Preventing Pressure Ulcers
Driver Diagram & Change Package

www.healthcareimprovementscotland.org

www.tissueviabilityonline.com

Adapted from the Transforming Care Programme 1000 lives plus
NHS Wales

Background

The National Tissue Viability Programme in Scotland is sponsored by the Chief Nursing Office Directorate, and is led and hosted by Healthcare Improvement Scotland. The first phase of the programme developed a series of tools mainly in relation to pressure ulcer recognition and prevalence, which were to be underpinned by a quality improvement focus. As part of a joint programme, NHS Education for Scotland developed an education pack for care staff. The resulting tools and a link to the education pack are available at www.healthcareimprovementscotland.org. In the course of the second and third phase of the programme, the project team was challenged to shift the focus away from pressure ulcer detection and mitigation to focus instead on prevention.

During the programme, the team has worked closely with a range of clinicians, academics and quality improvement leads across the UK, and beyond, to learn about effective pressure ulcer prevention. As a result of this shared learning, the programme has:

- Provided a framework to empower front line staff to seek out new ways to continuously improve how they provide care,
- Begun to build a collaborative between Tissue Viability Nurse Specialists and front line care staff,
- Facilitated an approach which allows for high impact, well defined tools to be tested, adapted and adopted,
- Made the process of care visible to all, thus increasing the reliable application of evidence based care which impacts on pressure ulcer reduction,
- Clearly linked the process of care to improved care outcomes,
- Introduced the concept of Intentional Rounding as a high level care process for all individuals, regardless of pressure ulcer risk. (For more information on Intentional Rounding see www.healthcareimprovementscotland.org).

Purpose of this Change Package

This change package has been adapted from the 1000 lives campaign in Wales and tested in Scotland through the Tissue Viability Programme. The change package identifies and establishes recommended interventions which have been proven to collectively bring about improvements in pressure ulcer prevention. This package illustrates what interventions care areas should consider in order to start to improve pressure area care as part of a whole system of care.

There are three distinct parts to this change package; Driver diagram, Change concepts and ideas, and Measures.A driver diagram is a way of describing the elements that need to be in place to achieve an improvement aim. It helps to focus on the cause and effect relationships that can exist in complex situations, such as pressure ulcer prevention. Driver

diagrams identify what will help people to 'do the right thing.' The primary drivers are high level ideas that if implemented, will achieve the improvement aim. The best way of implementing primary drivers is to identify a series of actions or projects (otherwise known as secondary drivers) which, when undertaken, will contribute to achieving the primary drivers and in turn, the aim.

A change concept is a general notion or an approach to improving an aspect of care. A change idea is an action which is expressed as a specific example of how a particular change concept can be applied in real life.

