**DEVELOPING A PROCESS MAP**

**What is it and how can it help me?**

A map of a patient journey is a visual representation - a picture or model - of the relevant procedures and administrative processes. The map shows how things are and what happens, rather than what should happen. This helps anyone involved see other people's views and roles. It can also help you to diagnose problems and identify areas for improvement.

There are different approaches to mapping patient journeys, procedures and administrative processes in healthcare services. Which one you select will depend upon:

* What you need to know
* Resources and timescales
* Engagement and interest of staff

Each one gives you a slightly different perspective and there is no definitive right or wrong. The key is to reflect how things are - and not how they should be.

Examples of process mapping techniques:

[A guide to mapping patient journeys - process mapping; a conventional model](http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/process_mapping_-_a_conventional_model.html)

[Process mapping - alternatives ways to conventional process mapping](http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/process_mapping_-_alternative_conventional_methods.html)

[Process templates](http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/process_mapping_-_process_templates.html)

[Walkthrough a patient journey](http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/patient_perspectives.html)

[Spaghetti diagram](http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/process_mapping_-_spaghetti_diagram.html)

[Value added steps](http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/process_mapping_-_value_stream_mapping.html)

[A picture of time and resources (process templates)](http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/process_mapping_-_process_templates.html) required by a single patient

[Reviewing the patient pathway; mapping your last ten patients](http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/process_mapping_-_the_last_ten_patients.html) - using patient files and records

[Getting patient perspectives](http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/patient_perspectives.html)

Care pathway analysis

**When does it work best?**

Mapping patient journeys is an essential tool to reduce delays and highlight improvements for patients and staff. Each approach reveals a different perspective.

**All approaches will reveal:**

* Unnecessary delays
* Unnecessary steps / unnecessary handovers
* Duplication of effort / waste
* Things that don't make sense / not logical
* Likely hotspots, bottlenecks or constraints

**Depending upon which approach you use, you will be able to:**

* Identify bottlenecks and constraints
* Identify and understand variations in clinical practice
* Develop a shared understanding of the problem
* Build teams
* Identify issues to do with quality of care
* Gain an in-depth understanding of a patient's perspective
* Identify steps that don't directly contribute to patient care (those that contribute are sometimes called value added steps)
* Carry out capacity and demand analysis from core information

Mapping things out can also produce brilliant ideas; especially from staff who don't normally have the opportunity to contribute to service improvement, but really know how things work.

**How to use it**

You don't need to map everything: concentrate on the area where there is a gap in your understanding, or which needs improvement. Ideally, you will know where the bottleneck is before you go into more detailed mapping as the information you need should be slightly different.

The information and level of detail you need depends upon your starting point. Consider the views and perspectives of the people you want to work with to identify the problems and solutions.

**Where do I start?**

* What do you need to know?
* How simple can you go?
* Are you working at a high level along the whole pathway or focusing in more detail?
* Whose views do you need?  What is the best way to engage them?
* Do you need to meet with / engage people in advance?
* How could you capture the patient's view (if the mapping exercise includes part of the service they experience)?

Wherever possible, use photographs and pictures of places, staff and equipment in mapping exercises. This brings your representation of ‘how things are' to life.

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| **Guide to Conventional Process Mapping** This is often used across teams and organisations (see [mapping the whole patient journey across teams and organisations)](http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/process_mapping_-_a_conventional_model.html) to learn about this mapping technique). **Outcome** A range of staff's knowledge about their work (what happens and when it happens) mapped along a patient journey.  Staff buy-in for potential improvements.  Change or improvement ideas. **What it is** Usually a big meeting of fifteen to  twenty- five people lasting around two to three hours.  **What resources you need** Skilled facilitator (not part of the group). A room.  Lead-in time to get the right people in the room.  Time from the people involved, preferably at a time when there is lease opportunity for interruption. Rolls of paper, post-its.  | **Potential impact (on patient journeys)** Reduces unnecessary delays, time lost due to duplication and work that doesn't make sense, right support for constraints. **Strengths** * Different perspectives.
* Interpretation is shared.
* Lots of ideas for improvement.
* Team building.
* Everyone understands the issues, so reduces resistance to change proposals.

