# Understand Stage Guide

Summary

This guide provides a brief description of the application of a systems approach to the understand stage of health and care design and continuous improvement.

Contents

- Introduction
- Improvement Canvas
- Stakeholder Influence
- Stakeholder Needs
- Systems Boundaries
- Rich Picture
- Design Themes
- Persona Descriptions
- Stage Plan
- Stage Outputs

Introduction

This guide is part of the University of Cambridge **Improving Improvement Toolkit**, which develops the approach presented in the Royal Academy of Engineering report titled "**Engineering Better Care** – a systems approach to health and care design and continuous improvement".
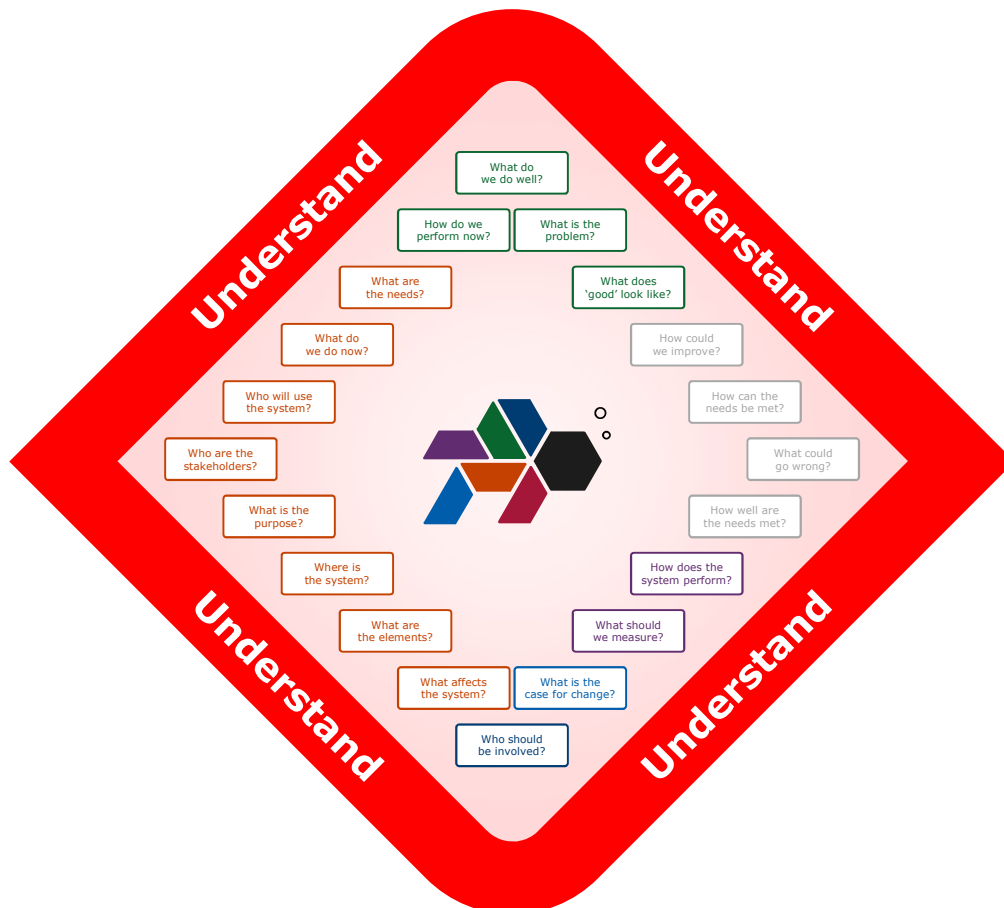

Engineers routinely use a systems approach to address challenging problems in complex projects. This allows them to work through the implications of each change or decision they make for the project as a whole. They consider the layout of the system, defining all the elements and interconnections, to ensure that the whole system performs as required.

"Systems that work do not just happen — they have to be planned, designed and built"

This particular guide assists in the definition, visualisation, planning and execution of the **Understand Stage** of the Improvement Programme. The questions and activities highlighted here provide a minimum suggested set for the stage and may be supplemented with other familiar activities.

Introduction

The following steps, described in more detail below, describe possible elements of a systems-based approach for planning the **Understand Stage** of an improvement process — leading to a description of the current system (now), a common understanding of the problem, a consensus view of what the future system might look like (better) and a clearly articulated case for changing the system.
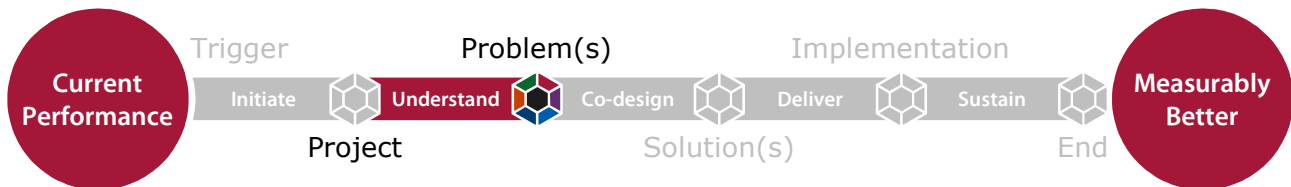
(1) **Improvement Canvas** – Describe the context and nature of the challenge and current ideas for improvement and measurement.

