

DAPS QUALITY IMPROVEMENT WORKBOOK

A step-by-step guide for your quality improvement project





‘Quality Improvement is not a project, it is a journey’

Dr Imran Qureshi (Director General, DAPS Global)

Welcome

Improving the quality and safety of patient care remains a top priority within the NHS. As junior doctors we are ideally situated to promote and contribute to this incentive directly by performing simple measures of quality improvement (QI) within our working environments, directly on the shop floor.

Over the past few years, under the guidance and mentorship scheme of DAPS Global, junior doctors across London and the UK have successfully implemented Trust wide changes to improve quality and safety.

With its growing interest and relevance to healthcare, QI has become widespread amongst all Foundation and postgraduate programs across the UK. We have therefore developed a taught program to help guide you along the journey of quality improvement. Using QI methodology, we have designed a program to empower junior doctors to identify areas within their working environments that are in need of change and introduce sustainable interventions to improve them.

Having been facilitating QI projects with junior doctors for a number of years now, we are well aware of the difficulties that individuals encounter in undertaking a QI project. We have as a result of this experience, designed this workbook as an adjunct to our QI program, although it can be used as a standalone resource as well.

The workbook will take you through the various phases involved in a QI project, step-by-step, to help focus and consolidate your ideas and to facilitate their implementation within your working environment.

We hope that you will find this a useful resource and that it will help you in undertaking your QI project.



Dr Liana Zucco
Head of DAPS QI Program



Contents

Course training certificate

Identifying the problem

What does the process look like?

What are your goals?

How much of a problem is it?

What's the big idea?

Including those who matter

Making thoughts reality

Show us how you run

How is it getting out there?

What did you make of it all?

The future

QI project completion certificate

Quality
Improvement
Journey



Certificate

quality improvement project

THIS IS TO CERTIFY THAT

has attended the DAPS Global QI Program course on
Patient Safety & Quality Improvement

A handwritten signature in black ink, appearing to read "Imran Qureshi".

Dr Imran Qureshi
Director General
Doctors Advancing Patient Safety

A handwritten signature in black ink, appearing to read "Liana Zucco".

Dr Liana Zucco
Head of QI Program
Doctors Advancing Patient Safety

www.dapsglobal.com | info@dapsglobal.com

This course took place on

____ / ____ / ____

It is equivalent to a level one course
in quality improvement

This certificate must be stamped to be valid

Identifying the problem

The first part of any quality improvement project, is to identify the problem. The whole point of a quality improvement project is to improve something within your clinical environment. There can often be a significant amount of confusion as to what problems can be tackled in a quality improvement project. There are three broad areas under which problems can be categorised:

1. A problem which compromises a patient's clinical care
2. A problem which compromises a patient's experience
3. A problem which reduces efficiency

Most problems that you will find will fall into one or more of these categories. Whilst it is extremely tempting when identifying a problem to come up with a 'solution' it is important to do things systematically. Thinking of the solution/intervention is one of the steps that you will take whilst undertaking your quality improvement project, but it is important to make sure that you have done the necessary ground-work to ensure that you arrive at an optimal intervention.

Something to be aware of when identifying a problem, is that it is most probably not the first time it has been noted. Senior people in your team may tell you that someone has tried to fix the problem before and it cannot be fixed and not to 'waste your time.' Never listen to this, if you feel that something is a problem, then make sure you do something about it.

When identifying your problem, it is important to state why it is a problem and what the implications of it are. Remember that implications may not be limited to the patient, but may extend to other individuals and systems. Noting these will help you to consider your outcomes.

Example

The problem identified was that phlebotomists were not informing clinical staff about patients who were not bled in the morning on the phlebotomy round.

Implications for patient

- Medication dependent on result such as Warfarin, unable to be given - may compromise patient
- Patient may end up staying longer in hospital as a result

Implications for clinicians

- Doctor will have to spend time bleeding patients
- Patient has to be bled in the afternoon and result may need to be checked by on-call
- Doctor may have to stay longer to action blood test result

Cost implications

- Patient's length of stay in the hospital may be increased costing more in bed days
- Cost in wastage of doctors time of having to bleed patients later in the day

Your notes

- What is the problem you have identified?
- What implications does it have for patients?
- What implications does it have for healthcare professionals?
- Are there any cost implications?

What does the process look like?