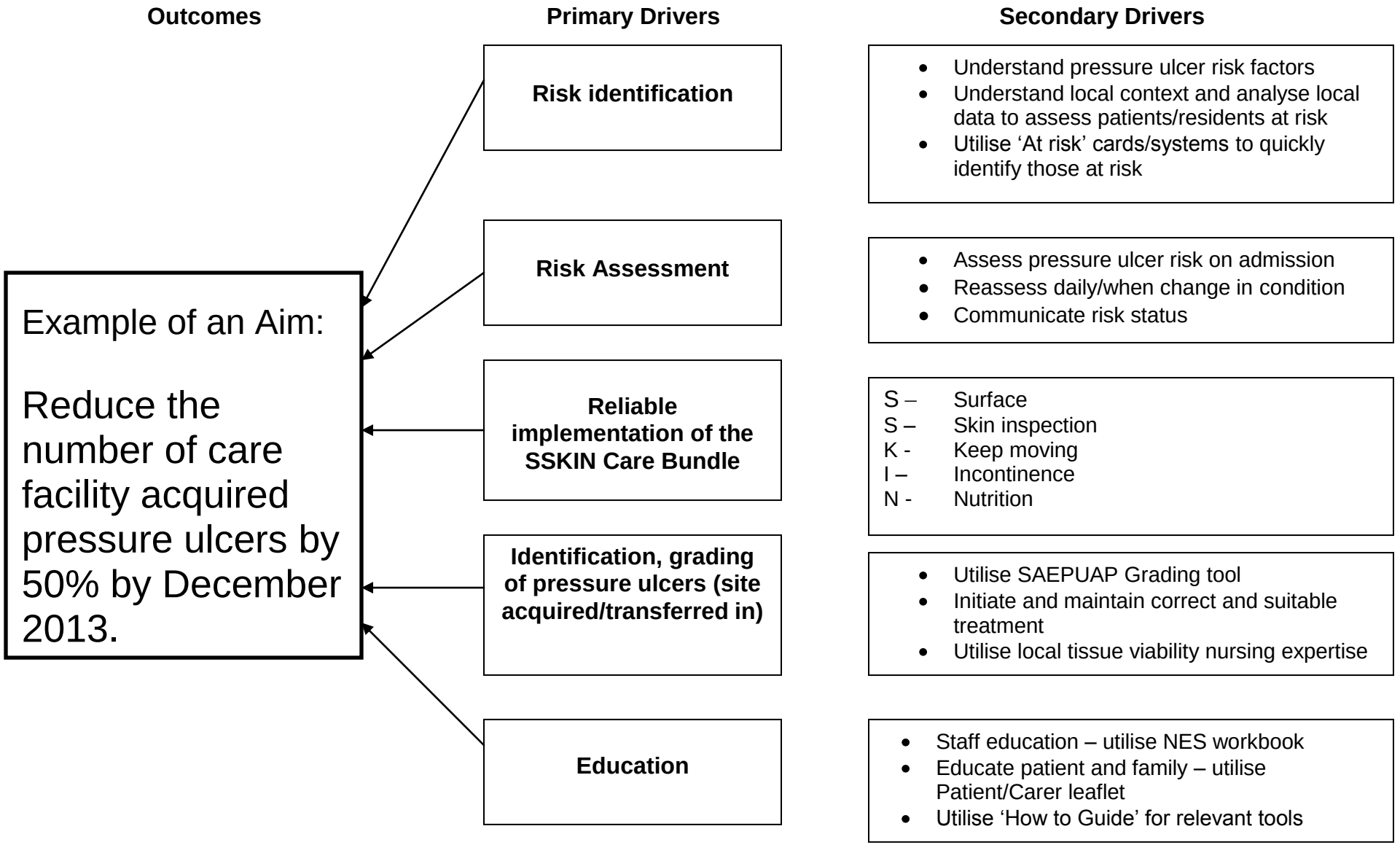
Also included in this package is a series of different measures; process, outcome and balancing measures. Measures are important as we need to know if the changes we have tested/introduced have actually led to an improvement. The data you collect needs to be just good enough to answer the question "How do I know that the changes I am making are an improvement?" In order to answer this you will need a defined process (such as compliance with all elements of a care bundle) which is evidently linked to an outcome (such as a reduction in the numbers of pressure ulcers). Both process and outcome data which are linked are essential to evaluate the effectiveness of change. The data you collect in real time can be used to tell the improvement story and build the case and/or argument to change practices in order to improve outcomes. Remember that data collection and its interpretation does not need to be complicated. A simple check on the process(s) with the use of annotated 'run chart' over time will do. Data should be displayed for those involved in the improvement effort to see, and it should be easy to understand. Balancing measures on the other hand are designed to identify the impact (positive or negative) of your improvement work and interventions on other parts of the care system.

How to use this Change Package

Users of this change package are encouraged to review the change package to determine:

- What practices might already be in place in their care area(s) and decide if further work is needed.
- Identify and prioritise the first few changes that a team will undertake, and determine if these changes lead to an improvement (remember that improvement takes time).
- What other changes will be undertaken at a later date by the team.
- We advise that the Model for Improvement is used to guide your improvement work. This model is a simple but powerful tool for accelerating improvement (see Appendix 1).

