Acknowledgements

This toolkit has been developed based on the IHI SBAR toolkit developed by Kaiser Permanent, the NHS Institute for Improvement and Innovation toolkit and the WEAHSN QI Toolkit. Key Performance Indicators have been developed and tested by University Hospitals Bristol NHS Foundation Trust (UH Bristol) and the West of England Academic Health Science Network.

We would like to thank the team at UH Bristol for their work in the development of this project.

The UH Bristol pilot scheme was funded by the Health Foundation SHINE Innovation programme. Roll out to the other Emergency Departments is being financially supported by the West of England AHSN.

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This document is version 3.0 November 2016
Aim
This toolkit supports the implementation of the ED Safety Checklist and gives advice and guidance on achieving a successful implementation in your emergency department.

This toolkit also provides information and links to resources on change management methods. More support in improvement techniques is available from the West of England Academic Health Science Network website at http://www.weahsn.net/what-we-do/west-of-england-academy/improvement-resources-and-tools/the-improvement-journey/steps-in-the-improvement-journey/

Who this document is for
This guide is for clinical teams in the emergency department, consultants, nurses, quality and safety leads and operational managers as well as ambulance staff.

Introduction

Contents

1. About the ED Safety Checklist
2. Form your team
3. Organise your ED
4. Agree your measures

Appendices

Supporting tools and templates are available online to support this toolkit online at http://www.weahsn.net/what-we-do/enhancing-patient-safety/the-deteriorating-patient/

- Role descriptions
- Sample team meeting agenda
- Risks and issues plan
- Baseline KPI dashboard and input sheet
- Monthly KPI dashboard and input sheet
- SHINE final evaluation report

The ED Safety Checklist is available online in editable format and as a PDF for printing.
The West of England Academic Health Science Network (AHSN) is delivering positive healthcare outcomes locally and nationally by driving the development and adoption of new innovations and making a meaningful contribution to the economy.

We are one of 15 AHSNs across England, established by NHS England in 2013 to spread innovation at pace and scale.

As the only bodies that connect NHS and academic organisations, the third sector and industry, we are catalysts that create the right conditions to facilitate change across whole health and social care economies, with a clear focus on improving outcomes for patients.

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The aims of the Emergency Department (ED) Safety Checklist are to standardise and improve the delivery of basic care in EDs, to improve resilience in EDs during periods of crowding, to improve the safety and clinical outcomes for patients accessing the emergency care system, and to improve ED performance against Best Practice Tariffs.

What is the ED Safety Checklist?
An ED Safety Checklist is a time based framework of tasks that is completed for every patient, other than those with minor complaints.

The ED Safety Checklist can be completed by any member of clinical staff in any area. It is prescriptive and contains all basic elements of care.

Best Practice Tariffs and early triggers to specific care pathways such as sepsis are included.

What is the problem we are trying to address?
Crowding has a profound impact on the ED’s ability to deliver safe care.

Delays in recognition and treatment of severe illness are common, with associated poor outcomes. This is particularly problematic for patients suffering from stroke, heart attack and sepsis.

A scarcity of staff in the ED workforce has resulted in a reliance on agency and non ED-trained staff.

Human factors - as staff become overwhelmed by the tasks they need to complete in a timely fashion and with constant interruption.

What is the evidence base for the intervention?
At University Hospitals Bristol NHS Foundation Trust (UH Bristol) the mean proportions in Key Performance Indicators (KPI) taken before and after the introduction of the ED Safety Checklist improved in 5%-25% in most cases.

Quality improvements we hope to achieve:
- Improved baseline clinical care
- Less clinical incidents
- More efficient handover
- More efficient documentation
- Improved performance against best practice tariff
- Decrease avoidable harm by recognising deterioration
- Enhanced safety region-wide
- Improved communication
- Improved team morale
- Improved patient and staff feedback
Overcrowding has an impact on the ability of staff in the ED to deliver safe care. Delays in recognition and treatment of severe illness are common, with associated poor outcomes. This is particularly problematic for patients suffering from stroke, heart attack and sepsis.

Staffing challenges in the ED workforce have resulted in a reliance on agency and non ED-trained staff. As staff become overwhelmed by the tasks they need to complete while faced with constant interruptions there is a risk of omissions in the delivery of basic care elements, which contributes to harm and difficulty in identifying the deteriorating patient in a crowd.

Safety checklists have been shown to improve standardisation and demonstrate improvements in patient safety and care. The team at UH Bristol developed the ED Safety Checklist.