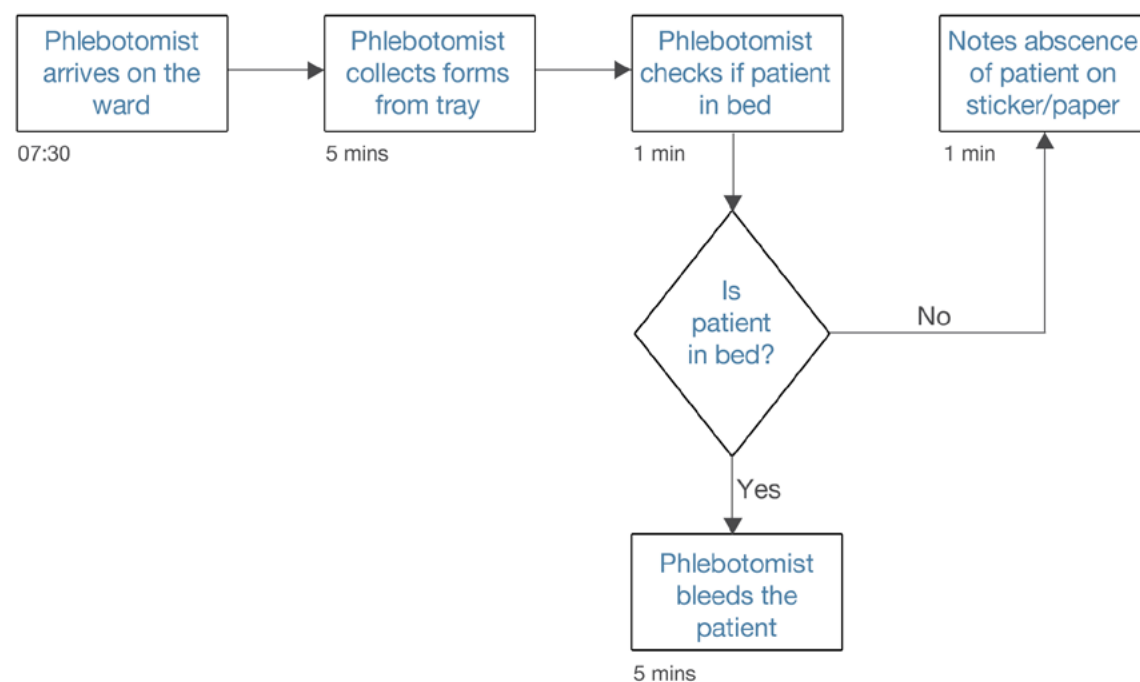
One of the most undervalued and underused tools in quality improvement is the humble process flow. When you have a problem, it is too easy to assume that you know all of its different components and how they interact to cause system failure. If you take the time to map out the whole process of that system from start to finish, you will find that there were a number of things that you did not take into account, nor considered part of the process to begin with.

To produce a meaningful process flow, it is important to suspend any ideas about what 'probably' happens within a system and to look at what actually does happen, tracing the process in detail from start to finish. You may find that there are steps in the process which you were not aware of that are giving rise to the system failing or are contributing to its failure. If the system's flow is very complicated, this itself may be one of the core reasons why the system is doomed to failure.

Your process flow can also be used to provide an estimation of time and ultimately cost of that system. It can also be used to highlight the places where potential human factors (human error) may play a role in contributing to system failure and it is important to actively identify those as they will serve to help you in establishing not just possible outcomes of your project but also help to guide your final intervention.

It is equally important to be careful when minimising steps within a process flow. This is not an exercise in making unqualified shortcuts, rather it provides the potential to resolve the number of steps in the flow without compromising quality of care.

Example



Your notes

- List all the steps in the process/system you are interested in
- Try and provide some time estimations for each step in the process
- Highlight any human factors which you feel may be relevant for each step
- Summarise the process and provide some indication of efficiency of the system

What are your goals?

When you've identified a problem and you have a clear picture of what it looks like, you can then begin to see the different parts of it which need changing and this will help you to develop an optimal intervention.

The outcomes that you identify should be something which is realistically measurable and something that you will want to change. Having too many outcomes, all of which are not related to your intervention can also make the process of improvement very complicated.

Continuing the example of the identified problem of phlebotomists not informing clinical staff of when they have not bled a patient, a reasonable outcome would be to reduce the amount of time taken by medical staff to bleed patients late in the day when they have discovered a patient has not been bled.

