Improving the recognition of and response to the deteriorating patient

Change package

Contents

Introduction

With a rapid response call activated approximately every 15 minutes, there is increasing demand on both recognition and response systems and health services. This is leading to significant variation in practice across services in the Victoria. This document will help you improve your recognition and response system so that it is safer, more responsive, sustainable and effectively cares for the deteriorating patient.

Safer Care Victoria developed this change package to guide Victorian health services to improve their recognition of, and response to, the deteriorating patient. In this document you will find ideas on how to improve your recognition and response system and an outline of the process to successfully achieve improvement.

Areas for improvement

Clearly defined expectation of clinicians during the rapid response call

Clearly defined roles and responsibilities for those involved in the recognition and response system at both organisational and ward level

Have clear rapid response escalation policy/policies

Robust rapid response notification system, including notification of attending clinician/team

Guidelines for management of common deterioration syndromes

A nominated clinician provides patient/family/carer with information and answers questions following the rapid response call

Consistent recognition and response system data collection, analysis and reporting

Feedback to attending clinicians/teams/ wards includes recognition and response data and specific trends

Delegate a clinician responsible for follow up of patient post rapid response call

BACKGROUND

At a forum in 2019, critical care clinicians agreed to address the increasing demand on, and significant variation in, recognition and response systems across the state.

In June 2019, we established an expert working group of clinicians and consumers to refine existing recognition and response system clinical governance and engagement documents. As a result, two frameworks and an associated self-assessment were developed to help health services identify areas for improvement in their recognition and response system.

Seven health services used the governance and clinical engagement self-assessment to identify areas for improvement. The health services were then supported to use the model for improvement[1] to understand their area for improvement, develop and test change ideas, implement the change and sustain the improvements made. Summaries of each of the projects can be found in **Appendix 1.**

Figure 1. Change ideas developed and tested by the participating health services

Pre RRS call
- Refined the rapid response system in a health service without a critical care unit
- Developed a rapid response call notification system in a health service without a PA system
- Developed blood glucose management pathways to help decrease repeat rapid response calls

During RRS call
- Defined rapid response team roles and responsibilities
- Refined the rapid response call form
- Used the NEWS 2 score to triage ICU registrar involvement in the rapid response call

Post RRS call
- Refined the role for entering rapid response, code blue and goals of care data into the rapid response database
- Refined rapid response call data collected
- Used data to identify patient population groups that have high rates of repeat rapid response calls
- Developed reports to feedback rapid response call data to care teams
- Defined roles and responsbility for critical care nurse follow up post rapid response call
- Refined next of kin notifiction process post rapid response call

NEED HELP OR ADVICE?

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KEEP UPDATED

The SCV recognition and response system documents and this change package will be regularly reviewed and updated. We will communicate any updates to Victorian health services through our enewsletter. Please subscribe at www.bettersafercare.vic.gov.au/newsletter.

If you have any feedback about the recognition and response system documents or this change package, please let us know.

Thank you

We acknowledge the previous work done by the Medical Emergency Team (MET) expert working group in 2016/17 which formed the foundation for this project.

We also wish to recognise the input of the recognition and response system project expert working group and subcommittee members: Cara Hammond (Benalla Health), Carmel Taylor (Austin Health), Carolyn Conti (John Fawkner Private Hospital), Courtney Redaelli (Central Gippsland Health), Crystal Polson (Nurse Practitioner – USA), Daryl Jones (Austin Health), David Pilcher (Alfred Health), Gary Blackburn (Western Health), Jacki Doyle (Eastern Health), Natalie Ross (Consumer), Nima Kahko (Barwon Health), Raj Liskaser (Consumer), Shoko Satake (The Royal Melbourne Hospital), Tali Gadish (The Royal Children's Hospital) and Tina Johnstone (South West Healthcare).

Lastly a big thank you to the seven health services and project teams who participated in the recognition and response system project: Barwon Health, Benalla Health, Epworth Richmond, Latrobe Regional Health, Northeast Health Wangaratta, South West Healthcare and St John of God (SJOG) Bendigo.

How to use this change package

This change package contains guidance and resources to help health services identify areas for improvement in your recognition and response system, develop change ideas, and test and evaluate those change ideas. The successes and lessons learnt from the 2019/20 recognition and response system project have been collated and included in this package.

This package includes:

- a step-by-step guide to implementation (with project timeline)
- quality improvement tools and resources
- case studies, hints and tips.

SJOG Bendigo's top tip

Change is hard but we can make an impact!

Definitions

Clinical governance: The integrated systems, processes, leadership and culture that are central to providing safe, effective, accountable and person-centred care, underpinned by continuous improvement.[2]

Recognition and response systems: Formal systems that support staff to promptly and reliably recognise patients who are clinically deteriorating, and to respond appropriately to stabilise the patient.[3]

Rapid response system: The system for providing emergency assistance to patients whose condition is deteriorating. The system will include the clinical team or individual providing emergency assistance and may include on-site and off-site personnel. Examples of rapid response systems include the Medical Emergency Team (MET) system, a nurse practitioner-led system and a GP-led system. Variations in your rapid response system may occur in different circumstances – for example, in-hours versus out-of-hours.[3]

Rapid response team or provider: The team or provider who are notified and provide assistance when a patient's condition has acutely deteriorated. This assistance is provided as part of the rapid response system and is additional to the care provided by the attending clinician or team.[3]

Attending clinician or team: The treating clinician or team with primary responsibility for caring for the patient.[3]

Improve your recognition and response system – A step-by-step guide

To improve the recognition and response system at your health service, you will require a project team and plan. It is important to understand the current state of practice, gather baseline data or information, and organise a team.

It is reasonable to assign six to 12 months to undertake this improvement project. Use the below timeline as a guide and adapt to your health service depending on available resources. The number of change ideas you wish to test and implement will also impact the length of your project.

Activity	1	2	3	4	5	6	7	8	9	10	11	12
IDENTIFY AREA FOR IMPROVEMENT												
1. Use self-assessment to identify area for improvement	•											
PLAN												
2. Build a team and establish governance	•											
3. Understand your area for improvement and develop a project aim	•	•										
4. Define project measures		•										
5. Collect initial measures		•	•									
6. Use tools to develop change ideas				•								
7. Select change ideas to test				•								
TEST												
8. Test your change idea/s using PDSA cycles					•	•	•					
IMPLEMENT												
9. Embed the change into standard practice						•	•	•				
SUSTAIN												
10. Sustain the change					•	•	•	•	•	•	•	→
SPREAD												
11. Spread to other areas of your health service					•	•	•	•	•	•	•	→

IDENTIFY AREA FOR IMPROVEMENT

1.   Use self-assessment to identify area for improvement

It is important that you clearly define an area for improvement in your recognition and response system before developing change ideas. Sometimes your area for improvement may not be as obvious as you think. Use our self-assessment tools to help identify your area for improvement. The self-assessment tools were developed to be complementary to the governance and clinical engagement frameworks.

To get a full understanding of your recognition and response system we recommend completing the self-assessment with a group of clinicians/staff and consumers who are familiar with the recognition and response system. At a minimum we recommend the self-assessment group include:

- recognition and response system operational and/or clinical lead
- standard 8 (patient deterioration) governance member
- attending clinician/team member
- bedside clinician
- consumer.

Top tip

Sometimes it can be difficult to identify the specific area for improvement, sometimes opportunities for improvement might not be that obvious or have been previously thought about.

To understand the opportunities for improvement in your recognition and response system, we recommend completing the governance and clinical engagement self-assessments.

PLAN

2.   Build a team and establish governance

Build a team

You will need to build a team to help deliver and oversee the project. The project team should be multidisciplinary and include all relevant stakeholders. Consider the following members to include in your team:

- Executive sponsor – this should be an executive who has oversight of standard 8 and/or your recognition and response system
- Innovation and improvement advisor (if available)
- Quality improvement team member
- Standard 8 lead or champion
- Nurse in charge of running the recognition and response system – this could be the nurse responsible for the day-to-day running of the recognition and response system, the nurse unit manager of ICU, or equivalent

Barwon Health's top tip

Diversify your team.

- Director of ICU or equivalent medical personnel who oversees the recognition and response system
- Rapid response nurse
- Medical staff who respond to a rapid response call
- Ward nurse
- Consumer

It can be challenging to embark on project work if you have a clinical caseload. Consider the addition of clinical and non-clinical staff on your team to distribute the workload and ensure the project can be delivered successfully.

Each team member should have defined roles and responsibilities.

Project lead

Nominate a project lead who can coordinate the project timeline and team. It is beneficial if the project lead has an interest in the recognition and response system and/or has experience with quality improvement initiatives.

Executive sponsor

The role of the executive sponsor is to:

- ensure the project's aim aligns with the health services priorities
- provide support and advocate for the project at an executive level
- assist with project accountability
- manage significant issues and barriers that may impact on the success and sustainability of the project.

Innovation and improvement advisor

The role of the innovation and improvement advisor is to:

- provide any extra quality improvement resources
- coach and support project teams through the project process
- report project updates to any relevant committees.