Following a period of development and testing, including input from public and patient representatives, the ED Safety Checklist was introduced to the UH Bristol adult ED in November 2014.

At UH Bristol the checklist is used for every ‘major end’ patient coming into the adult ED - a footfall of almost 14,000 patients every year.

The impact

UH Bristol’s performance was analysed against similar baseline data. After the introduction of the ED safety checklist, performance against baseline increased with a p-value of <0.0001 in most cases.

Quantitative improvements

- Improved management of time-critical conditions, UH Bristol saw a mean increase of over 5% in CT scanning within one hour for suspected strokes.
- Earlier recognition and rescue of clinically deteriorating patients. UH Bristol saw a mean increase of 25% in hourly observations and early warning score calculations.
- Ensuring patients are on the correct care pathways out of EDs. UH Bristol saw an 11% in patients treated on the stroke pathway.

Qualitative improvements

- Reduced length of hospital stay.
- Better supported staff, including those less familiar with the ED and ambulance crews.
- Improved quality of handover.
- Appropriate continuity of care.

Since the introduction of the ED Safety Checklist at UH Bristol there have been no clinical incidents related to failure to recognise deteriorating patients or delay in care delivery. This can be compared with the winter prior to implementation when there were five serious incidents due to failure to recognise deterioration, three of which were in the ambulance queue.

“International evidence, highlighted in the ‘Keogh Review’ of Urgent and Emergency Care clearly demonstrates the risks that crowded EDs pose to patient safety and outcome. This intervention is designed to directly address these challenges, and has already been shown to be effective: it is entirely consistent with national policy in emergency care.”

Professor Jonathan Benger, National Clinical Director for Urgent Care, NHS England

Key contacts

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Ellie Wetz, Patient Safety Improvement Lead, West of England AHSN, ellie.wetz@weahsn.net

You can watch a short video here about the ED Safety Checklist pilot at UH Bristol. You’ll need the password ‘shine’.
The ED Safety Checklist is a simple time-based framework of nursing and medical tasks. The checklist systemises the observations, tests and treatments required by patients in a time-based sequence. This makes it clear what has been done and what needs to be done next. The checklist serves as an aide-memoire for busy staff. Any doctor, nurse, bank or agency staff can join the department and provide the right care. By providing this structure, the checklist results in improved outcomes for patients and a reduction in system risk.

The ED Safety Checklist is structured into two parts:

**Part 1 - Provision of basic safe clinical care**

A time-based framework for vital sign measurement and calculation of the National Early Warning Score (NEWS), pain scoring, administration of drugs and front-loading investigations.

**Part 2 - Value added tasks**

Include referrals to drug and alcohol services, liaison psychiatry and occupational therapy.

Commencement of pathways that demonstrably improve outcomes (e.g. fractured neck of femur, stroke and diabetic ketoacidosis).

Our experience has shown that the Phase 2 value added tasks only improved after Phase 1 (basic clinical care) was well embedded.

**Best practice**

The ED Safety Checklist needs to work for your ED and be specifically structured to account for your Trust specialisms, your local demographic and other environmental factors. The Local Implementation Team (LIT) at each adopting ED will need to assess what should be included in the ED Safety Checklist. It is suggested that a comprehensive review of ED clinical incidents should be carried out to inform these decisions prior to PDSA testing of the ED Safety Checklist.

However, the recommendations for best practice from the Royal College of Emergency Medicine are:

- Vital signs taken and NEWScore calculated regularly.
- Front loading of investigations i.e. imaging, bloods etc.
- Pain relief

Therefore, it is our strong recommendation that these elements are included as mandatory fields. KPI data will be driven by the fields in the checklist and will be unique to each ED. However, in order to support the West of England AHSN’s work to evaluate the impact of the ED Safety Checklist, we would be grateful that specific fields and KPIs are routinely recorded as standard to ensure parity of data across all adopting Trusts.
In order to implement the ED Safety Checklist in a sustainable way in your organisation, and to be able to measure the impact of this intervention, we recommend a structured Quality Improvement framework for implementation.

Quality Improvement science is the application of a systematic approach using specific methods and techniques in order to deliver measurable improvements in quality, care and safety.

The processes we describe can be adapted to meet the needs of your staff, service users and organisational context. Our approach uses the methodology developed by the Institute of Health called the IHI Model of Improvement.