Driver Diagram



Secondary Drivers	Key Change Concepts and Change Ideas for PDSA Testing
• Understand pressure ulcer risk factors • Understand local context and analyse local data to assess patient/residents at risk • Utilise 'at risk' cards/systems to quickly identify those at risk	• Educate staff, patients/residents on pressure ulcer factors. • Utilise patient/resident and carer information leaflet. • Engage with the multidisciplinary team and develop a shared vision. • Set a clear local aim for reducing pressure ulcers. • Engage with staff to learn about the barriers to risk assessment being done within 6 hours from admission/transfer. • Work with staff to develop a system where at risk patients/residents can be identified easily. • Utilise Safety Briefings/SBAR approach (Situation, Background, Assessment, and Recommendation). • Documentation - SSKIN Care Bundle.
• Assess pressure ulcer risk on admission/ transfer • Reassess risk daily and when change in condition	• Monitor compliance with on admission/transfer pressure ulcer risk assessment and increase aim for >95% compliance by developing a monitoring/feedback and learning loop to improve this process. • Build reliable risk assessment into care bundle process (first step – see above). • Visually communicate – use visual cues above the beds/doors of at risk patients/residents to alert staff to patients/residents risk of acquiring a pressure ulcer. • Verbally communicate - incorporate patients/residents at risk into safety briefings/handover processes. • Monitor compliance with daily re-assessment of risk and increase compliance to >95% by developing a monitoring/feedback and learning loop. Please note patients/residents may need to be reassessed when there is a change in their condition.

Secondary Drivers	Key Change Concepts and Change Ideas for PDSA Testing
Reliably implement all elements of the SSKIN Care Bundle S Surface S Skin inspection K Keep moving I Incontinence N Nutrition	**All elements of the care bundle must be evident and effectively carried out or it will not be counted as compliant.** **Surface** – • Ensure patient/resident is on the correct surface (mattress/ cushion). • Build reminder checks into routine care process and daily re-assessment. **Skin Inspection** – • Inspect skin/pressure areas regularly to identify quickly pressure damage. **Keep Moving** – • Ensure patients/residents are encouraged/assisted to move positions regularly dependent on individuals' needs. • Minimise pressure damage by ensuring manual handling equipment is available when turning patients/residents, kept by the bedside of patients/residents who have been assessed as at risk. • Introduce systems acceptable to all so that ward/care home team can reposition at risk patients/residents or encourage all patients/residents to move themselves at regular intervals. Introduce intentional rounding to prompt all patients/residents to change position. • Introduce, in partnership with the patient/resident, a daily goals sheet which will ensure that both the patient/resident and the wider multidisciplinary team are aware of how long the patient/resident should be sitting out of bed, when anti embolic stockings should be removed, if they should have repose boots (a pressure relieving device for heels) insitu etc. **Incontinence (increased moisture)** – • Manage the moisture of patients/residents whose skin is exposed to increased moisture

Secondary Drivers	Key Change Concepts and Change Ideas for PDSA Testing
	(wound drainage/continence issues/ leaks/discharge/excessive sweating). • Ensure skin is kept clean and dry (but note that excessively dry skin presents an increased risk so use barrier creams appropriately). • Consider introducing a continence assessment tool which will inform the care plan/ pathway. • Move supplies nearer to the bedside to enable prompt cleansing when required. Include barrier cream, cleansing wipes, incopads etc. • Use prompts to remind staff to ask at regular intervals if the patient/resident would like to go to the toilet (check catheter patent/draining etc). Introduce intentional rounding prompts to offer the opportunity of going to the toilet. • Where appropriate, introduce written guidance for staff for the appropriate use of faecal management systems to protect skin. **Nutrition –** • Introduce protected mealtimes to ensure patients/residents are not interrupted when eating. • Introduce prompts that alert nursing and catering staff to patients/residents who are at risk of malnutrition (and/or dehydration) and who may need support at mealtimes, e.g. 'red tray' system. • Use water jugs with prompts e.g. coloured lids to alert staff to encourage fluids and to refill. • Consider use of food charts to monitor intake. Alternatively record fluid input/output on SSKIN Care Bundle communication tool. • Undertake a nutritional risk assessment to identify all patients/residents at risk of malnutrition and refer to dietician as appropriate. • Introduce intentional rounding prompts such as 'would you like a drink?', 'Can you reach your drink?', or 'soft drink cocktail hour' where juices are served to encourage patients/residents to keep hydrated. • Ensure patients/residents on fortified supplements receive their drinks.