Agree the scope of the proposed improvement or decision-making process and identify the team required to deliver it.

(2) **Stakeholder Influence** – Identify key stakeholders, their interest in the system and potential to influence the outcome of the process.

(3) **Stakeholder Needs** – List the full range of stakeholders' essential needs and their particular reasons for these needs.

(4) **System Boundaries** – Highlight the extent of the systems of interest and influence relating to the scope of the proposed improvement.

(5) **Rich Picture** – Sketch details of the systems of interest and influence specifically relating to the scope of the proposed improvement.

(6) **Design Themes** – Translate the essential needs into key design themes and a prioritised, clearly articulated set of design requirements.

(7) **Persona Descriptions** – Co-design a representative set of personas to capture and characterise key users and/or stakeholders.

(8) **Stage Plan** – Define the outputs or outcomes required for the each of the strands of the improvement or decision-making process.

Select the activities and tools required to deliver these outputs and the critical dependencies between them.
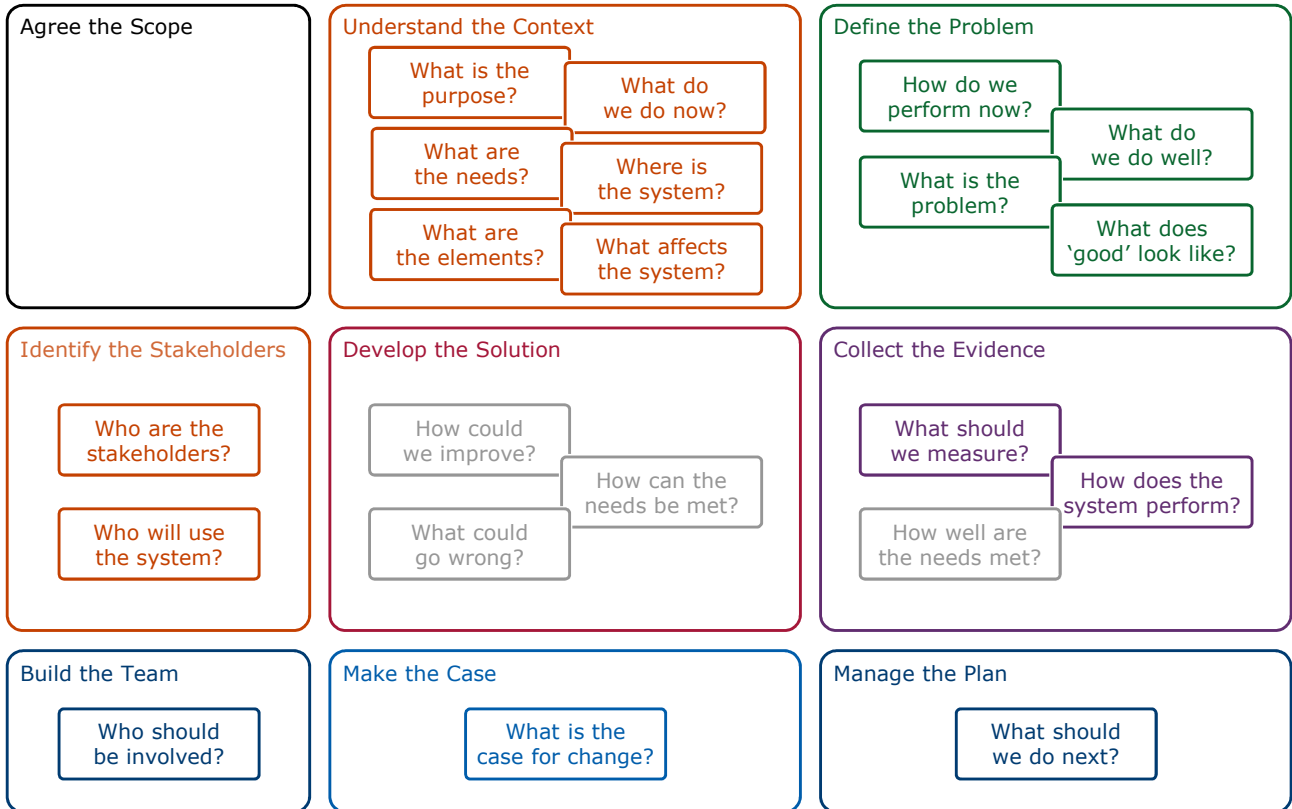
There is particular value is completing a preliminary Improvement Canvas and draft Stage Plan early in the stage to facilitate the building of an appropriate team for this and/or subsequent stages. Individual outputs for this stage can be recorded at the end of the guide and may then provide the basis for a stage-gate review.

Useful toolkit resources: printable PDFs for all of the **Stage Guides** are included in the **Stage guide PDFs** part of the **Resources** section.

Improvement Canvas

Use the **Improvement Canvas Poster** to investigate the team's current knowledge about the system and agree the scope of the change required.

Agree the Scope	Understand the Context	Define the Problem
	What is the purpose? — What do we do now?	How do we perform now? — What do we do well?
	What are the needs? — Where is the system?	What is the problem? — What does 'good' look like?
	What are the elements? — What affects the system?	