Northeast Health Wangaratta's experience

'Including the NUM/ANUM from the medical ward in our project provided us with the insight and experience of how MET calls ran on their ward. What challenges they experienced and how they were supported by the MET team. It allowed us to review the process from all angles to ensure the changes we were making would be sustained and beneficial.'

Benalla Health's experience

'Having our executive sponsor on board with the project was a great support and really kept the momentum going. She attended all of our team meetings and SCV hook ins. It allowed us a greater buy in with our executive team, freedom to execute changes and assistance in engaging other resources throughout the organisation.'

Standard 8 lead or champion

The role of the standard 8 lead or champion is to:

- provide resources and materials (i.e. data) to understand the area for improvement and enable the project to be undertaken
- ensure that the project aligns with the health services current standard 8 workplan
- report project updates to any relevant committees.

Establish governance

It is important to ensure you have a strong clinical governance structure to support the recognition and response system and to support this project. To identify if you have any areas for improvement in your recognition and response system governance structure you can review the governance framework and complete the governance self-assessment.

Note: using the self-assessment tool you may identify areas for improvement in your clinical governance structure. This may well be your first area for improvement.

Consider the following:

- When do relevant governing committees meet? This is important to know when planning a timeline for the project, especially if this governing committee needs to approve aspects of the project.
- Who needs to sign off any changes made during or as a result of the project?
- Who should you report to about the project?

Epworth Richmond's experience

'SCV's advice regarding the optimal [governance] structure for the governance working group was crucial in the project's success. It combined the clinical, quality and administrative arms of the hospital which could slice through red tape.'

3.   Understand your area for improvement and develop a project aim

Before you come up with any new change ideas you must first understand your problem. What are you trying to achieve? Start by defining the following:

- the problem
- rationale
- aim statement.

Barwon Health's top tip

Start small and focused.

Understand the problem

Understand the current issues, problems and area for improvement in your recognition and response system. To help you understand your area for improvement we suggest you do the following:

- Use already collected data to identify patterns or trends that would assist you in understanding your area for improvement.
- Complete a process map to identify areas of duplication, confusion or poor communication/flow.
- Discuss your area for improvement with multiple key stakeholders, including those that are actively working in or access the area that you want to improve.

Process map

A process map is a visual representation of the sequence of steps in a process. By stepping out a process it can help identify:

- areas of confusion
- steps that do not add value (i.e. delays, duplication, expense)
- communication breakdowns.

These can all identify areas of improvement and may also help generate some change ideas.

To complete a process map you should:

1. gather key people – those who know the process best
2. identify the first and last step in the process
3. map out the process – map out how it actually works **not** how it should work
4. review the process map and check for accuracy
5. identify areas that could be improved within the process.

A worksheet to assist you complete a process map can be found in **Appendix 2**.

An example of a process map can be found in **Appendix 3**.

Rationale

Make sure your area for improvement aligns with the hospital strategic plan.

Ensure no major projects are being undertaken in your health service that may derail or take time away from your ability to complete the project.

Ensure you have enough time to dedicate to the project.

Aim statement

An aim statement answers, 'What are we trying to accomplish?' It should be time specific and measurable, and answer the following:

- What?
- By how much?
- By when?
- For whom?
- Where?

For example: To decrease repeat rapid response calls by 20 per cent by June 2020.

A worksheet to assist you in writing your aim statement can be found in **Appendix 4**.

4. Define project measures

Measures are important. They help demonstrate if your change results in an improvement or not. Because healthcare systems are complex, multiple measures are needed to assess the impact of change. There are three types of measures – outcome, process and balancing.

- **Outcome measure(s)**
  - Measures the impact of your change on the patient or system.
  - This measure should directly reflect your aim.
  - Example: Rate of repeat rapid response calls within 24 hours of last rapid response call.

- **Process measure(s)**
  - Measures the step/s in the system that contribute to you achieving your aim.
  - Are the steps in your system performing as planned?
  - Example: Percentage of times the attending medical team attend the rapid response call.

- **Balancing measure(s)**
  - Measures the unintended consequences of the change on the entire system.
  - Is the change introducing problems elsewhere in the system?
  - Example: Rate of rapid response calls, rate of cardiac arrests.

SJOG Bendigo's top tip

Data is KING!

Consult key stakeholders and discuss with your project team before defining your final measures.

Consider the time required to collect each data point and the ease of obtaining the data.

See **Appendix 5** for example project measures.

5.   Collect initial measures

To identify if your change resulted in an improvement and to understand if you are sustaining your improvement you will need to collect data before, during and after your project.

It is important to remember that improvement is not research, you only need to gather just enough data to inform whether you have made an improvement or not. Improvement happens quickly and your data collection should reflect this.

We would recommend collecting weekly data and have a minimum of 10 data points as your baseline (i.e. 10 weeks of data).

Your data should tell a story. Therefore, you should display your data on what is called a run chart. A run chart plots data over time. Anyone should be able to look at your run chart and have a basic understanding of your improvement journey. A run chart should include:

- Y axis – what you are measuring
- X axis – time
- median line
- goal line (if applicable)
- annotations of events/reasons for change
- direction of improvement.

See **Appendix 6** for an example of a run chart.

> **Epworth Richmond's top tip**
>
> Regularly review your data and use it to calibrate the project strategies with your aim.

6.   Use tools to develop change ideas

Change ideas

A change idea is an actionable, specific idea for changing a process. Change ideas can be tested to determine whether they will result in improvement.

Change ideas can be generated from a range of places including:

- completing a driver diagram
- completing a process map
- tapping into local knowledge (asking staff for ideas)
- looking to other groups who have made improvements in similar areas
- reviewing benchmarks established by other organisations, including those outside your area or region.

Driver diagrams

Driver diagrams (**Figure 2**) are a visual tool that help you identify the gaps between your current system and the ideal system. It also helps you find ways to fill these gaps by generating change ideas. It highlights what drives or contributes to the achievement of the project aim.

Figure 2. Driver diagram template

Aim	Primary Drivers	Secondary Drivers	Change ideas
Aim statement	Primary driver	Secondary driver	Change idea
		Secondary driver	Change idea
	Primary driver	Secondary driver	Change idea
		Secondary driver	Change idea
	Primary driver	Secondary driver	Change idea

Components of a driver diagram

Aim: What you want to accomplish.

Primary driver: High-level factors or elements in the system that you must change or influence to accomplish the aim.

Secondary driver: These are actional approaches, areas, groups or opportunities within the system where a change can occur and will impact on your associated primary driver.

Change idea: These are tangible and specific ideas that are to be tested and potentially implemented within the system. Each change idea will contribute to at least one secondary driver.

Examples of change ideas can be found in **Appendix 7**.

How to complete a driver diagram

1. Start with your aim statement.
2. Complete primary drivers.
3. Complete secondary drivers.
4. Develop change ideas based on secondary drivers.

Table 1. Potential rapid repsponse driver diagram

Aim	Primary Drivers	Secondary Drivers	Change ideas
Decrease repeat rapid response calls by 20% by June 2020	Clinical governance	Defined roles and responsibilities	Develop clear roles for each member of the rapid response team
			Use stickers to identify who is undertaking each rapid response roll
		Regular review of the rapid response system	Standard 8 committee to review rapid response data monthly
	Response	Attendance at the rapid response call	
		Follow-up post rapid response call	Post-RRS rapid response team to delegate follow up to a member of the attending team
	Communication	Communication with attending team	
		Communication with next of kin	Medical registrar to notify patient's next of kin post-RRS call
	Feedback	Feedback to attending teams	Generate a monthly rapid response call report for all attending teams

To help you understand how to use driver diagrams watch this short, simple video.

A worksheet to help you complete your driver diagram can be found in **Appendix 8**.

An example of a driver diagram can be found in **Appendix 9**.

7. Select change ideas to test

After you have compiled a list of change ideas, you will need to narrow the list to those that will most likely result in an improvement. One way to help you choose your change idea is to use a change matrix (**Figure 3**).

Figure 3: Change matrix template
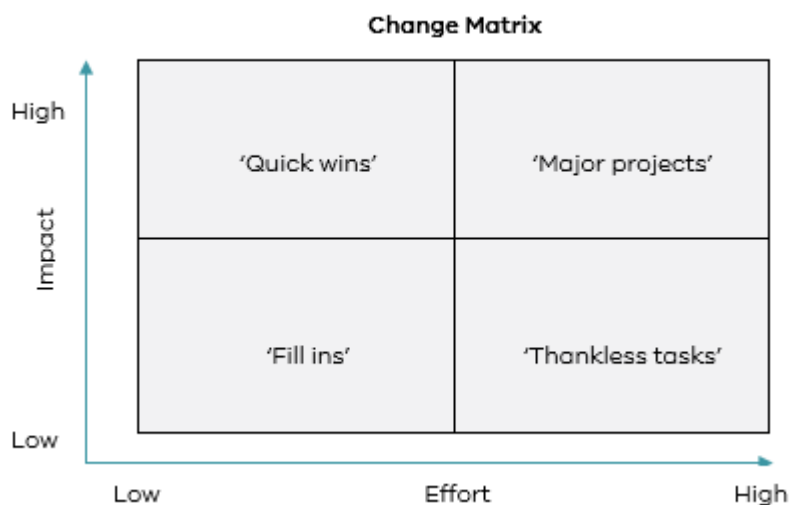
Change Matrix

Rank each change idea on their likeliness to impact positively on the system, and then on the effort needed to undertake the change idea. Then plot the change ideas into one of four quadrants on the change matrix.

