**AUSTRALIAN COMMISSION
ON SAFETY AND QUALITY IN HEALTH CARE**

Level 5, 255 Elizabeth Street, Sydney NSW 2000
GPO Box 5480, Sydney NSW 2001

PHONE: (02) 9126 3600

FAX: (02) 9126 3613

mail@safetyandquality.gov.au

safetyandquality.gov.au