Identify the Stakeholders	Develop the Solution	Collect the Evidence
Who are the stakeholders?	How could we improve? — How can the needs be met?	What should we measure? — How does the system perform?
Who will use the system?	What could go wrong?	How well are the needs met?

Build the Team	Make the Case	Manage the Plan
Who should be involved?	What is the case for change?	What should we do next?

A clear articulation of the scope helps to define the boundary between what is in and what is out of the system of interest. It also reflects the prioritised needs of the stakeholders that should drive any improvement. The scope will also be influenced by the context of the system, primary focus of the challenge, core themes of possible solutions and level of detail required to describe the system and its stakeholders.

At the beginning of each stage of the improvement programme it is important to reaffirm the content of the canvas and scope of the challenge. This helps to define the gap between what is known at the start of the stage, the needs to be met by the end of the stage, and the plan to move between them.

The questions of particular interest to the **Understand Stage** of the Improvement Programme are highlighted in colour above.

Improvement Canvas

Use the **Improvement Canvas Worksheet** to describe the team's current knowledge about the system and agree the scope of the change required.

Agree the Scope	Understand the Context	Define the Problem
Identify the Stakeholders	**Develop the Solution**	**Collect the Evidence**
Build the Team	**Make the Case**	**Manage the Plan**

The canvas may be completed in any order, with input from the stakeholder influence and stakeholder needs worksheets informing the stakeholder and team boxes, from the system boundaries and rich picture understanding the context, and from the design themes and persona descriptions defining the problem.

All entries are important in capturing the team's current knowledge about the challenge, and in determining a sensible starting point and scope of interest for improvement. Ideas of solutions inspire a deeper understanding of the problem, and evident may provide context or evaluation of existing solutions.

The case for support provides a rational for stakeholders to support the proposed change, while the plan and team describe the necessary resource and steps required to deliver the change.

Stakeholder Influence

Use the **Stakeholder Influence** worksheet to identify key system stakeholders' interest and influence.

Low Interest and High Influence (satisfy)	High Interest and High Influence (manage)

Low Interest and Low Influence (monitor)	High Interest and Low Influence (inform)

Successful improvement depends on a wide range of stakeholders and system users who, at any point in time, will have different levels of interest in and power to influence such improvement. They will bring a range of perspectives to any programme and through their action or inaction can enable, actively encourage or frustrate progress.

There is value in characterising stakeholders, in terms of their interest and power, to ensure that they are sufficiently informed, engaged or managed at all stages of an improvement programme. Understanding them and their relative importance is an essential element of managing change.

Use the worksheet to remind the team of the stakeholders related to the improvement process, to capture the particular needs of the individual stakeholders, and to highlight the range and diversity of stakeholder needs.

Stakeholder Needs

Use the **Stakeholder Needs** worksheet to list the system stakeholders' needs and reasons for those needs.

| As a …	… I need …	… so that …

Stakeholders are defined by their role, needs and reasons for those needs. It is useful to capture this information in the form " As a … … I need … … so that … " where these statements provide insights into needs and the rationale for them.

Stakeholders may have multiple and diverse needs and associated rationales, which provides the basis, with their interest and influence, for early conversations to prioritise these needs. Such needs may also vary with time and, therefore, in importance to other stakeholders over time.

Use the worksheet to remind the team of the stakeholders related to the improvement process, to highlight the range and diversity of potential stakeholders, and to accentuate the importance of understanding stakeholders needs.

System Boundaries

Use the **System Boundaries** worksheet to highlight the limit of the system of interest and the system of influence.