- **Quick wins** (high impact, low effort): Quick wins are the most attractive change ideas to test as they give you a good return for relatively little effort. You should focus on these change ideas as much as you can.
- **Major projects** (High impact, high effort): Major projects give good returns, but they are time-consuming and take a large amount of effort. This means that in the time taken to test one major change idea you could test multiple quick win change ideas.
- **Fill ins** (low impact, low effort): Don't worry too much about testing these change ideas – if you have spare time do them, otherwise leave these until last.
- **Thankless tasks** (low impact, high effort): Try to avoid testing these change ideas. They give little in return and they take up a lot of time that you could be spending on quick win change ideas.

Sometimes we get stuck looking for the perfect solution/change idea. However, some of the most important learnings come from a change idea that does not work. The important thing is to start, measure, and continually learn and improve. Starting with the quick wins will help develop momentum for your improvement project.

A worksheet to help you complete your change matrix can be found in **Appendix 10**.

TEST

8.   Test your change ideas using PDSA cycles

The next step in the improvement cycle is to test a change idea in the real work setting. The Plan-Do-Study-Act (PDSA) cycle is shorthand for testing a change – by planning it, trying it, observing the results and acting on what is learned.

Adopted from the Institute for Healthcare Improvement.[1]

Step one: Plan

Plan how you are going to test your change idea, including a plan for collecting data.

- State the objective of the test.
- Make predictions about what will happen and why.
- Develop a plan to test the change idea (Who? What? When? Where? What data needs to be collected?).
- Identify what data you need to collect to evaluate the result of the test – remember data should be both quantitative and qualitative. What did the staff think? Was the change idea easy to carry out? Is there anything that could be done better?

Step two: Do

Test the change on a small scale.

- Carry out the test.
- Document problems and unexpected observations.
- Begin analysis of the data.

Step three: Study

Set aside time to analyse the data and study the results.

- Complete the analysis of the data.
- Compare the data to your predictions.
- Summarise and reflect on what was learned.

Step four: Act

Adapt, adopt or abandon your change idea, based on what you learnt from the test.

- Determine whether:
  – you can adopt the change idea as it is
  – you need to adapt the change idea and test it again
  – your change idea did not work, and you need to abandon the change idea all together.
- Prepare a plan for the next test.

Northeast Health Wangaratta's top tip

Just start – it doesn't have to be perfect.

Epworth Richmond's top tip

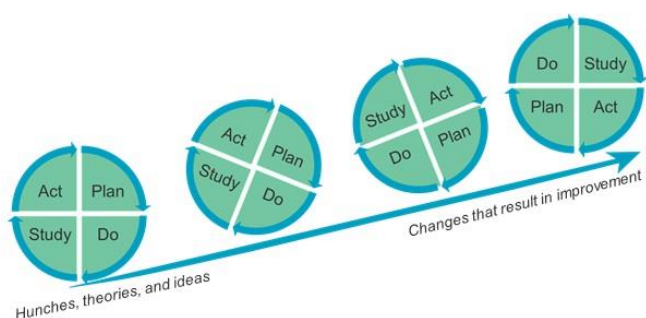Start small and have PDSA cycles that can be adjusted and then scaled.

Barwon Health's top tip

Ask for feedback/concerns to help raise new ideas and to flag issues early.

Northeast Health Wangaratta's top tip

It is ok to abandon a change idea and reassess.

With each PDSA cycle you should apply what you have learnt and then test again – this is called linking PDSA cycles.

Adopted from the Institute for Healthcare Improvement.[1]

After each cycle you might expand the test, adjust the test or abandon the idea and look for another change idea. By completing linked PDSA cycles, you have a chance to work out the problems you encounter before you implement the change.

PDSA cycle tips

Adopted from the Institute for Healthcare Improvement[1]

1. Your change idea doesn't have to be perfect – just get started.
2. Don't reinvent the wheel.
3. Start small – i.e. one patient, one event, in one location.
4. Plan a cycle ahead.
5. Pick willing volunteers to participate in the early PDSA cycles.
6. Early on avoid the need for consensus, buy-in or political conversations – this can come later.
7. Pick easy changes to try – this will build momentum.
8. Avoid technical slowdowns – i.e. waiting on an update of an IT system.
9. Reflect on results of every change.
10. It is ok to abandon a change – now you know what doesn't work.

If you would like to know more about the PDSA cycle you can watch the following two videos:

- Video 1
- Video 2

A worksheet to assist you in documenting your PDSA cycles can be found in **Appendix 11**.

IMPLEMENT

### 9.	Embed the change into standard practice

Implementation is when your change idea becomes the permanent way work is done. Your change idea becomes the 'new norm' in an entire unit, ward, service or population. You build the change idea into your everyday work environment.

When do we implement?

When you have tested your change idea and you feel like there are no more changes required, then you are ready to adopt your change idea and implement it into a particular area.

How do we make sure that implementation will be a success?

The number one marker of successful implementation is the quality of the PDSA cycles during the testing phase and the resulting learnings and adaptations made to the change idea. However, you should also consider:

- standardisation – ensure the new way is specific and recognised, i.e. a standard document, protocol, guidelines
- measurement – is the change idea being implemented? Is there an improvement in patient outcomes/care?
- resourcing – what new equipment, forms, training, etc do you need to help your implementation?
- training – what education (both short and long term) do staff need?
- documentation – make sure you document all of the above, so it is easy to repeat the process when the time comes. Think, could someone take this over without a handover?

Last of all make sure that it is really easy for people to make your change idea a part of their everyday.

SUSTAIN

### 10.	Sustain the change

Sustainability is locking in the progress you have made and continuing to build on that progress. Sustainability is hard but essential. Improvements have been realised, resources have been invested to create change and you do not want to go back to the previous way of doing things.

The earlier you think about sustainability the easier it will be. Think about sustainability from your very first change idea and PDSA cycle.

When should we move into the sustainability phase?

You can only move into the sustainability phase once you have been holding your gains for several months. The means that not only has the change idea been tested under multiple conditions, but there has also been enough time for staff thinking and attitudes behind the change to fundamentally alter – it will no longer be something new but something 'normal'.

How do we make sure that the change will be successfully sustained?

There are five important areas that need to be considered when planning for sustainability:

- Measurement – what are you going to measure going forward?
- Ownership – who is going to be responsible for the change going forward?
- Communication and training – how will people (including new staff) know about the change?
- Hardwiring and trending to infrastructure – how will you make it hard to do the old way and easy to do the new way?
- Assessment of workload – what impact is the change having on staff workload?

It is important that your team create and agree to a sustainability plan.

A worksheet to help you plan for sustainability can be found in **Appendix 12**.

SPREAD

11.   Spread to other areas of your health service

Spread is when you actively disseminate your change idea to every available setting. Spread can be big or small – it might mean spreading your change to other wards within your hospital or it might be spreading your change to all the hospitals under your organisational banner.

Like sustainability, the earlier you think about spread the easier it will be. Think about spread from your very first change idea and PDSA cycle.

When should we spread?

You should be spreading your change idea when you have successfully made an improvement and the improvement is relatively self-sufficient. Further, it is important that your improvement fits in with your organisational initiatives.

Solid leadership from executive and 'frontline' staff is essential.

There are three key concepts to consider when you plan for spread:

- Laying the foundation for spread – ensure hospital executives are championing your change and are sharing your successes.
- Developing an initial plan for spread.
  - Establish a spread aim – who do you want to spread to and by when?
  - Governance – who will oversee the day-to-day spread?
  - Develop a communication plan – how are you going to inform and educate people on the change?
  - Build a measurement plan – how will you know if the change is being adopted?
- Refining the plan – be willing to alter your original spread plan based on staff feedback.

SJOG Bendigo's top tip

Consistent messaging helps.

It is important that your team create and agree to a sustainability plan.

A worksheet to help you plan for spread can be found in **Appendix 13**.

References

1. Institute for Healthcare Improvement. 2020. Improving health and healthcare worldwide. Institute for Healthcare Improvement. www.ihi.org/
2. Safer Care Victoria 2017, 'Delivering high-quality healthcare: Victorian clinical governance framework', Victorian Government, Melbourne.
3. Australian Commission on Safety and Quality in Health Care (ACSQHC) 2017, 'National consensus statement: essential elements for recognising and responding to acute physiological deterioration', 2nd edn. ACSQHC, Sydney.