You can find out more about the Model for improvement through our QI toolkit, available at http://www.weahsn.net/what-we-do/west-of-england-academy/improvement-resources-and-tools/the-improvement-journey/steps-in-the-improvement-journey/

For an introduction to PDSA cycles watch this video https://youtu.be/xzAp6ZV5ml4

### The IHI Model for Improvement

There are three questions to ask when developing implementation projects shown to the right.

These are then followed by rapid cycle improvement using PDSA.

**Plan, Do, Study, Act** is an effective method that helps teams plan the actions for their model, test it on a small scale, and review before deciding how to continue.

Using PDSA cycles are a fantastic way of taking ideas, trying them in practice, learning what works, and what doesn’t help you achieve success.

You can then broaden the scale of the test, or adjust your ideas through more than one PDSA cycle — it may take a few before the idea starts to work reliably.

For a fun way to introduce a team to quality improvement, check out this blog post http://www.weahsn.net/2016/01/anyone-for-tennis/
Overcrowding in emergency departments is widespread and is associated with clinically significant delays to diagnosis, recognising deterioration and treatment. Omissions in basic clinical care are common during crowding. Checklists have been shown to improve standardisation and reliability in the delivery of healthcare.

### Inputs
- Existing UH Bristol Safety Checklist
- Checklist implementation toolkit
- Learning from West of England Collaborative
- SWAST (Ambulance Service) perspective and expertise
- Central clinical team
- Programme faculty support
- West of England AHSN support
- National Institute for Health Research Collaboration for Leadership in Applied Health Research and Care West evaluation
- Royal College of Emergency Medicine support

### Activities
- Develop and refine generic implementation toolkit - including educational material, data collection and dashboard
- Recruit local implementation teams.
- Implement ED Safety Checklist in all regional EDs and ambulance service.
- Host masterclass for national interested parties.
- Make toolkit and all resources available via West of England Academic Health Science Network website.

### Outputs
- LIT dashboards
- LIT risk and issues registers
- Regional dashboard (Life System)
- Regional risk and issues register
- Communication Strategy - including programme communication networks, tools, and Learning Set events
- Evaluation data and analyses
- Project reports and published outputs
- Dissemination activities

### Outcomes
- Improved baseline clinical care
- Fewer clinical incidents
- More efficient handover
- More efficient documentation
- Improved performance against best practice tariff

### Impact
- Decrease avoidable harm by recognising deterioration
- Enhanced safety in all adapting EDs
- Improved communication
- Improved team morale
- Improved patient and staff feedback
Role descriptions

Each ED will need to appoint individuals to specific roles within each Local Implementation Team (LIT). It is strongly suggested that these roles are fulfilled by staff already in post working in the EDs, not staff brought in for the specific functions/roles outlined in this Toolkit. In order to release people to complete the roles specified in this Toolkit, a commitment must be given by the Trust to backfill the individuals undertaken them.

**Lead Nurse**
- Providing day to day nursing leadership to the Project
- Agree quality metrics for measurement (clinical and operational) to assess impact of project with Lead Consultant
- Educating ED staff on the project aims, methodology and anticipated patient safety impact, by a full range of communication methods and briefing sessions.
- Delivering appropriate training and staff briefing sessions.
- Champions of the project on the shop floor
- Ensuring regular feedback results to all staff groups
- Presenting information in a variety of formats
- Coordinate regular meetings with Project Team to discuss project progression and action plan/delegation of responsibilities
- Target specific staff groups according to their involvement in the project (ED admin staff, clinical site managers)
- Liaise with trust data analysts to present data effectively and professionally
- Write and present reports as required

**Lead Consultant**
- Providing day to day medical leadership to the Project
- Agree quality metrics for measurement (clinical and operational) to assess impact of project with Lead Nurse
- Provide education support in all aspects of the project, but with specific emphasis on medical staff at all levels and consultant colleagues.
- Champions of the project on the shop floor
- Presenting project information and results in a variety of formats
- Target specific staff groups according to their involvement in the project (CSMs)
- Write and present reports as required

**Audit Coordination Nurse / Data Analyst**
- Collecting and collating agreed metrics
- Review retrospective data to enable comparison of current results
- Managing supporting staff involved in auditing
- Liaise with trust data analysts to present data effectively and professionally
- Contribute and present data results to project group and wider audience

**Other key stakeholders**
- Senior Medical & Nursing Team – need to entrust commitment to project and be a champion on shop floor
- Data Analyst needs to be on board and prepared to assist project with data production and presentation
- Receptionist/Patient Flow Coordinators needs to be on board and understand their contribution as per local procedures
We recommend that each LIT makes time for fortnightly meetings to discuss the progress of the ED Safety Checklist implementation, to ensure the practicalities of the project are being addressed, staff are being supported, messages are being appropriately disseminated and to review site data to track progress. We have provided a generic agenda, which you may find helpful to facilitate these fortnightly meetings. Please feel free to tailor this to your specific LIT.