**Weaknesses** * Effort to set up.
* Cost of external facilitation (unless you are able to get someone from another part of the organisation).
* Time - delay in getting going.
* People who aren't in the room don't get engaged.
* Lots of ideas for improvement overwhelming, so follow-up doesn't meet expectations.
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| **Non-Conventional Process Mapping** This is often used across teams and organisations (see [process mapping - alternative ways](http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/process_mapping_-_alternative_conventional_methods.html)). **Outcome** Usually more quickly accessed knowledge about a procedure / clinic / administrative process.  Details could focus on: * Walk the patient journey yourself.
* Set up a mini mapping session.
* [Value added steps](http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/process_mapping_-_value_stream_mapping.html).
* A picture of the time and resources (process templates) required by a single patient.
* Staff buy-in for potential improvements.
* Change or improvement ideas.

**What it is** (eg different approaches) 1. Walking through the patient journey 2. Set up a mini process mapping session. 3. Follow a patient. 4. Be a patient . **What resources you need** Clipboard and paper (if doing it by yourself)  or  flipcharts, rolls of paper and post its.  | **Potential impact (on patient journeys)** Reduces unnecessary delays, time lost due to duplication and work that doesn't make sense or doesn't ‘add value', right support for constraints.  **Strengths** * Can be planned in a shorter timescale.
* Potential for more detailed information to be produced.
* A good place to start.

**Weaknesses** * Could still get silos unless links or interfaces with other teams considered.
* Just because there is more detail, it does not (and should) not reflect everything. A judgement call needs to made on what actually would be useful and what is possible to undertake in the time that has been allocated.
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| **Tracking paperwork, samples, patients through a system** (see [tracer studies](http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/process_mapping_-_tracer_study.html) to learn about this technique). **Outcome** A small number of pathways mapped ie 10 patient records along key steps and/or staff interactions.  **What it is** A form developed to pick up information as something goes through the system. Collate the information and follow-up either through interviews or group discussion. **What resources you need** Planning time and good communication (staff who are involved need to know what they need to do and why). A good form.  Analysis time.  Follow-up time (meeting or possibly interviews).  | **Potential impact (on patient journeys)** Reduces unnecessary delays, time lost due to duplication and work that doesn't make sense or does not ‘add value'.  **Strengths** * Less resource intensive to set up.
* Identifies steps that are hidden.
* Level of detail in a contained area.
* Some staff may feel this approach is more scientific as it focuses on what happened and when, adding weight to the findings.

**Weaknesses** * Analysis time.
* Ownership of the results or findings less.
* Some people may say the sample size is too small.
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| **Using patient files and records** (see [reviewing the patient pathway: mapping your last ten patients](http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/process_mapping_-_the_last_ten_patients.html)). **Outcome** 10 records of patient journeys with timescales from a defined start and end point.    **What it is** A review of patient records and a follow-up meeting to discuss findings. **What resources you need** Access to patient records (this isn't always easy).  Time to review the patient records.  A room and the right people to discuss the results.  | **Potential impact (on patient journeys)** Standardises clinical practice / timescales at key stages of clinical pathway, reduces unnecessary delays and work that doesn't ‘add value'.  **Strengths** * Relatively quick and easy to focus - it gives you a good starting point.
* Focus on clinically important events and when they happen.
* Comparison across consultant.

**Weaknesses** * Misses out the detail.
* Misses out the ‘why things happen'.
* People may say the sample size is too small.
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| **Walkthrough a patient journey / patient shadowing** (see [process mapping - alternative ways](http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/process_mapping_-_alternative_conventional_methods.html)). **Outcome** Qualitative perspective of the patient's journey and interactions with staff.  See also getting [patient perspectives](http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/patient_perspectives.html) **What it is** Someone ‘shadows' a patient taking a tour of all of the steps or some steps in a patient's journey.  You can also walk through the journey talking to staff, but you will miss interaction between patients and staff. **What resources you need** Someone external to the team to carry out the walk through.  **Some preparation**.  Agreement about what to do with the findings.  Staff who are skilled at observing / interviewing doing the walk through. Permission from patients.  Time to write it up.  | **Potential impact (on patient journeys)** Reduces unnecessary delays, time lost due to duplication and work that doesn't make sense or doesn't ‘add value'. Delays reduced due to quality issues picked up from patients' viewpoints. **Strengths** * Identifies issues that staff may be less happy to highlight in a bigger group.
* Quality focus.
* Identifies local solutions with staff that they can take forward.
* Good way for individuals in a team to see how other teams work.