Appendix 1 – Health service project summaries

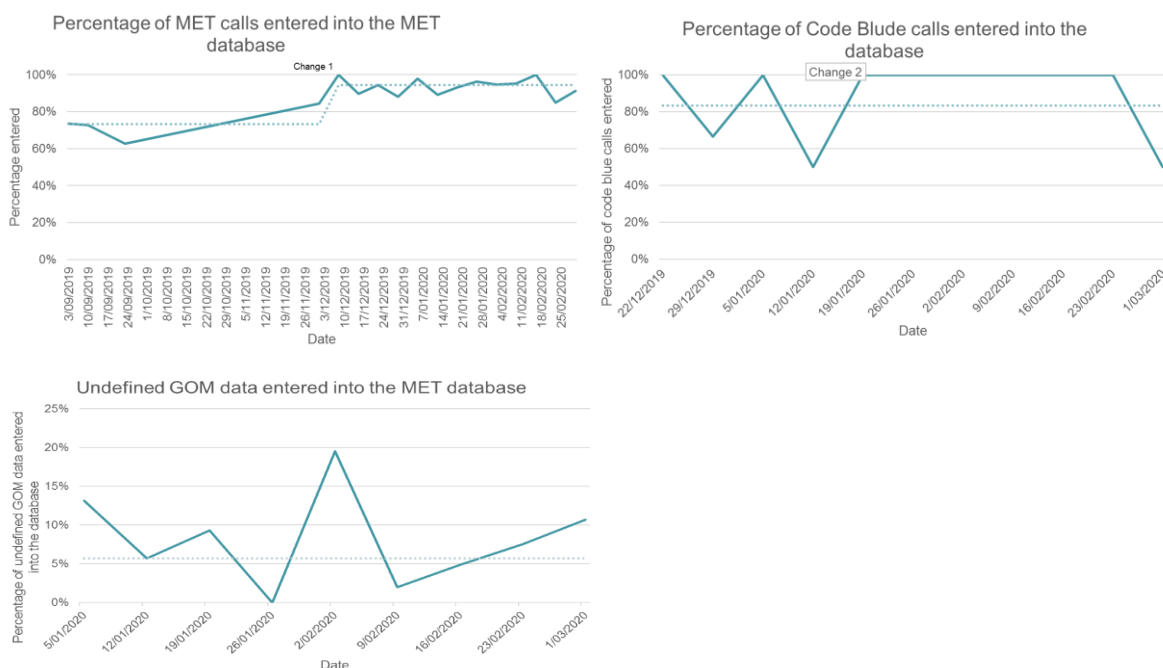## BARWON HEALTH – UNIVERSITY HOSPITAL GEELONG

Background: 60 per cent of rapid response calls were being captured in the local rapid response database. Therefore, data did not accurately reflect the service provided or patient deterioration demographics.

Aim: To improve data collection in the rapid response call database to >90 per cent for all rapid response activations.

Change ideas tested and implemented

- Engagement of ICU clinical nurse specialist staff to assist with rapid response, code blue and goals of care data collection.
- Minimisation of collection time by cleaning up data points.
- Feedback to clinical staff.

Results

Percentage of MET calls entered into the MET database

Percentage of Code Blude calls entered into the database

Undefined GOM data entered into the MET database

Sustainability and spread plan

- Regular distribution of data to staff via the staff communication book.
- Scheduling of regular rapid response audits.
- Continue to provide staff feedback.
- Use the data to promote the service provided by the rapid response team.

For more information contact: Donna Robertson, Nurse Unit Manger ICU, donna.robertson@barwonhealth.org.au

BENALLA HEALTH

Background: As there is no public announcement system at Benalla Health, the current alert system involves activation of an 'emergency' call buzzer for all levels of deterioration. Therefore, the current alert system cannot differentiate between a code blue and a rapid response call. This results in a large/unnecessary amount of staff presenting to all levels of deterioration and general practitioners being called away from their clinics inappropriately.

Aim: To decrease the urgent care centre 'emergency buzzer' alert by 20 per cent by June 2020.

Due to the high-risk nature of the change ideas, the team successfully conducted multiple simulation sessions to test the feasibility of their 'new way' of activating a rapid response call before testing began in the clinical area.

Change ideas tested

- Telephone activation for rapid response calls.
- Increase support from local nurse unit managers and hospital coordinators.
- Clarity of roles and responsibilities for the rapid response team.
- Greater liaising with the on-call GPs.
- Regular rapid response education sessions using simulation.

Results

- Introduction and standardisation of new rapid response call activation via a phone call. Code blue activation remains via the emergency buzzer.
- Members of the rapid response team are identified each shift and are given clear roles and responsibilities – no longer large numbers of staff attending each rapid response call.
- Clear guidelines have been introduced for handover of the deterioration to the GP.
- Every Tuesday morning the health service conduct an in-situ rapid response simulation, rotating staff each time so that everyone gets experience.

Number of UCC emergency buzzer activations

Anecdotally there has been a significant increase in staff satisfaction and engagement with both the rapid response system and the health service.

Spread plan: The team plans to fully implement the new rapid response system into the urgent care centre and across all other areas of their health service.

Sustainability plan: The team plans to standardise documents and policies to reflect the change. Weekly simulations will continue every Tuesday and expand to include other personal.

For more information contact: Cara Hammond, After hours hospital coordinator, cara.hammod@benallahealth.org.au
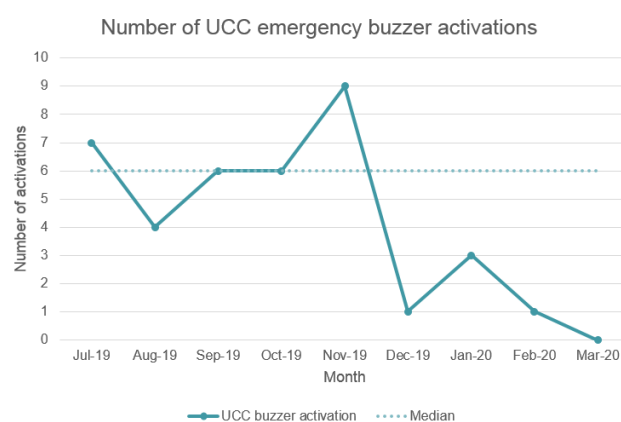
EPWORTH RICHMOND

Background: Epworth Richmond was having upward of 4000 rapid response calls per year. On top of this approximately 30 per cent of patients had a repeat rapid response call within 24 hours of their previous call. It was noted that there were high numbers of calls to non-critically ill patients. Further, Epworth Richmond did not have the optimal internal recognition and response system governance structure to help review data and identify areas for improvement.

Aim: To decrease repeat rapid response calls by 10 per cent by June 2020.

Change ideas tested

- Establishment of a local recognition and response governance group.
- Use of a NEWS2 score to triage ICU registrar attendance at rapid response calls.
- Development of a glucose management protocol/pathway.

Results

Analysis of local data identified a NEWS2 score of 7 as the best score for identifying critically ill patients requiring ICU registrar review.
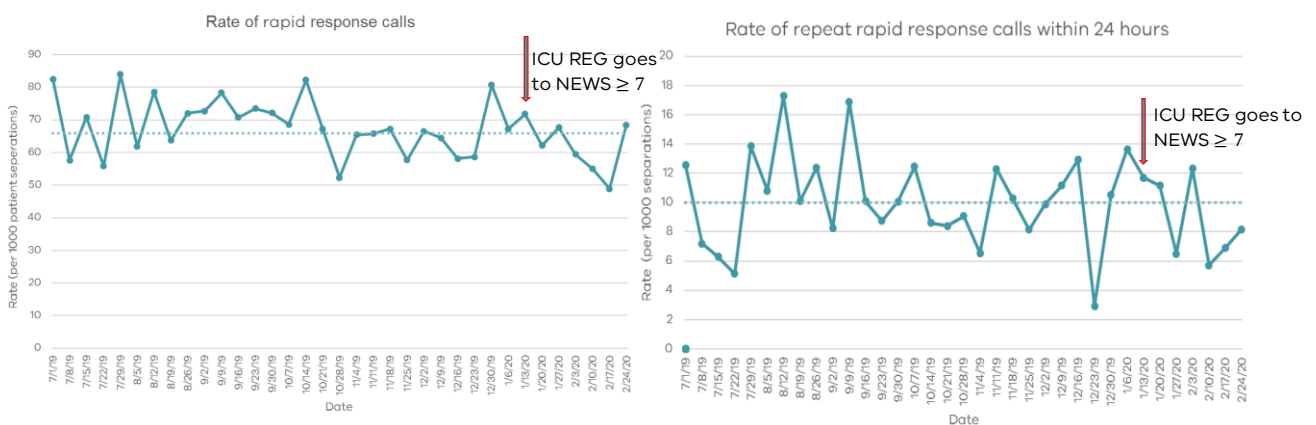
Further, the team has introduced a new recognition and response system governance structure, including a recognition and response system working group which meets on a regular basis. This group is made up of key stakeholders and includes consumer representation.

Anecdotally the team feels the changes have improved their rapid response system, and will continue to monitor the data to see if this matches their anecdotal evidence.

The team is currently testing the glucose management protocol/pathway. They have had great engagement with the endocrinologist and the Epworth medical institute.

Sustainability and spread plan

The team plans to continue with the new recognition and response working group. They have gained support with Epworth executive to sustain the improvement momentum and continue with recognition and response system improvement projects.