**LIT Fortnightly Meeting Agenda**

- **Housekeeping**
  - Review of the practicalities required to introduce the ED Safety Checklist i.e. printing etc.
- **Data**
- **Dashboard**
- **Measurement strategy**
- **Staff**
- **Nursing and Medical staff**
- **Pioneers and laggards**
- **Peer support**
- **Risk & Issue Log**
- **Communications & Education**

### Project documentation

It is recommended that each LIT maintain a [Risk & Issue Log](#) for the duration of the project.

Once you have your aim agreed, as a team, consider what risks and issues may prevent you from achieving your aim.

An **issue** is something that is happening. A **risk** is something that might happen. Please use your own organisational risk management scoring for likelihood and impact of risks occurring.

The status of a risk can be open (action required), accepted (all mitigation in place, no action required), closed (risk or issue has been closed).

### Timing of implementation

We recommend that you consider the timing of the implementation of the ED Safety Checklist.

In most EDs, winter crowding puts significant operational pressures on staff at all levels. Therefore, it would be sensible to commence the implementation project during periods when when crowding is not as prevalent and staff have capacity to be released from their shop floor responsibilities.
Organise your Emergency Department

Consider how you will print, store and restock the ED Safety Checklist. Each LIT will need to consider how this works for their local operational procedures.

Photocopy the ED Safety Checklist

If printing in black and white, check the resolutions on all the fields.

Consider what you will do with the ED Safety Checklist once a patient has been discharged out of ED.

At UH Bristol, the ED Safety Checklist is now incorporated into the ED notes ‘booklet’. This whole booklet gets scanned when the patient is discharged out of the department prior to being filed and/or taken with the patient to the ward.

Each LIT needs to consider how they will incorporate the ED Safety Checklist into their ED notes and what procedures will put in place for filing.

**Interface with the ambulance trust**

Patients queuing to offload from ambulance into ED is common. The risk of patients deteriorating in this queue is a significant patient safety issue. LITs should consider engaging with their Ambulance Trust to agree a Standard Operating Procedure (SOP) for paramedics to commence their ED Safety Checklist in the queue and as a tool at handover of care.
Communication and Training

It is recommended that LITs ensure information about the checklist programme, ‘go live’ dates and the wider patient safety benefits of the checklist are communicated not only to ED but across the Trust in order to encourage a culture of support and participation in the programme. LITs should consider a communications strategy in advance of ‘go live’ dates via planned bulletins or within regular communications to both ED and Trust wide staff.

**ED Safety Checklist Training**

This Toolkit recognises that each LIT will have their own training methods and structures for training their staff in the ED Safety Checklist.

For the pilot implementation at UH Bristol the ED Safety Checklist was introduced during the Bite size Teaching Sessions that occur daily at 8am. The emphasis during these sessions was on:

- **Culture** – ensuring organisational buy-in, especially senior nursing and medical staff.
- **Testing** – Are the fields in the ED Safety Checklist right for your ED? Do additional fields need adding?
- **Successes and challenges** – review of the testing cycles, the successes and challenges to implementation.
- **Staff feedback**.

**Feedback during testing**

During your testing of the ED Safety Checklist, you may find it helpful to carry out an anonymised staff survey to see how well the checklist has been received and to gather opinion on sections that work and those that need improvement. A survey monkey questionnaire may be good format for this during your study period of a PDSA cycle.

**Real-time Feedback**

To ensure ongoing compliance with the checklist once implemented and embedded, UH Bristol gave the Nurse Shift Leaders the responsibility to check and monitor that the ED Safety Checklist was being completed for all (appropriate) patients and provide ‘real-time’ feedback and support for those staff who were failing to consistently complete the ED Safety Checklist.

It is our strong recommendation that each adopting ED identify on-shift resource to fulfil this role and provide shop-floor support and feedback to staff.

**National Early Warning Score Training**

A suggested field of the ED Safety Checklist is that vital signs and the National Early Warning Scores (NEWS) are regularly calculated.

The NEWS is routinely used in inpatient wards but often not calculated or tracked in ED or in ambulance queues. The use of a track and trigger system in the UH Bristol pilot showed demonstrable improvements to patient safety and quality of care. If LITs do not routinely use NEWS it may be worth considering an ED training programme to familiarise staff with the accurate calculation of the score.