System of Interest

System of Influence

External factors
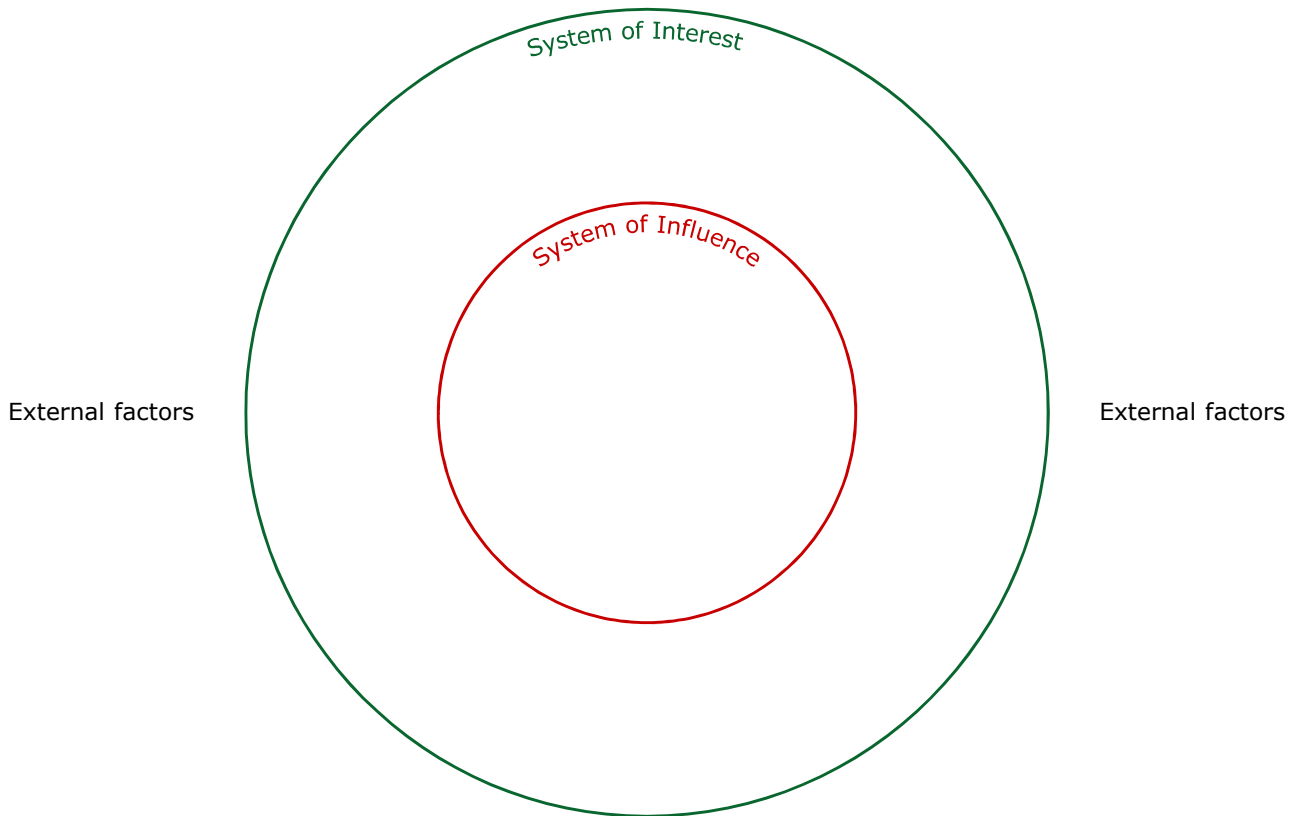
External factors

Understanding the context of the system to be improved is crucial, from the external factors to the system of interest to the system of influence. These boundaries define what is in and what is out, and are closely linked to the scope of the improvement programme and the stakeholders.

The system of interest defines the boundary of all that is important to the understanding, co-design, delivery and sustaining of change; whereas the system of influence defines the boundary of influence or control. Both may change, or need to be changed, with time.

Use the template to provide a summary of key system boundaries and external factors, to identify the wider system of interest for the improvement programme, and to highlight the [usually] smaller system of influence for the programme.

Rich Picture

Use the **Rich Picture** worksheet to sketch details of the system of interest, system of influence and external factors.

Elements of a Rich Picture

Symbols   Signs   Sketches   Icons   Keywords   Title

CANCER   ?

Rich Pictures are used to depict complicated situations in order to understand a problem by uncovering hidden beliefs, expectations and motivations.

Rich pictures were developed as part of Checkland's Soft Systems Methodology. They use drawings or pictures on a single piece of paper to capture a complex messy situation, and can depict people, objects, parts, systems, journeys and so on, along with structure, relationships, connections, influences, issues and arguments etc.

These pictures assist a team in capturing a common understanding of a system, its boundaries and characteristic and behaviours as a prior to improving or transforming the system into something measurably better.

Use the worksheet to capture images that represent multiple perspectives of the system, to visualise connections between the collected images of the system, and to understand the inherent and emergent behaviour of the system.

Design Themes

Use the **Design Themes** worksheet to translate the prioritised needs into agreed themes and system requirements.

Aim

Prioritised Needs

Agreed Themes

System Requirements
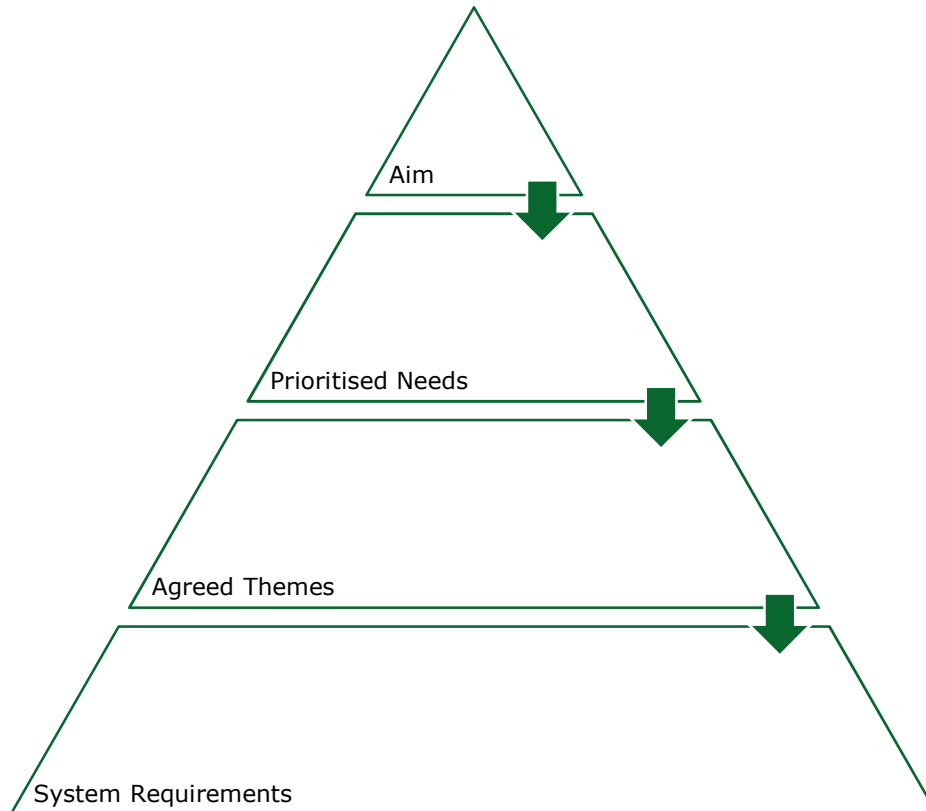
The delivery of an effective improvement process requires careful translation of the aim of the improvement into realisable system requirements. This is a complex, iterative process, critical to the success of the whole programme.