For more information contact: Laven Padayachee, Senior Intensivist, laven.padayachee@epworth.org.au

LATROBE REGIONAL HOSPITAL

Background: Patients and next of kin had highlighted that out of hours next of kin (NOK) notification processes at Latrobe Regional Hospital were inconsistent and this was leading to increased levels of distress. An audit of out-of-hours rapid response calls identified that 56 per cent of NOKs were not notified post a rapid response call.

Aim: To achieve 100 per cent of NOK notifications after rapid response calls where a significant treatment change has occurred.

Change ideas investigated and tested

- Undertake a consumer interview to understand the essentials for NOK notification.
- Understand the barriers to NOK notification.
- Have the nurse-in-charge prompt the medical staff to notify NOK and document their notification.

Results

NOK notification for out of hours MET calls

Consumer interview results

Question	Answer
When to notify?	As soon as practical both in and out of hours.
Who should notify?	Either the patient's nurse, nurse-in-charge, the patient's doctor or the rapid response doctor.
What information do you want?	- The cause of the emergency. - Treatments that have been given. - Outcome of the treatments. - Any changes to the patients care/treatment plan.

Barriers identified and worked through included notification policy not being up to date with current practice and issues with documentation of NOK details in the health service IT systems.

Anecdotally having the nurse-in-charge prompt NOK notifications is working well.

Next steps: The team plans to repeat the NOK notification audit and use the consumer interview results to form a notification guideline/prompt for staff.

Spread and sustainability plan

- Implement the new notification process into other areas of the hospital.
- Ongoing audits every six months until consistent positive results.
- Discuss and review results at the bimonthly recognition and response meetings.

For more information contact: Belinda Ellis, ICU Liaison Nurse, Bellis@lrh.com.au
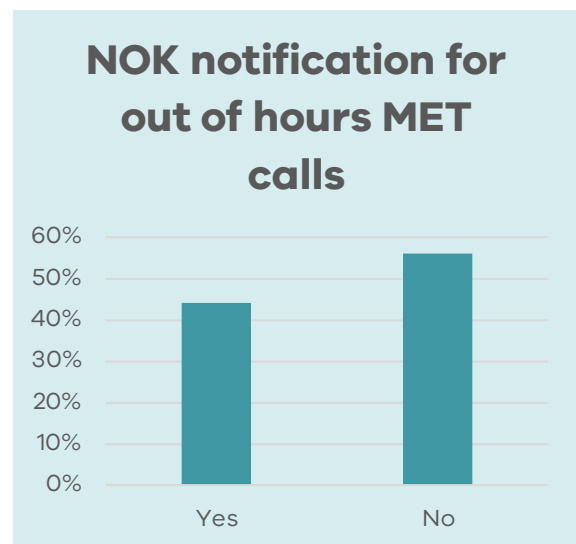
NORTHEAST HEALTH WANGARATTA

Background: It was noted that 11 per cent of patients at Northeast Health Wangaratta (NHW) have a repeat rapid response call (known as ReMET at NHW) within 24 hours of their previous rapid response call. NHW currently have a robust rapid response system but no liaison service.

Aim: To reduce the number of patients that 'ReMET' within a 24-hour period by 20% by June 2020.

Change ideas investigated and tested

- Understand nursing staff perception of rapid response calls and the support they receive.
- Nursing staff to prompt medical staff to document a patient review time at each rapid response call.
- Use a critical care staff member to review patients within 24 hours of their rapid response call.

Results

Staff survey results
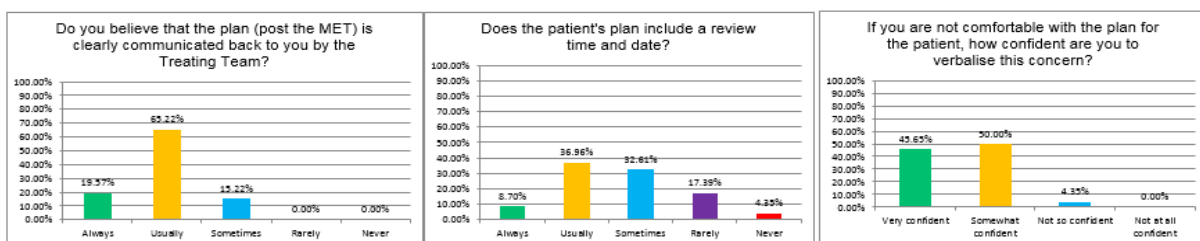
Results showed there was no consistency in patient reviews and that prompting medical staff for review plans provided inconsistent results, so this change idea was abandoned.

Collection of data to assess the impact of using a critical care nurse to review the patient 24 hours post rapid response call is ongoing.
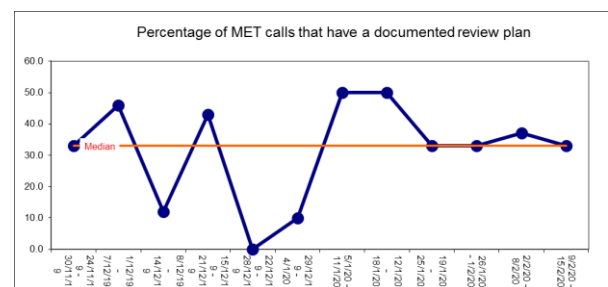
Next steps: The team plans to continue to monitor the use of the critical care nurse to review patients within 24 hours post rapid response call. If successful, the team hopes to implement a formal critical care liaison service.

Sustainability plan: Ongoing monitoring of the recognition and response system by the standard 8 lead.

For more information contact:

Paul Jones

Standard 8 lead

paul.jones@nhw.org.au

Kym Loechel

Improvement and Innovation Advisor

kym.loechel@nhw.org.au

SOUTH WEST HEALTHCARE – WARRNAMBOOL

Background: It was noted that only 50 per cent of the hospitals rapid response calls were being captured in their local rapid response database. Subsequently a significant amount of data was not being collected, measured or analysed, resulting in missed clinical opportunities for improvements to prevent or reduce rapid response calls.

Aim: To improve the compliance of rapid response call reporting to 80 per cent and above, while also aiming to enhance the quality and accuracy of the rapid response database.

Change ideas investigated and tested

- Identify barriers that prevent staff from completing the rapid response scribe form.
- Refine the current rapid response scribe form to make it easier to collect data.
- Refine the process of who is responsible and how data is entered.

Results

- Barriers were not what the project team first thought – staff were completing the rapid response scribe form but were not sure what to do with the form after the rapid response.
- Based on staff feedback only minimal changes needed to be made to the rapid response scribe form.
- New rapid response scribe form to be tested (see below).

Next steps: The team plan to refine the process of who collects the scribe form at the end of the rapid response call and who enters the data to the local rapid response database.
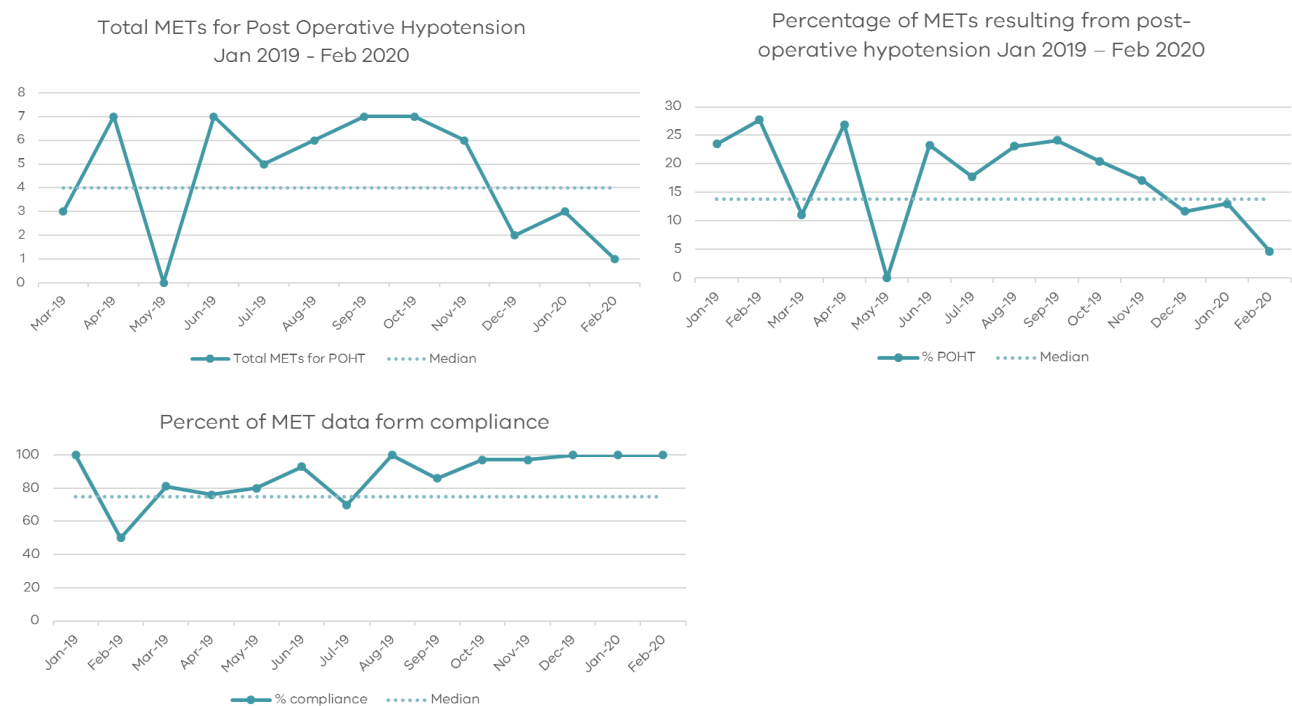
ST JOHN OF GOD BENDIGO

Background: The team identified that post-operative hypotension has consistently been highlighted as an area for improvement. Further, in the past 12 months there was a 35 per cent increase in post-operative hypotension rapid response calls. Previous attempts in making change in this area have not resulted in improvement.