A NEWS calculation app has been developed by the Scottish Patient Safety Programme and is available to download for free for apple and android phones. Go to the app store and search NEWS Sepsis.

Online NEWS training courses are available, please see [https://tfinews.ocbmedia.com/](https://tfinews.ocbmedia.com/)
NEWS has been produced as a way of making sure that where a patient is at risk of acute deterioration, then vital signs are recorded at a frequency suitable to the clinical scenario, and that escalation of treatment is timely and appropriate where it is needed. Since then it has become promoted as a communication device providing a summary of a patient’s condition and a prompt for intervention, escalation of care or referral as required.

### Calculating NEWS

Vital signs are recorded as a way of finding out if there has been a positive response to treatment, or whether a patient needs a change to an ongoing treatment plan. Whilst it is recognised that serious complications may happen to patients without any warning, in the majority of situations there are warning signs that if acted on are likely to be associated with better outcomes.

NEWS is an inherently simple device but its implementation may involve considerable complexity depending on the organisation in which it is being used. There are two areas that require concerted efforts; these are ensuring that NEWS is recorded accurately, and ensuring that NEWS Scores are well linked to escalation of treatment where this is required. There are significant training implications in any NEWS implementation.


### National Early Warning Score (NEWS)*

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<thead>
<tr>
<th>PHYSIOLOGICAL PARAMETERS</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<tbody>
<tr>
<td>Respiration Rate</td>
<td>≤8</td>
<td>9 - 11</td>
<td>12 - 20</td>
<td>21 - 24</td>
<td>≥25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxygen Saturations</td>
<td>≤91</td>
<td>92 - 93</td>
<td>94 - 95</td>
<td>≥96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any Supplemental Oxygen</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>≤35.0</td>
<td>35.1 - 36.0</td>
<td>36.1 - 38.0</td>
<td>38.1 - 39.0</td>
<td>≥39.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Systolic BP</td>
<td>≤90</td>
<td>91 - 100</td>
<td>101 - 110</td>
<td>111 - 219</td>
<td>≥220</td>
<td></td>
<td></td>
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<td>Heart Rate</td>
<td>≤40</td>
<td>41 - 50</td>
<td>51 - 90</td>
<td>91 - 110</td>
<td>111 - 130</td>
<td>≥131</td>
<td></td>
</tr>
<tr>
<td>Level of Consciousness</td>
<td>V, P, or U</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

The Royal College of Physicians (RCP) has led the development of the National Early Warning Score which advocated standardising the use of a NEWS system across the NHS in order to drive the ‘step change’ required in the assessment and response to acute illness. Find out more at [https://www.rcplondon.ac.uk/projects/outputs/national-early-warning-score-news](https://www.rcplondon.ac.uk/projects/outputs/national-early-warning-score-news)

Agree your measures

How do we know that a Patient Safety intervention has had a positive impact? We measure it. The KPIs (key performance indicators) for each LIT will be determined by the fields incorporated into the ED Safety Checklist through PDSA cycles and testing. However, the West of England AHSN would like to measure the impact of the ED Safety Checklist across all adopting Trusts. This can be achieved by comparing and contrasting like-for-like quantitative data from each LIT.

The Life System Platform

The West of England AHSN would be grateful if participating EDs submit their data on a monthly basis on the Life System platform. This platform will also have run chart and notice board capabilities to facilitate the sharing of information between LITs and across the programme.

The Life System is a web based platform designed to assist front line staff running Quality and Safety improvement projects and has been developed as part of the Patient Safety Collaborative in partnership with SeeData and South West Academic Health Science Network.

The Life System has been built to support team working and collaboration whilst maintaining the principle of an open and transparent culture. It is not designed to collect detailed information on users, organisations or patients, and is not a performance management tool; instead the information collected is only to be used to support improvement.

Contact your Academic Health Science Network to find out if you have access to the Life System. West of England members can sign up for free access here: https://life.seedata.co.uk/login/

Baselining

Each LIT should base line their ED against the KPIs to get a basic understanding of their current performance against the standards.

A sample of notes should be pulled for each month for the preceding year to the ED Safety Checklist implementation (suggested 20 per month).

It is important (and interesting) to base line each LIT so there is some hard data to measure onward performance.

Monthly process

Each month pull a random set (5%) of notes each month from all majors and resuscitation patients where the ED Safety Checklist was applicable. At UH Bristol this equated to 200 sets of notes.