It is good practice within quality improvement, that when you are defining an outcome, is to state by how much you are going to improve it. This provides you with some measure of outcome/success, so taking the outcome mentioned above, you might say that one of the outcomes of your quality improvement project is to reduce the amount of time taken by medical staff to bleed patients late in the day when they have discovered a patient has not been bled in the morning by the phlebotomists by 50%.

There is a caveat to this however. It may well be the case that you adjust your prediction based on your baseline measurement of the problem. Knowing the problem's prevalence gives you a better idea of how much you expect to improve the problem by. Do not worry if you have stated a prediction and then you wish to change it, there is nothing wrong with that.

Another feature of quality improvement projects is what is known as the unintended outcome. By definition, these outcomes are nearly always 'discovered' once an intervention has been put into place. When you come across these, it is clearly very satisfying to know that another benefit has arisen from your intervention, however, it is not always easy to demonstrate that the unintended outcome is significant as it is unlikely that you have already done measurement around it otherwise it would not be an 'unintended' outcome.

Example

Potential outcomes would be:

- To reduce the amount of time taken by medical staff to bleed patients late in the day when they have discovered a patient has not been bled in morning by the phlebotomists by 50%
- To improve feedback by the Phlebotomists to clinical staff about patients not bled by 100%
- To decrease the number of bloods not taken by the Phlebotomists because patients have not been at their bedside by 75%
- To reduce the number of Warfarin doses being prescribed by the on-call doctor by 50%

Your notes

- Refer back to your process flow
- Make a list of the things that you would like to improve in the process
- Generate realistic outcomes from the issues you would like to change
- Specify by what percentage you would aim to improve those outcomes

How much of a problem is it?

Identifying a problem nearly always comes as a result of anecdotal observations by healthcare professionals. It is vital to measure the extent to which that perceived problem exists. This is often termed baseline measurement, i.e. knowing what the baseline of the problem is.

This measurement is often not considered important but with regards to quality improvement, it is vital, given that the strength of your intervention will be based on how much of an improvement has been made from the baseline. If there is nothing to compare the results of your intervention with, it is almost impossible to say that your intervention has been useful/successful.

Your measurement should ideally be tied into the outcomes that you want to look at in your project. This will also help to guide your intervention when you come to developing it as you will know what specific issues need targeting.

When it comes to the type of measurement that you need to do, there are a few things to bear in mind here. The first is the perpetual question about whether qualitative measurement is robust. The short answer is that it is robust enough and sometimes it is the only type of measurement that you are going to be able to do. Remember, that your goal is to demonstrate that your intervention is making an improvement. The other issue is (depending on the project) the usage of official scores or tools for assessing different criteria such as pain, mood, etc... It is not necessary to use an official scoring system. It really depends on what you are measuring and what your outcomes are, sometimes a bespoke set of questions is more appropriate to your project. Avoid getting too hung-up about this.

Example

Let us have a look at our outcomes again:

- To reduce the amount of time taken by medical staff to bleed patients late in the day when they have discovered a patient has not been bled in morning by the phlebotomists by 50%

To achieve this outcome, you need to measure how long it takes medical staff to bleed patients later on in the day when they have not been bled by the phlebotomists.

- To improve feedback by the Phlebotomists to clinical staff about patients not bled by 100%

To achieve this outcome, you need to measure, how the Phlebotomists record feedback, what manner that feedback is communicated in and at what time if at all they notify medical staff.

- To decrease the number of bloods not taken by the Phlebotomists because patients have not been at their bedside by 75%

To achieve this outcome, you need to measure how many patients are not by their bedside at the time when the phlebotomists come on their round.

Your notes

- Refer back to your outcomes
- Think of what you will need to measure to demonstrate change
- Your process flows will also be helpful here to help you decide exactly what shape your measurement will take

What's the big idea?

So now that you have decided what your goals are going to be and how you are going to undertake measurement to demonstrate whether your intervention has made a difference, it is time to think about the actual intervention itself.