Aim: To reduce post-operative hypotension in the orthopaedic cohort by 20 per cent by June 2020.

Change ideas tested

- Review and refine data collection form to improve completion and data collection (determine must have information and condense form from three sides to one).
- Formulate a letter and survey to VMOs to establish expectation of notification of MET calls and data.
- Establish a process of regular (monthly) feedback of MET calls for orthopaedic VMOs.
- Establish a framework of effective communication between nurses and VMOs.

Results

Total METs for Post Operative Hypotension
Jan 2019 - Feb 2020

Percentage of METs resulting from post-operative hypotension Jan 2019 – Feb 2020

Percent of MET data form compliance

Sustainability and spread plan

- Continue to monitor progress and data.
- Continue to work with key stakeholders to improve communication and processes.

For more information contact:

Penny Spencer

Nurse Unit Manager, ICU

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Nicole Crameri

ICU Liaison / Associate Nurse Unit Manager, ICU

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Appendix 2 – Process map worksheet adapted from the Institute for Healthcare Improvement[1]

To complete a process map you should:

1. gather key people – those who know the process best

2. identify the first and last step in the process

3. use the shapes below to step out your process – map out how it actually works **not** how it should work

    - **Tip**– use post-it notes to map the steps so you can easily move them around

    - **Note** – steps can occur in parallel

    - **Note** – you may have multiple end points

4. review the process map and check for accuracy

5. identify areas that could be improved within the process.

Key

Indicates the start and end of a process
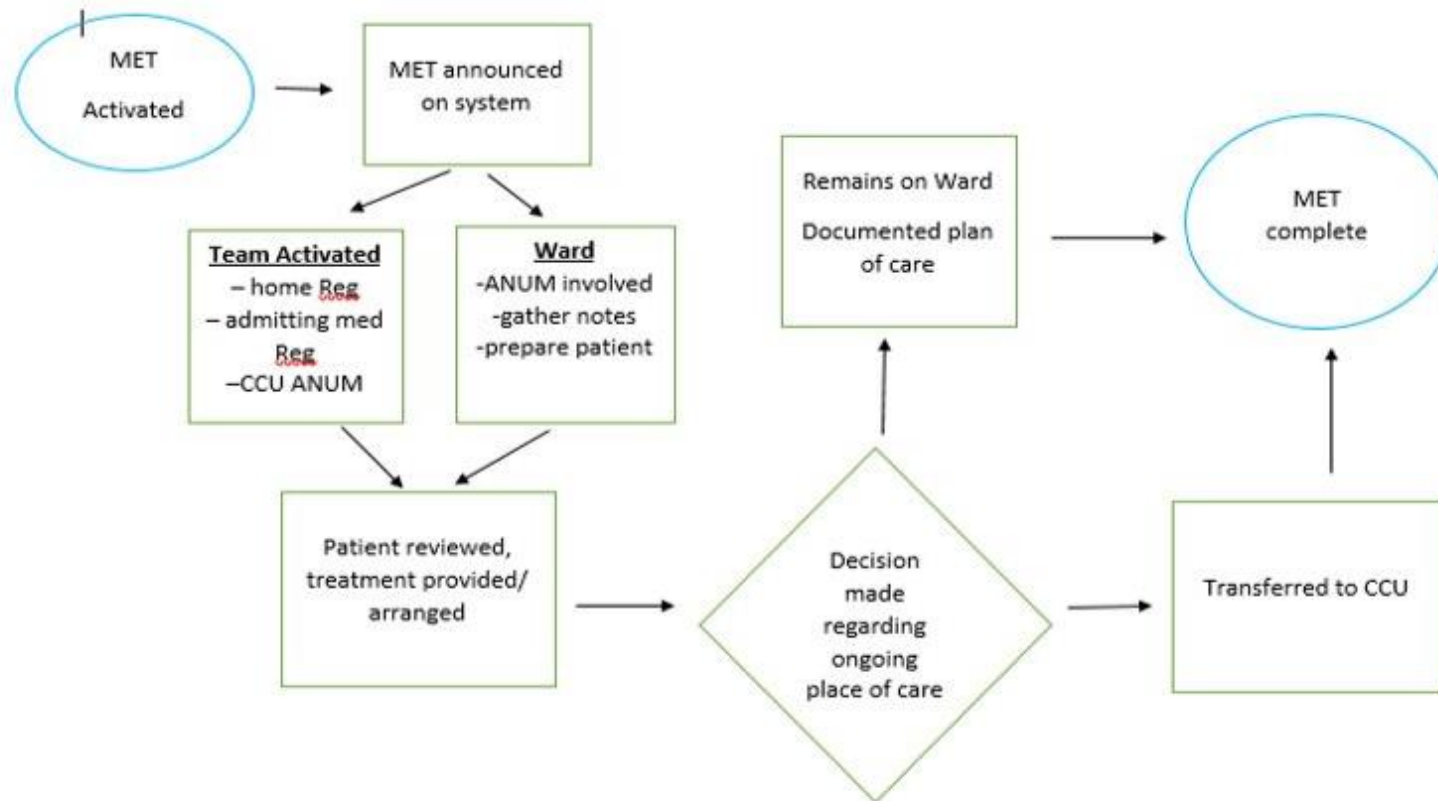
Indicates an activity, task or step in the process

Indicates a decision point (yes/no question)

Indicates the direction of flow

Appendix 3 – Example of a process map

NORTHEAST HEALTH WANGARATTA – PROCESS MAP

Appendix 4 – Aim statement worksheet Adapted from the institute for healthcare improvement[1]

Use the prompts below to write an effective aim statement. Then use the checklist to double-check your work.
What? What's the problem or opportunity?
e.g. decrease the rate of repeat rapid response calls
How much? By how much will you improve? Or 'how good' do you want to get?
e.g. 20% decrease
By when? What is the date by which you will achieve the level of improvement you have set out to accomplish?
e.g. June 2020
For whom? Who is the population who will benefit from this improvement?
e.g. the whole rapid response patient population
Where? What are the boundaries of the process or system you are trying to improve? Where does it begin and end?
e.g. across Victoria
Complete aim statement
e.g. Our aim is to decrease repeat rapid response calls, across Victoria, by 20%, by June 2020.
Ask a colleague to double check your work and recommend improvements
☐   Is the problem clearly stated? ☐   Do you know what the team is going to do about the problem? ☐   Has the team set a numerical goal to quantify the amount of improvement they'd like to achieve? ☐   Do you know the calendar date by which the team plans to achieve the goal? ☐   Is it clear who will benefit from the improvement? ☐   Is the scope of the project clear?

Appendix 5 – Example project measures

OUTCOME MEASURES

Rate of repeat rapid response calls

Operational definition	The rate of patients who experience a second or subsequent rapid response call within 24 hours of their last call. The rapid response call may be for the same or different criteria/reason
Numerator	Number of admitted patients who experience a repeat rapid response call
Denominator	Number of patient separations

Percentage of code blue calls entered into the database

Operational definition	The percentage of code blue calls within the hospital that are entered into the local recognition and response system database
Numerator	Number of code blue calls entered into the database
Denominator	Total number of code blues

Percentage of rapid response calls entered into the database

Operational definition	The percentage of rapid response calls within the hospital that are entered into the local recognition and response system database
Numerator	Number of rapid response calls entered into the database
Denominator	Total number of rapid response calls

PROCESS MEASURES

Percentage of goals of care completed on admission

Operational definition	The percentage of admitted patients (who are ≥ 65 years of age and experience a rapid response call) that had a goals of care completed on admission
Numerator	Number of patients who meet the above criteria and have a goals of care completed on admission
Denominator	Total number of rapid response calls

Percentage of goals of care change as a result of a rapid response call

Operational definition	The percentage of admitted patients (who are ≥ 65 years of age and experience a rapid response call) that have a goals of care change as a result of a rapid response call
Numerator	Number of admitted patients who experience a repeat rapid response call
Denominator	Total number of rapid response calls

Percentage of attendance by an attending clinician/team member at a rapid response call

Operational definition	The percentage of times an attending clinician or team attend their patient's rapid response call. Attending clinician or team meaning the primary care team who has responsibility for the patient
Numerator	Number of times an attending clinician/team attend their patient's rapid response call
Denominator	Total number of rapid response calls