A clear aim should align with the existing or proposed purpose of the system and the desired improvement in quality to be delivered by the system. It should be expressed in terms of the prioritised needs it will satisfy and the agreed themes that represent the essence of the things the system must do. These can then be translated into the individual system requirements.

Use the worksheet to present the prioritised needs in the context of the programme aim, to highlight the agreed themes derived from the prioritised needs, and to summarise the systems requirements related to the agreed themes.

Persona Descriptions

Use the **Persona Descriptions** worksheet to co-design a set of personas representing patient groups and/or service providers.

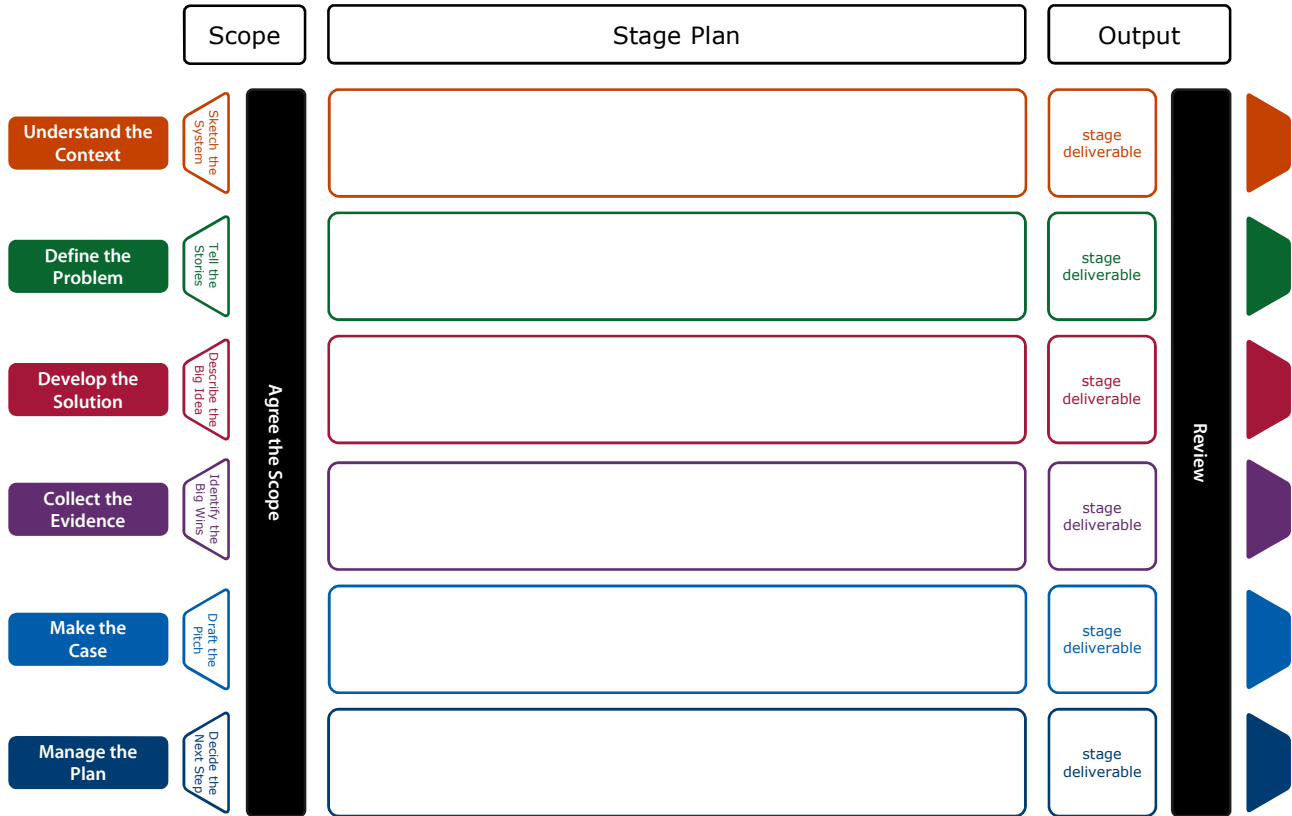|	
Picture	Picture
Picture	Picture
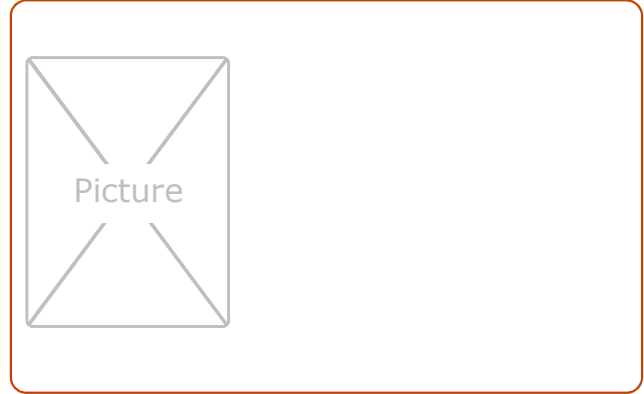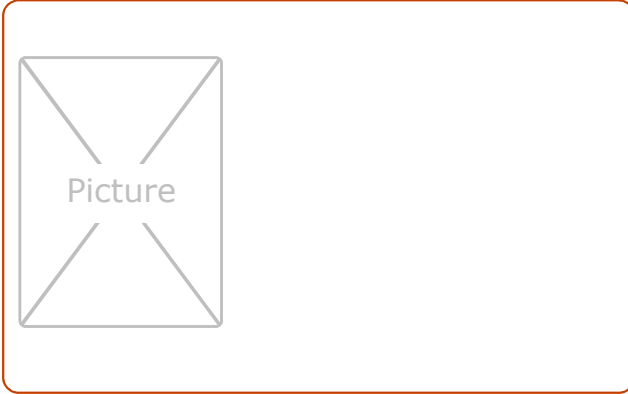
Personas are fictional characters which are created, based upon appropriate research, to represent the full range of different user types that might use a service, product, site or brand.