Secondary Drivers	Key Change Concepts and Change Ideas for PDSA Testing
• Utilise national grading tool • Initiate and maintain correct and suitable treatment • Utilise local tissue viability nursing expertise	• Agree use of national pressure ulcer grading tool (Scottish Adapted EPUAP tool). • Make sure staff know about tool to aid with pressure ulcer recognition and assist with their education. • Utilise the SSKIN Care Bundle approach. • Work in partnership with patients/residents, their family and multidisciplinary team members. • Know how to contact your local tissue viability nurse/other specialist if required.
• Staff education - utilise NES workbook • Educate patient and family – utilize Patient/Carer leaflet • Utilise 'How to Guide' for relevant tools	• Utilise formal and informal learning opportunities to educate staff about pressure ulcer risk. Direct staff to the NHS Education for Scotland (NES) workbook (can be accessed through www.healthcareimprovementscotland.org or www.tissueviabilityonline.com). • Use patient/resident stories to educate, motivate and inspire staff. • Provide patients/residents and relatives with information on the risks of pressure ulcers on admission/transfer or when there is a change in their condition that puts them at risk. • Educate patients/residents and families as to how they can help to minimize pressure ulcer risk whilst in hospital/care home, at home where relevant (e.g. the SSKIN Care Bundle). • Work with patients/residents and families as co-partners in their care. • Use the guides for various tools to educate staff on how they could be used.

Measurement Plan

Measure Name	Compliance with pressure ulcer risk assessment/skin examination within 6 hours of admission/transfer.
Measure Type	Process (Percentage).
Measure Description	% Compliance with pressure ulcer risk assessment/skin examination on admission/transfer.
Numerator	Number of patients/residents who had a pressure ulcer risk assessment/skin examination within 6 hours of admission/transfer.
Denominator	Number of patients/residents admitted/transferred.
Sampling Plan	To collect this measure randomly sample twenty patient/residents records on a monthly basis (could be broken down to looking at five records a week) and identify from these records (*Denominator*), how many patients/residents had a pressure ulcer risk assessment/skin examination completed within 6 hours of admission/transfer (*Numerator*). Calculate: N/D x 100 = %.
Reporting Frequency	Monthly.
Numeric Goal	>95% compliance with pressure ulcer risk assessment/skin examination within 6 hours of admission/transfer.

Measure Name	Compliance with SSKIN Care Bundle.
Measure Type	Process (Percentage).
Measure Description	This is a composite measure (All or Nothing) requiring a simple Yes/No outcome. If the individual patient/resident did not have ALL elements of the bundle completed/in place then they are considered non compliant with the SSKIN Care Bundle (e.g. 4 out of 5 is not good enough).
Numerator	Number of patients/residents who had all five elements of the SSKIN Care Bundle completed.
Denominator	Number of patients/residents on the SSKIN Care Bundle.
Sampling Plan	To collect this measure randomly sample the care bundle sheets of twenty patients/residents on a monthly basis (could be broken down to reviewing five sheets on a given day once a week) and identify from these sheets (*Denominator*), how many individuals had all five elements of the bundle completed (*Numerator*) at each opportunity for that day. For example, from your sample of 5 patients, 4 patients have all 5 bundle elements completed, then 4/5 (80%) is the compliance with the SSKIN Care Bundle. If all 5 patients had all 5 elements completed, compliance would be 100%. If all 5 were missing even a single item, compliance would be 0%. If a single bundle element is contraindicated for a particular patient/resident and this is documented appropriately, count it as appropriately performed for the purposes of measuring compliance. Following the review, staff are made aware of the elements that were not completed (if any) and supported to improve on this. Consider using the compliance measurement tool to help staff understand exactly which elements of the SSKIN Care Bundle are not being delivered reliably so that these elements are the focus of improvement. (the compliance measurement tool can be accessed through www.healthcareimprovementscotland.org or www.tissueviabilityonline.com). Note - At the beginning of your improvement journey it may be helpful to 'chunk' the bundle into its elements, so that each element of the bundle can be assessed individually for compliance, as well as overall compliance (YES/NO). This will give staff a better understanding of exactly which elements of the bundle are not being reliably delivered at each opportunity and can be the focus of intense improvement efforts. This also gives credit for the elements which are complied with when the overall bundle compliance may be still less than perfect.