Percentage of patients reviewed within 24 hours of their rapid response call

Operational definition	The percentage of times a patient is reviewed within 24 hours of experiencing a rapid response call by a critical care nurse (or equivalent)
Numerator	Number of patients reviewed within 24 hours of their rapid response call
Denominator	Total number of rapid response calls

BALANCING MEASURES

Rate of code blue calls

Operational definition	The rate of code blue calls within the health service. This should include all types of code blues including 'true' and 'not true' code blues
Numerator	Total number of code blue calls within the health service
Denominator	Number of patient separations

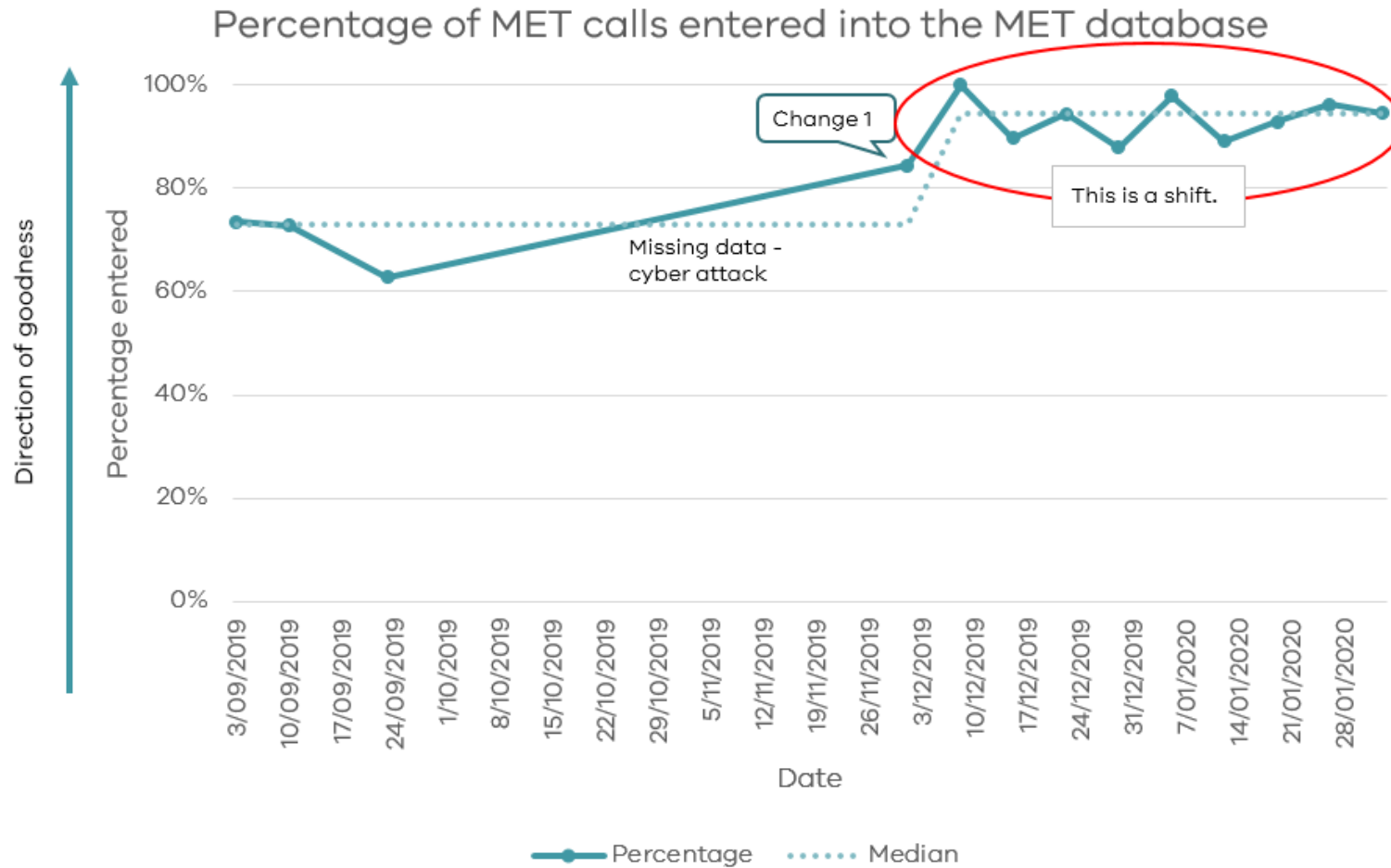### Rate of rapid response calls

Operational definition	The rate of rapid response calls within the health service
Numerator	Total number of rapid response calls within the health service
Denominator	Number of patient separations

Rate of rapid response calls in the urgent care setting

Operational definition	The rate rapid response calls that are called within the urgent care centre setting
Numerator	Total number of rapid response calls within the urgent care centre
Denominator	Total number of patients seen in the urgent care centre

Appendix 6 – Example of a run chart

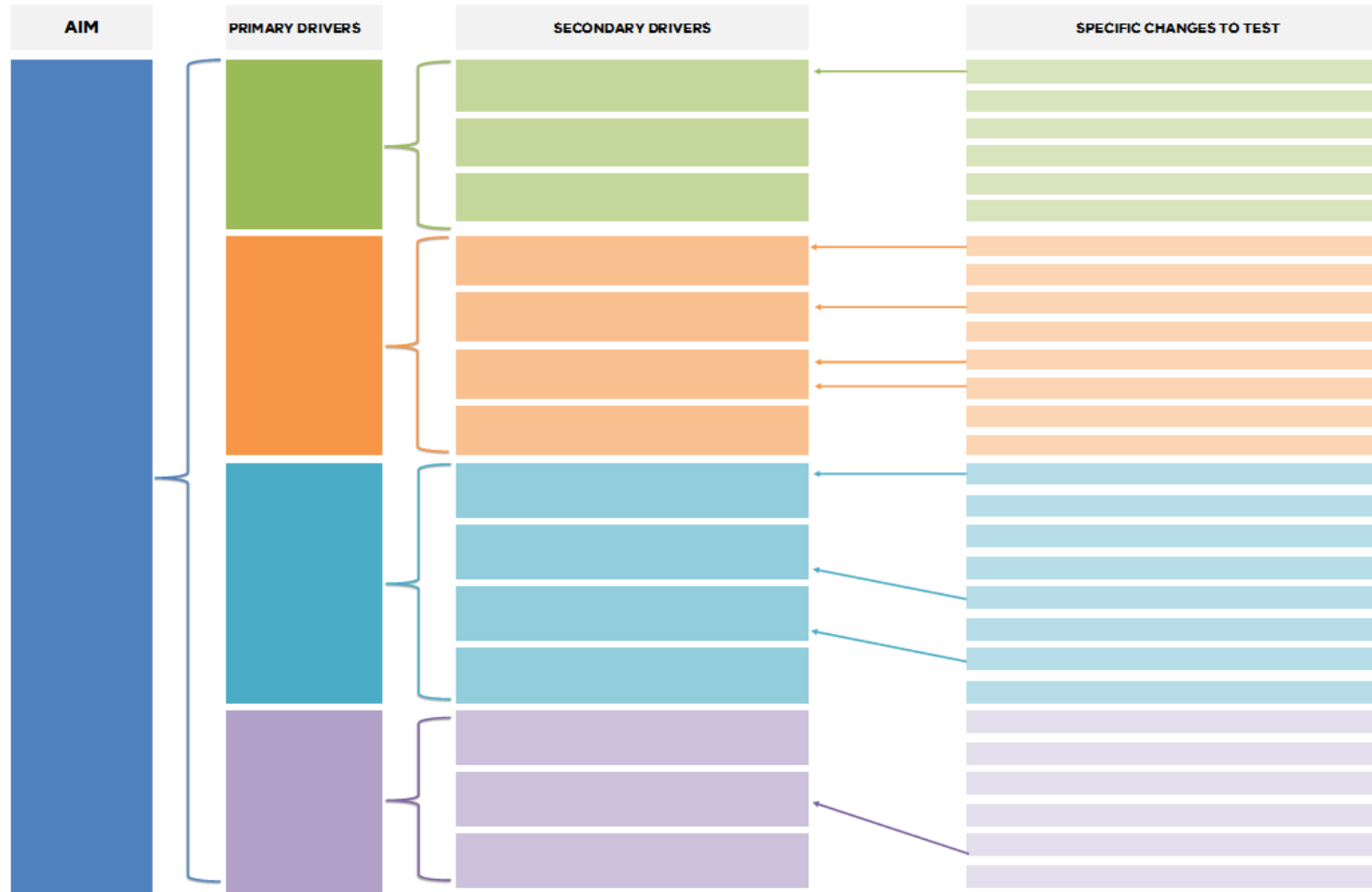**BARWON HEALTH – UNIVERSITY HOSPITAL OF GEELONG – RUN CHART**

Percentage of MET calls entered into the MET database

Appendix 7 – Examples of change ideas

Pre RRS call
- Refined the rapid response system in a health service without a critical care unit
- Developed a rapid response call notification system in a health service without a PA system
- Developed blood glucose management pathways to help decrease repeat rapid response calls