Personas can help a team to understand stakeholders' and users' needs, experiences, behaviours and goals. The process required to create them can also help the team to recognise that different people have different needs and expectations, and help them to better identify with the stakeholders and system users.

Use the worksheet to capture the diversity of people within a chosen stakeholder group, to identify the key characteristics that are should be recorded, and to provide a simple means to describe stakeholder diversity that matters.

Stage Plan

Use the **Stage Plan** worksheet to select the most important elements of the improvement process that are required to deliver the desired outputs.

Scope	Stage Plan	Output
Understand the Context — Sketch the System		stage deliverable
Define the Problem — Tell the Stories		stage deliverable
Develop the Solution — Describe the Big Idea		stage deliverable
Collect the Evidence — Identify the Big Wins		stage deliverable
Make the Case — Draft the Pitch		stage deliverable
Manage the Plan — Decide the Next Step		stage deliverable

Agree the Scope / *Review*

This model underpins the stage gates of an Improvement Programme, where progress is driven by clear objectives for each of the key elements at each stage of the programme.

The desired outputs or outcomes should be identified, based on the content of the Improvement Canvas for the **Understand Stage** of the Improvement Programme and the particular objectives of this stage.

The stage plan should identify the questions and activities that are required to achieve the specific understand stage deliverables. They are more likely to focus on understanding the context of the challenge and on defining the problem. Later stages will see a shift in focus to developing the solution and collecting the evidence. All stages should reflect the need to make the case and manage the plan.