**Weaknesses** * General ownership of the insights gained (it is recommended someone external to the team does the walk through).
* Shadowing does not necessarily provide representative views.
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| **Workflows** (see[spaghetti diagram](http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/process_mapping_-_spaghetti_diagram.html)) **Outcome** A picture of time wasted from walking / movement of things. **What it is** A picture of the actual movement of staff, patients or things eg X-rays through a department. Called a spaghetti diagram as that's what it often looks like. **What resources you need** Someone to observe the movement of the person, patient or thing.  Preparation and discussion time with team. Flipchart and pens.  | **Results of improvements** Better layout for a department or ward based on observations. **Strengths** * Easy and quick to do.
* Visual picture reveals a lot and triggers much discussion.

**Weaknesses** * Also its strength - a single perspective
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| **Compare with evidence based pathways** **Outcome** A comparison of your clinical pathways with existing evidence based pathways. **What it is** Uses existing pathway work as a source of knowledge and ideas, links to pathway work: Map of Medicine  [Delivering quality and value](http://www.institute.nhs.uk/PriorityProgrammes/DeliveringQualityAndValue/) [Cancer Services Collaborative](http://www.cancerimprovement.nhs.uk/) [Partnership](http://www.18weeks.nhs.uk/) Department of Health 18 week programme NHS Library - Protocols and Pathways **What resources you need** Preparation. Access to the existing pathway.  Meeting room and time with the right people.  Flipchart.  A focus on ‘right patient, right care, right time' (Source local evidence)  | **Results following improvement** Development towards evidence based pathways. **Strengths** * Focus on evidence based care and best practice.
* Simple vision for the future.
* May get people ‘on the same page'.

**Weaknesses** * May not pick up the reality of what is going on in your pathway (especially in support function)..
* Currently, only main pathways are available.
* You must know your own pathway to get the most from it.
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| **Care Pathway Analysis Tools** Care pathway analysis tools allow health systems to map out the patient journey as a process map. You can then modify this to show the potential impact of new ways of working, or new technology and practice (see care pathway analysis). **What you get from the analysis** The anticipated impact prior to change. Done right, it can save significant resources eg you can see bottlenecks and anticipate the impact of changes in work patterns around the bottleneck. **What it is** It is a simulation software tool. A number of tools are now being developed for the NHS, such as the  Scenario Generator. The NHS Institute for Innovation and Improvement has acquired a free license for each SHA and PCT. **What resources you need** Access to the simulation software. Reasonable standard of computer hardware to ensure simulation runs quickly. Analytical expertise.  Additional data. Meetings to develop your model.    Good understanding about the strengths and limitations of the approach.  | **Results following improvement** Depends upon the focus of the simulation and the changes made as a result.  **Strengths** * Displays ideas for improvement and potential impact without need to make actual changes on the ground.

Helps to visualise benefits of change. Can prevent decisions that would make things worse rather than better. The discussions around the results usually lead to direct improvement. **Weaknesses** Generally needs a lot of data and some expertise from information and analytical departments as well as facilitation. All models represent a view of the world. The impact the model simulates may not be what happens. Currently, free tools only have limited number of pathways Not available to some regions. You must know your own pathway to get the most from it.  |

 **Examples**

"We want the simplest possible picture of how the process works, and simplest is the key word here. The aim of process mapping is to make things clear - to provide us with insight, and the best map is the simplest map that provides that insight."

The East Midlands Improvement Network



Originally from Jones & Mitchell, Lean Enterprise Academy © NHS Confederation. A high level value stream shows the time taken by each main party in an elective care pathway. This type of map can give you context for more detailed mapping exercises.

**What next?**

Be clear about your focus. If you are starting out, select an approach that will give you an overview of the whole pathway. Try to get an experienced facilitator on board to help you out. Be clear about your objectives, ie ask what, why, when, where and how?

For example, the scope of your project may be to reduce waiting times for radiology.  You know mapping will help you. What do you do?

A couple of high level maps would be a good place to

1. Describing the workflow of the department, around diagnostic tests
2. Describing the whole pathway for the most common test

These would pick up areas for improvement that are straightforward (for example reducing the number of handovers) and may also pick up problem areas for more detailed mapping exercises. You should make improvements before you get to the next stage.

The specific tools will guide you a bit more, but you may find it helpful to refer to the service improvement project guide as a checklist.

**Some tools that may help you**

* [Listening - the importance of this skill](http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/listening_-_importance_of_this_skill.html) will help to ensure all participants' views are acknowledged
* [Managing conflict](http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/human_dimensions_-_managing_conflict.html) may help with resistance to change