	You are encouraged to sample over a range of conditions (ie weekends, week days, different shifts etc) Calculate: N/D x 100 = %.
Reporting Frequency	Monthly.
Numeric Goal	>95% with SSKIN Care Bundle.

Measure Name	Number of Pressure Ulcers*
Measure Type	Outcome – Number of pressure ulcers (Count).
Measure Description	A cumulative count of the number of pressure ulcers acquired on a ward/care home.
Numerator	Number of pressure ulcers acquired on a ward/care home.
Denominator	Not applicable.
Sampling Plan	Every time an individual acquires a pressure ulcer on a ward/care home (i.e. a new case is identified) record accordingly on the Pressure Ulcer Safety Cross (i.e. red day together with the number of pressure ulcers found). A red day on the Safety Cross should not be viewed negatively as it means the ward/care home are aware and are checking skin regularly.
Reporting Frequency	Monthly.
Numeric goal	For example - To reduce the incidence of hospital acquired pressure ulcers by ?? % on ward X by month year.

* Days between measures are traditionally used for measuring rare events. However we recognize from the work in Wales that the 'days between' measure served as a useful motivator for staff and also as an awareness tool so that they could 'see' the extent of the problem on their ward/care home. We recommend that the count/number of pressure ulcers is used as an outcome if pressure ulcers are a frequent occurrence in your ward/care home. When pressure ulcers start to become rare events, the 'days between pressure ulcers' can be considered as an outcome measure. The Pressure Ulcer Safety Cross can be used to motivate and raise awareness as a parallel process for a given month.

* In the course of our work we have learnt that it is not uncommon for a care area to discover more pressure ulcers than they thought they had when the SSKIN Care Bundle is introduced. This is because the process of care is clearly evident to all involved in the care of an individual. By implementing the SSKIN Care Bundle effectively (i.e. achieving 95% compliance with the SSKIN Care Bundle), we predict that there will be fewer higher grades of pressure ulcers (i.e. Grades 3 and 4) as every individual's skin is being checked more regularly, and breaks in the skin will be picked up sooner by staff or the patient/resident themselves.

Measure Name	Days Between Pressure Ulcers*
Measure Type	Outcome - Days between.
Measure Description	This measure is a cumulative count of the number of days that have gone by since a pressure ulcer which developed on a ward/care home was last reported. Every time a new case (pressure ulcer) occurs the count is started over again.
Numerator	Not applicable.
Denominator	Not applicable.
Reporting frequency	Monthly.
Sampling Plan	Each time an individual acquires a pressure ulcer on the ward/care home mark the Pressure Ulcer Safety Cross for the appropriate day in red. If more than one individual acquires a pressure ulcer on a given day simply record as many times as there are events. For each day where there has been no new reported pressure ulcers acquired on the ward/care home, mark the date on the Pressure Ulcer Safety Cross in green. It is a good idea to let staff and patients/residents know on a daily basis how many days have gone by without a new pressure ulcer developing on your ward/care home. You can do this by simply stating in a public area '*It has been ___ days since a pressure ulcer developed on this ward/care home'*. This information would be updated on a daily basis. When the calendar month has been completed, store the cross in a file for discussion with team.