Stage Plan

The [Questions Map](#) poster can be used to identify the key questions that would help to deliver the outputs required.
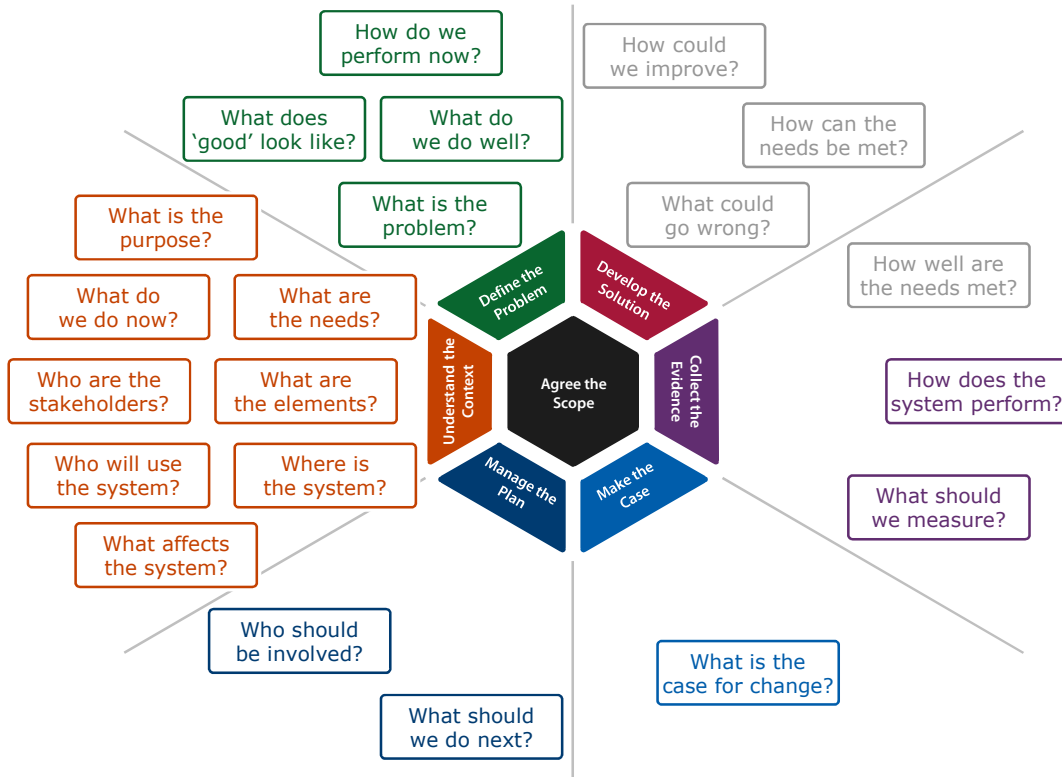
The [Stage Activities](#) poster can also be used to identify the improvement activities that would help deliver the outputs required.
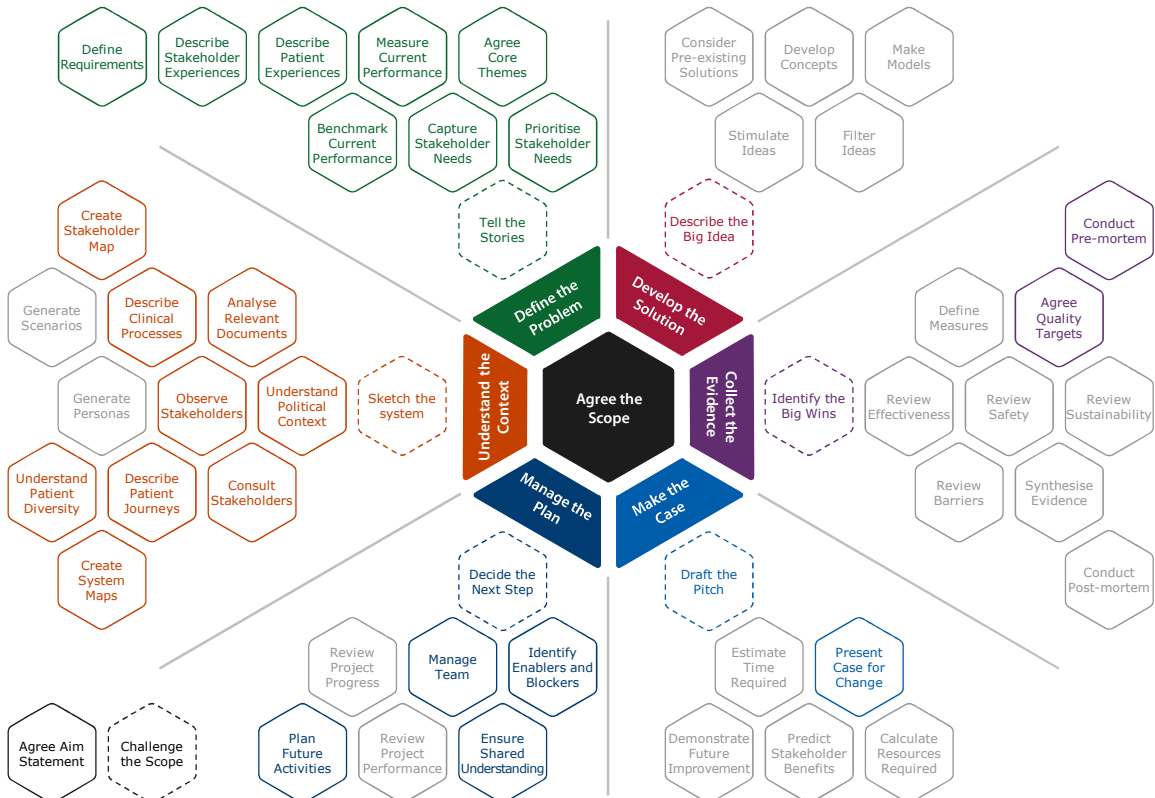
Stage Plan

A sample of possible **Activities** which may be added to the understand stage plan.
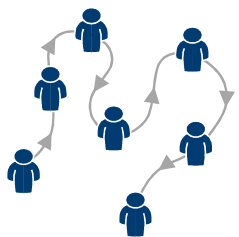
Create System Maps

Create a common view of the system, its elements, architecture and interfaces to other systems

Describe Clinical Processes
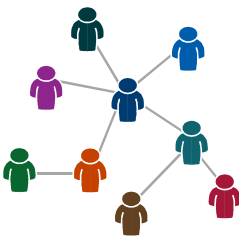
Describe the clinical processes, key decisions and expected outcomes associated with the system

Describe Patient Journeys

Describe the patient journeys through the system associated with particular clinical processes

Create Stakeholder Map

Create a common view of the range of stakeholders, their interests, and the links between them

Capture Stakeholder Needs

As a *stakeholder* **I need ...**
... so that ...