The commonest thing for people to do is to start their project with an intervention in mind. The only problem with this approach is that you may end up with a situation where you are trying to force a square peg into a round hole. The intervention that you imagined may not be appropriate for its respective system and a systematic approach to quality improvement helps to prevent this from happening. Most people usually take an unstructured approach to devising an intervention and lack of clarity can often lead to an unrealistic solution. There are certain points that need to be considered when arriving at an intervention:

- Sustainability
- Intuitive
- Cost-effective
- Patient-centric
- Time-saving
- Transferable
- Buy-in
- Updateable
- Accessible

Whilst it is important to bear these points in mind when developing your intervention, they may not all be applicable, but those which are should be considered. The most important out of them all is sustainability. If you do not devise an intervention which can be sustainable, then there was little point of developing it in the first-place. Interventions need to be intuitive for users, do not make your interventions multi-step processes or things which are difficult to understand. A good intervention will arguably always be cost-effective. As much as is possible, interventions should be centred around the patient and getting patients involved in its development is always a good idea. A good intervention will similarly be a time-saver, even if there is a little more work to do in the short-term. Transferability is important as it helps one organisation to share their work with another. An intervention is most likely to succeed if it has buy-in for relevant stakeholders. Where relevant, it should be easily updateable and accessibility of the intervention is one of the other more crucial points to bear in mind. Make it accessible in as many different ways as possible.

Example

If you are trying to get Phlebotomists to contact clinical staff to inform them of which patients they have or have not managed to bleed, it may be useful to have a two-part intervention. The first where the phlebotomists put the sticker for patients they have been unable to bleed in a book on the ward and the second, that they inform one of the nurses on the ward if that is the case.

Looking at the points listed above, it appears that this would be a reasonable intervention given that it is likely to be sustainable if buy-in from relevant stakeholders is obtained. The cost of a book is minimal compared to the time wastage for doctors when they find out late if patients have not been bled, therefore cost-effective. The book will remain on the ward, so is accessible. It is an intuitive process with limited complexity etc. It is clearly a patient-centric intervention as it is ensuring that patient receive results on time. It will reduce time wastage, thus time-saving and is easily transferable.

Your notes

- Refer back to your outcomes and to your process flow
- Consider how you could overcome the problems that you initially identified whilst achieving the desired outcomes and reducing complexity within your process
- Use the points to help you shape your intervention

Including those who matter

A fundamental part to ensuring success of your quality improvement project is to make sure that you include all those healthcare professionals who are involved in any way in the process/system that you are seeking to change. Bear in mind that they have been using the system for longer than you have most of the time and some of them may have been involved in its conception, so failure to include them in the initial discussions for change, may be met with resistance and sometimes even hostility.

Even when you are proposing change to a process/system, it is important to demonstrate why change needs to occur in the first place, which is why it is essential to undertake a QI project in a systematic manner. Understanding the flow of a process, knowing what outcomes you want to achieve and having some measure of the current process arms you with sufficient ammunition to go to other parties and discuss the potential for change.

It is not uncommon as mentioned before, for individuals to have already thought of their intervention. When engaging relevant stakeholders however, it is important to suspend your ideas or at the very least ensure that your idea only comes across as a suggestion which you need validation from relevant parties for. This will make them feel more engaged with the process of change and more liable to help you to reach your intervention.

How do you go about identifying the relevant stakeholders? This is where your process flow can come into its own again (see how useful it is). You can identify the professionals involved at every step of the process and that can be your working group. Once you have identified the relevant individuals, it is important to know what you hope to gain from their inclusion in this team. Whilst you are more generally seeking approval of your intervention, each individual or group of individuals will bring something different to the table and it is important to pre-empt what that will be and how you can draw it out of them.

The other thing to remember about your stakeholders is that while they will be useful in helping you devise your intervention, if engaged from the start, they will be invaluable in helping you to roll it out.

Example

The individuals you would need to engage for improving communication from phlebotomists to clinical staff would be:

- Phlebotomists
- Phlebotomy manager
- Ward nursing staff
- Nursing manager
- Junior doctors

Note:

All the people listed here are the individuals involved in the blood test being requested, taken and sent. Improving communication will be critically dependent upon the nursing staff as doctors may not be available at the time phlebotomists are doing their rounds. It is useful to get managers involved as they will be able to help with system-wide change if the intervention is successful.

Your notes

- Refer back to your intervention and your process flow
- Go through each step and make a note of which healthcare professional is involved
- Consider your intervention - will other healthcare professionals now be involved?
- Consider what you would want from each healthcare professional

Making thoughts reality

Now you are ready to actually trial your intervention! This is the part of your QI journey which is fiarly critical. You want to see if the intervention you have devised is going to work. You have no idea of whether it is going to do exactly what you want, although you are hoping it will. The Model for Improvement will help you to make the most of your trial. Here we would like you to undertake what are known as PDSA Cycles (Plan, Do, Study, Act).