Measure Name	Pressure Ulcer Incidence per 1000 Occupied Bed Days*
Measure Type	Outcome – Rate.
Measure Description	The number of pressure ulcers developed on a ward/care home per 1000 occupied bed days.
Numerator	The total number of pressure ulcers developed on a ward/care home during the month.
Denominator	The total number of days that patients/residents had a pressure ulcer(s) for the month.
Reporting frequency	Monthly.
Sampling Plan	For each individual who develops a pressure ulcer(s) whilst in hospital/care home, count the number of days that they had a pressure ulcer(s), and then total these to get a grand total of days for all individuals with a hospital or care home acquired pressure ulcer (this is your denominator). The pressure ulcer rate is calculated by dividing the total number of pressure ulcers developing in the month (*Numerator*) by the total number of pressure ulcer days in the month (*Denominator*) and then multiply the result by 1000 to get the pressure ulcer rate per 1000 pressure ulcer days. Calculate: N/D x 1000; as rate. There should be no sampling for this measure.
Numeric goal	For example - To reduce the rate of hospital acquired pressure ulcers by ?? % on ward X by month year.

*Use of a rate measure enables comparison between different sites

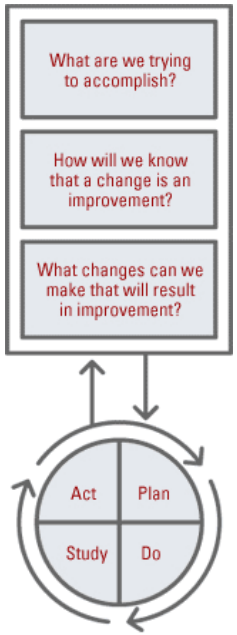
BALANCING MEASURES

These are measures designed to identify the impact (positive or negative) of this work and interventions on other parts of the care system. In order to demonstrate cost savings, please complete the productivity calculator (information given below). Other impacts of this programme might be a reduction in average length of hospital stay or number of complaints. It is a good idea at the outset of your improvement work to gather baseline data for the following balancing measures.

Cost (Productivity)	Reduction in the cost of managing pressure ulcers. Refer to the Department of Health Pressure Ulcer Productivity Calculator at http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_116669 Refer to the Scottish Adapted European Pressure Ulcer Advisory Panel Grading Tool. This can be found at www.healthcareimprovementscotland.org or www.tissueviabilityonline.com
Average Length of stay	Reduction in the average length of stay. Add the total number of days stay per month. This number can then be divided by the total number of patients/residents discharged per month. Once you have worked out the average length of stay per month, you can record this number in a calendar chart.
Number of complaints	Reduction in the number of complaints from service users (family etc).

Appendix 1 - Model for Improvement

The Model for Improvement* is a simple yet powerful tool for accelerating improvement, which has two parts:
• Three fundamental questions, which can be addressed in any order.
• The PDSA (Plan-Do-Study-Act) cycle to test and implement changes. The PDSA cycle guides the test of a change to determine if the change is an improvement.



Setting Aims - Improvement requires setting aims. The aim should be time-specific and measurable; it should also define the specific population of patients that will be affected.

Establishing Measures - Teams use quantitative measures to determine if a specific change actually leads to an improvement.

Selecting Changes - All improvement requires making changes, but not all changes result in improvement. Organizations therefore must identify the changes that are most likely to result in improvement.

Testing Changes - The Plan-Do-Study-Act (PDSA) cycle is shorthand for testing a change in the real work setting — by planning it, trying it, observing the results, and acting on what is learned. This is the scientific method used for action-oriented learning.

Plan
List the tasks needed to set up the test of change.
Predict what will happen when the test is carried out.
Determine who will run the test.

Do
Run the test.
Document what happened when you ran the test.
Describe problems and observations.

Study
Describe the measured results and how they compared to predictions.

Act
Determine what your next PDSA cycle will be based on your learning.

**The Model for Improvement was developed by Associates in Process*
Langley GL, Nolan KM, Nolan TW, Norman CL, Provost LP.
The Improvement Guide: A Practical Approach to Enhancing Organizational Performance