As a *stakeholder* **I need ...**
... so that ...

As a *stakeholder* **I need ...**
... so that ...

Identify the full range of possible stakeholder needs relevant to the system
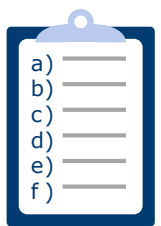
Prioritise Stakeholder Needs

As a *stakeholder* **I need ...**
... so that ...

As a *stakeholder* **I need ...**
... so that ...

As a *stakeholder* **I need ...**
... so that ...

Understand the relative priority of stakeholder needs relevant to the system

Agree Core Themes

a)
b)
c)
d)
e)
f)

Agree the core themes for the requirements based on the prioritised stakeholder needs

Identify Enablers and Blockers

Identify stakeholders who are able to facilitate or block delivery of an improved system

Plan Future Activities

Plan the future activities in a clear and robust programme to deliver an improved system

Stage Plan

A sample of possible **Tools** which may be added to the understand stage plan.

Rich Picture

A means to understand a system using diagrams to create a preliminary mental model

Delphi Study

An iterative approach to develop a consensus view regarding the current performance of the system

Storyboarding

A means to clearly articulate a view of a better system based on an understanding of the current system

Public Involvement

A means to elicit an understanding of the needs for a system, taking account of the full range of stakeholders

Facilitated Discussion

A means to elicit perceptions about a particular topic or area of interest in a non-threatening environment

One-to-one Interviews

A means to elicit information about a particular topic or area of interest in a one-to-one conversation

Project Canvas

A dynamic summary of a programme of improvement to encourage team consensus
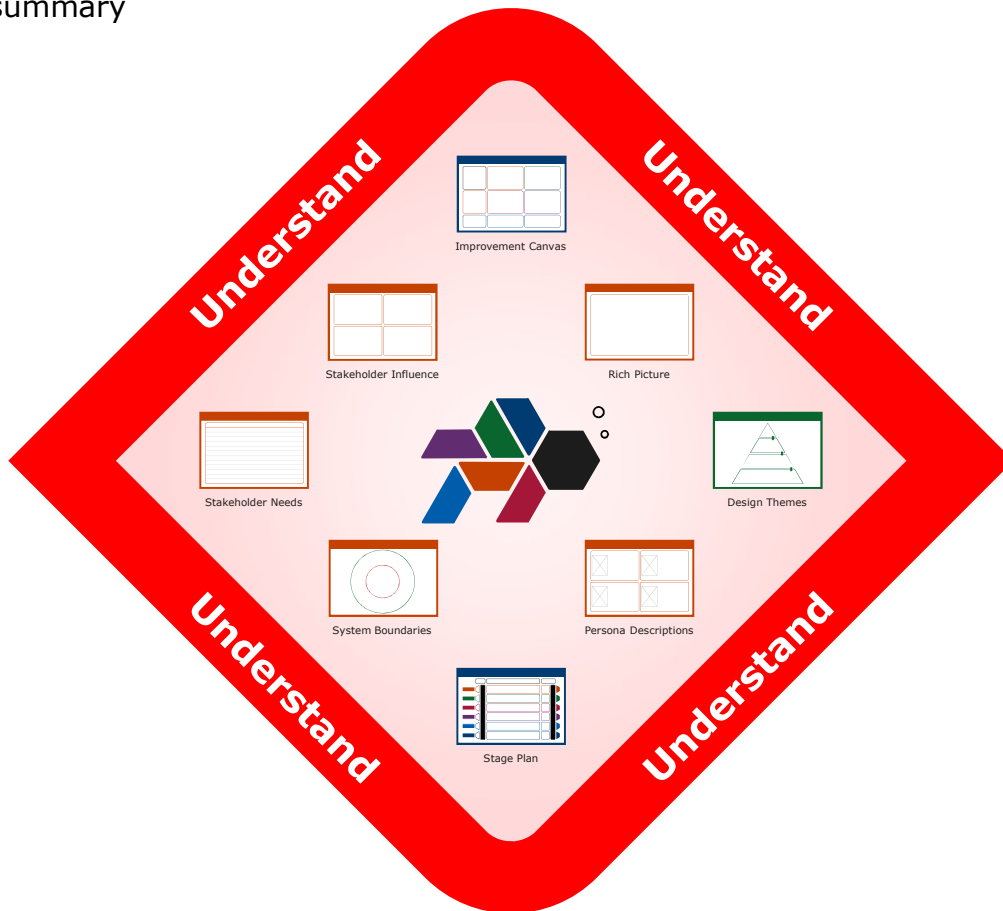
Stakeholder Analysis

An analysis of the potential for stakeholders to drive or block the outcome of a proposed change

Gantt Chart

A bar chart to illustrate the schedule required to deliver a programme of improvement

Stage Outputs

Activity summary

	Understand Output	Narrative / Authors / Date
✓	Agreed Scope	
✓	Stakeholder Needs	
✓	Stakeholder Influence	
✓	System Boundaries	
✓	System Map	
✓	Design Themes	
✓	Persona Descriptions	
✓	Case for Co-design	
✓	Other	
✓	Other	