During RRS call
- Defined rapid response team roles and responsibilities
- Refined the rapid response call form
- Used the NEWS 2 score to triage ICU registrar involvement in the rapid response call

Post RRS call
- Refined the role for entering rapid response, code blue and goals of care data into the rapid response database
- Refined rapid response call data collected
- Used data to identify patient population groups that have high rates of repeat rapid response calls
- Developed reports to feedback rapid response call data to care teams
- Defined roles and responsbility for critical care nurse follow up post rapid response call
- Refined next of kin notifiction process post rapid response call

Appendix 8 – Driver diagram template

Driver Diagram [insert project name]

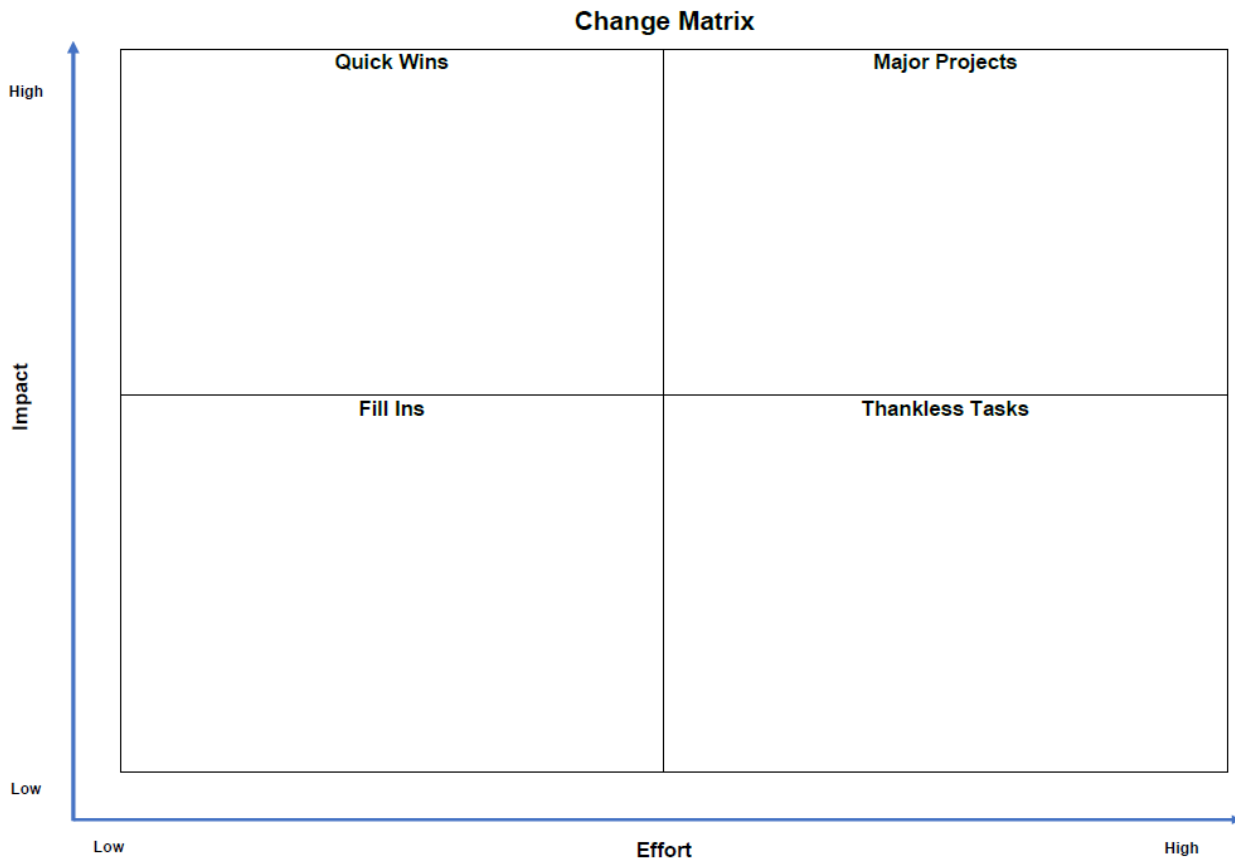| AIM	PRIMARY DRIVERS	SECONDARY DRIVERS	SPECIFIC CHANGES TO TEST

Appendix 9 – example of a driver diagram

SJOG BENDIGO

Aim	Keys to Valued Care – Primary Drivers	Secondary Drivers	Change ideas
Reduce number of patients requiring a MET call (20%) within 24 hours post operatively due to hypotension by 30 June 2020	Effective Care	Efficacy of MET call system	Review of policy against best practice guidelines
		Clinical assessment	Roll out trial educator workshops as business as usual on recognising and responding to patient deterioration Workshops include clinical assessment
		Learning from experience	Review current reports and method of feedback on analysis of data to caregivers, VMOs and executive
		Leadership engagement	Establish strategies to achieve strong leadership engagement – utilising committee framework Provide clarity of roles and responsibilities at all levels of leadership
	Available Care	The collection of data is seen as an essential part of business	Designated resources available for data collection (WHPPDv permanent hours [i.e. always occurs], sufficient resources to cover leave) Training needs for data collection caregivers Review / revise data collection form Investigate available databases (JF) Network with other organisations on the collection and use of Met call data
	Safe Care	Pre-operative management	Determine baseline - meet with Preadmission Clinic to understand current process Investigate need for further pre-operative assessment tool Review Hb Establish standard process for documentation of intervention (including appropriate ICU referral)
		Intraoperative Management	Determine baseline – meet with Anaesthetic ANUM Attend Anaesthetist meeting – organise with KS
		Post-operative Management	Investigate need for post-operative assessment tool
		Review of current medication	Determine baseline – meet with CURA to understand CURA role at Pre Admission Clinic
	Inclusive Care	Awareness of MET calls	Formulate a letter and survey that outlines plan and surveys VMOs to establish expectation of notification of MET calls
		Feedback to VMOs	Establish a process of regular (monthly) notification of MET calls for VMO (colorectal & orthopaedic)
		Nurse to VMO communication	Establish a framework of effective communication between nurses and VMO

Appendix 10 – Change Matrix template

Change Matrix

Quick Wins		**Major Projects**	
Fill Ins		**Thankless Tasks**	

Impact (High / Low) — vertical axis

Effort (Low / High) — horizontal axis

Appendix 11 – PDSA cycle worksheet

Plan-Do-Study-Act Record

Date:

	Change Idea to test or implement
	Which change idea from the change package are you testing?

PLAN

Questions: What do we want to know?

Predictions: What do we think will happen?

Plan for Change or Test: who, what, when, where. What are we going to do to make our test happen?

List the tasks necessary to complete this test (what)	Person responsible	When	Where
1.			
2.			
3.			
4.			

Plan for Collection of Data: who, what, when, where. How will we compare predictions to actual?

DO: carry out the change or test; collect data and begin analysis; describe the test

STUDY: complete the analysis of data; summarize what was learned.

ACT: are we ready to make a change? Plan for the next cycle. (adapt, adopt, abandon)

Appendix 12 – Sustainability WORKSHEET ADAPTED from the institute for healthcare improvement[1]

What	Details	Frequency	Key contact
Measurement			
What are we going to continue to measure?			
What are we going to stop measuring?			
How will we continue monitoring?			
What is our 'red flag'? (the point where you escalate if you are not meeting your sustainability goal)			
What is our escalation ('red flag') plan?			
Ownership			
Who will 'own' the new standard work? • Measure and monitor • Assure standard work • Manage staff • Escalate and address			
Are they engaged and onboard with our improvement work?			
Communication and training			
How will we communicate about this work?			
Who will be the messengers?			
How will we support individuals in the 'new right way'?			
What type of training is required?			

What	Details	Frequency	Key contact
Hardwire the change and tend to infrastructure			
How will we make it hard to do the wrong thing and easy to do the right thing?			
How will we standardise?			
Can we reduce reliance on human memory?			
What needs to be changed with regards to documentation?			
Do we have all the infrastructure and resources needed?			
Assessment of workload			
Are the changes increasing the overall workload to the system?			
What can we integrate into 'normal work'?			
Can other people assist with tasks?			
What can we stop, start and alter?			

Appendix 13 – Spread worksheet Adapted from the institute for healthcare improvement[1]

ESTABLISH AN AIM
What do you intend to spread?
What is the target? Identify specific and measurable goals (outcome or process measures)
Who is the target population (i.e. acute ward, whole hospital)? Include the number and location of departments, units or hospitals you intend to reach.
What is your timeframe?

GOVERNANCE
Who will be your executive sponsor?
Who will lead the day-to-day spread? Consider a multidisciplinary team.

COMMUNICATION
What methods or channels will you use to communicate the plan for spread?

What results and stories from your initial improvement project or pilot will you use to educate and motivate staff?
Will you have to alter your communication or education for different target audiences?
How will adopters be supported (i.e. by previous project members) and how will they receive feedback about progress?
MEASUREMENT
Who is responsible for tracking and measuring outcomes?
How often will you measure progress?