Inclusions/Exclusions: Guidance on whether notes are applicable for auditing is available as a protocol for “Implementation Phase” and “Gold Standard” protocol.

Teams should aim to achieve the Gold Standard between 6 - 12 months from project start date.

Evaluation

The National Institute for Healthcare Research Collaboration for Leadership in Applied Health Research and Care West (NIHR CLAHRC West) has agreed to evaluate the quantitative KPI data collected across participating EDs. A full project evaluation report will be produced once sufficient data has been received.
Key Performance Indicators

**NEWS**

- Vital Signs measured on admission to ED
- NEWScore recorded on admission to ED
- Vital Signs measured hourly
- NEWScore recorded hourly

**Investigations Initiated (if applicable)**

- IV access + care plan
- Blood tests

**Pain**

- Pain Score at triage (within 1st Hour)
- Analgesia administered at triage (if appropriate)
- Pain Score assessed hourly
- Analgesia administered within time limits

**Chest Pain**

- ECG recorded within 10 minutes of arrival
- ECG reviewed by Dr within 30 minutes of ECG

**Pathways**

- Stroke - CT within 1st hour
- Stroke - Pathway completed
- #NOF - X ray within 30 minutes
- #NOF - Pathway completed
- Sepsis - Pathway completed

**Patient Care**

- Next of kin aware within 2 hours of admission
- Refreshments offered within 2 hours of admission (if not NBM)

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**KPI Input Sheet and Dashboard**

Please use the monthly data input sheets to input your LIT data, these are available online for baseline and monthly monitoring.

Valid ED Safety Checklists are those that comply with the Compliance Protocol. The Data Input sheet asks you for a tally of Not Applicable notes, as this will provide useful compliance information.

Each ED Safety Checklist should be assessed against each KPI listed and completed with YES, No, N/A. A drop down is provided in each cell.

The information from the monthly sheets is automatically pulled through to the Dashboard. There is no need to manually enter any information into the Dashboard.

Please ensure the information fields at the top of each page are completed.

**Conditional Formatting**

- Red: <49%
- Amber: 50% - 79%
- Green: >80%
Different types of measures

There are different types of measures:

- **Process measures**, e.g. the number of sessions delivered each month, number of staff trained in each session, number of public contributors involved in training sessions.

- **Outcome measures**, e.g. staff attitude survey of perception of communication within the team and safety attitudes, and confidence with using SBAR before and after the intervention.

- **Balancing measures**, e.g. number of 999 call outs from residential homes before and after training delivered, staff sickness and turnover rates.

What can you measure?

We can **count** something, e.g. the number of patients who have diabetes in a given population, or the number of serious adverse events in a given time period.

We can use **ratios** which consider of two numbers, a numerator and a denominator. Sometimes this number is expressed as a **percentage**. For example if there are 5 adverse events each year in a 250 population, that is 0.02 adverse events per person (ratio) or a 2% adverse event rate (percentage).

Reasons for measuring:

- **Measurement for judgement**: where measures are used to judge us against performance targets, other Trusts, etc. Improvement is not about judgement, however, you can use measures to judge and manage your own progress.

- **Measurement for diagnosis**: where data is gathered to understand the process, to see if there is a problem and how big it is. This is a useful technique, especially early in your work, for example, to really understand the demand and capacity at a bottleneck in the process.

- **Measurement for improvement**: where a few specific measures, linked to the your objectives and aims, demonstrate whether the changes are making improvements.

- **Measurement for sustainability**: to ensure the changes and the improved outcomes are maintained and are part of everyday practice. These are long term measures linked to organisational aims.

- **Measurement for spread**: specific measures to demonstrate the extent to which learning and change principles for improvement have been adopted.

Run charts

A run chart is a tool for improvement which shows how your project is going. To show that things have improved you need to show the things that have changed, and that the change is not a one off. You must consider whether the change has been sustained. Run or control charts allow you to see if this has happened.

For more information on run charts visit [http://www.veahsn.net/what-we-do/west-of-england-academy/improvement-resources-and-tools/the-improvement-journey/steps-in-the-improvement-journey/step-4-test-and-measure-improvement/run-charts/]
Appendixes

This toolkit and supporting resources are available online at http://www.weahsn.net/what-we-do/enhancing-patient-safety/the-deteriorating-patient/

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Research papers


https://www.rcplondon.ac.uk/resources/national-early-warning-score-news


Image sources

Photo on p14 from NHS Photo Library.

All other images have been developed by the WEAHSN for this training package.