Traditionally, you would take your intervention, roll it out across the whole Trust and desperately try and measure what is going on. We would advocate the small tests of change methodology to you. Start off small and see if your intervention works for a small cohort. If you find it is working, then you can extend it further.

So taking this into account, how do PDSA cycles actually work?

Plan

You want to plan your intervention trial. Where will your trial take place, who will be a part of that trial? When will it take place? Who will need to be aware that the trial is taking place? How will you minimise interference with the trial?

What are you going to measure when your trial is happening? How will you measure it? Who will need to be involved in that measurement? What is your prediction of what will happen?

Do

This will involve implementation of the actual trial. You will need to keep notes about the practical aspects of running your intervention. Begin analysing your data

Study

What were the results of your trial? Did everything go according to plan? How did your results compare to your prediction? Did anything go wrong during the implementation of the trial? How did those people involved in the trial feel about the intervention?

Act

Taking what you have learnt from your first cycle, how will you know adapt it to iron out all of the issues that you had in an attempt to achieve the results that you desired? If everything went according to plan, your next PDSA cycle could be to extend the trial to more wards/patients, etc...

Example

Plan

Ask phlebotomists to take communication book on blood round. If unable to bleed, put patient sticker in book. At end of round inform nurse of names in book

Act

Bearing phlebotomists comments in mind, unbled patients names to be added to book at end of round.

Do

Phlebotomist took book, didn't have anywhere to put it on trolley. Managed to put all stickers in book. Felt like it slowed him down

Study

Names recorded in book, nursing staff informed at end of round. Doctors informed immediately of who wasn't bled. Patients bled early

Your notes

- Finalise your intervention and make sure that you are happy with it
- Write out your plan for your first PDSA cycle
- Ensure that you have a robust plan for measurement during the 'Do' part of the cycle
- Enter all of your PDSA cycles here

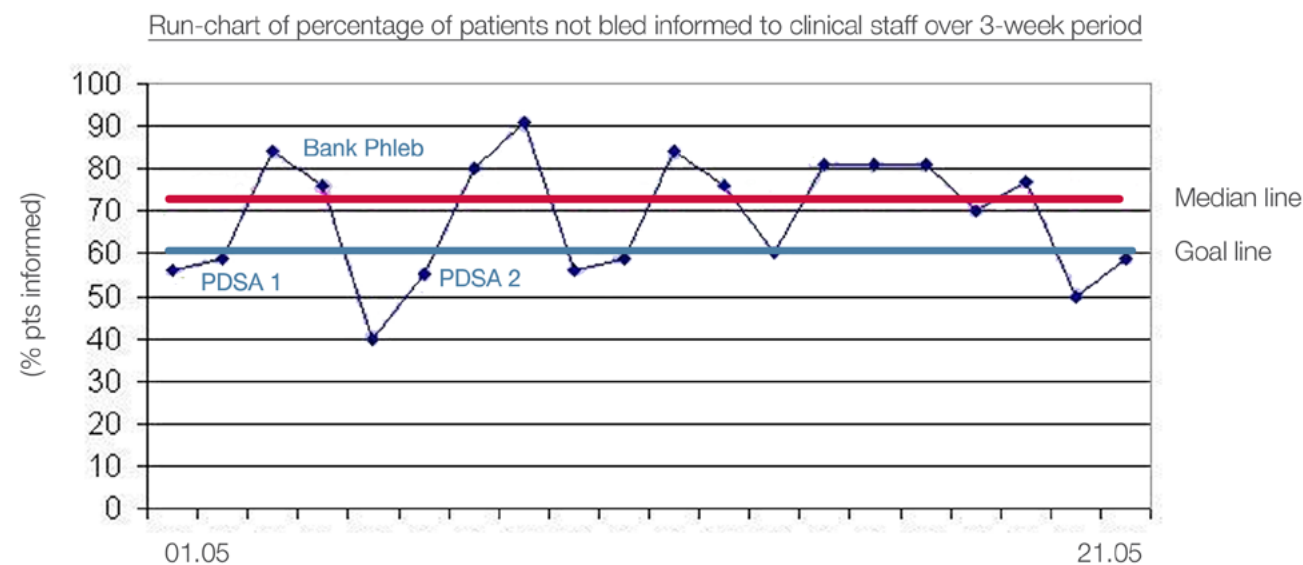
Show us how you run

You should have been collecting data from your PDSA cycles. What you need to demonstrate from any implementation of an intervention, is whether or not it is improving the process/system or making it worse over time.

This is where using something called a 'Run-chart' comes into its own. Run-charts involve plotting outcome data over a period of time to establish trends from them. Plotting your outcome data from your PDSA cycles will help in determining whether or not you are making an improvement. What makes these run-charts even more meaningful is annotating them. You will have some baseline data which will begin your run-chart and at the point you start your intervention, you annotate the chart to reflect that. The proceeding data points will give you an indication of what effect your intervention is actually having. There may be other changes that happen along the way and annotating your chart when they occur provides you with a running commentary of what is happening at the proces/system you are looking at and what factors affect it.

How do you produce a run chart? Follow these steps:

- Draw a graph with an x-axis and a y-axis
- Label the y-axis with the name of what you are measuring and the x-axis with the unit of time or sequence in which the numbers were collected
- Label the x-axis with the unit of time or sequence in which the numbers were collected
- Plot your data values in sequence
- Draw lines to connect the points on the graph.
- Calculate the median (the data point half way between the highest and the lowest data point) of the plotted numbers and draw the line on the graph.
- Give your chart a meaningful title
- Make a note of the goal line (from your original goal) and the sample size.
- Annotate the chart, indicating when your PDSA cycles were initiated, so that you can see how they affected your results
- Highlight any factors that may have affected the performance of the process.



Your notes

- Draw up the bones of your run-chart according to the steps opposite
- Enter your pre-intervention data as points
- Enter your results from your PDSA cycles
- Ensure you annotate your run-chart as fully as possible

How is it getting out there?

So now that you've got your intervention working after PDSA(x) and you've gone and expanded its testing to more areas and you are happy it works, how are you going to make its use ubiquitous within your hospital/Trust?

This is easier said than done. The trouble is, that there is a significant amount of bureaucracy that you have to navigate through in order to ensure that your intervention becomes part of the systems within the hospital.

Obviously having a clinical mentor from your hospital will be useful and they may well be able to help you to take it through the correct channels, but remember that time that you took to engage stakeholders at the beginning of your journey? Well this is the time to make that pay dividends for you. You should present them with your results and let that do the talking for you.

Convincing people that your idea warrants roll-out whilst laborious, usually happens without too much fuss, as long as the idea is any good and demonstrates that you have improved care (and more importantly, made financial savings for the Trust (never underestimate the power of finance in pushing an intervention through). What is difficult is the once it is agreed, how do you then communicate this to all of the staff that need to know about it. This is difficult enough in one hospital, but when it needs to transfer across many, this becomes even more difficult, so a precise strategy of how this can be achieved is important. Will you use the Intranet, Junior Doctor forums, mandatory teaching, mail-shot?

The other important issue to consider, is once you have managed to get staff to take your idea on board and start using it, how are you going to get sustained use? Sustainability as mentioned previously, is probably the most important aspect of a QI project to consider, because without it, there was almost no point of undertaking the project in the first place. How will you achieve sustainability?

Example

This intervention was straightforward to implement and roll-out. Although it was a systemic change, having engaged the head of Phlebotomy and the head of Nursing from the outset of the project meant that I already had buy-in for the intervention. I showed them my results, which satisfied them that the intervention was working and warranted rolling-out.

The predominant issue with roll-out was agreeing where the funding was going to come from for the books on each ward. After some discussion, it was agreed that it would come out of the ward's budget. This was agreed with the team from procurement via a meeting which was facilitated by the head of Nursing.

In terms of sustainability, it was important that the responsibility of maintaining the book fell to a member of staff who is most reliably on the ward and this was identified as the Ward Clerk and their role doubles for ordering ward supplies so this fell perfectly within their remit. If a Ward Clerk is going to leave or be away for a period of time, then a handover protocol has already been established to prevent any gaps.

Your notes

- Which individuals/board/committees are required for roll-out of your intervention?
- Which group(s) of people do you need to present your data to?
- When pitching your idea, you need to consider both the safety/efficiency aspect, but also cost!
- How will you ensure sustainability of your idea?

What did you make of it all?

So now that you have essentially reached the end of your quality improvement project, it is time to bring all of your hardwork together and see what conclusions you can make.

The conclusions should be structured in a way that it makes it easy for someone else to look at your project and understand it from start to finish. You began with a problem, you broke it down, measured it and undertook cycles of change involving an intervention and then measured the effect of the intervention on the process. Now that you have obtained all of this information, what does it all mean?

You began with a/some goal(s). Have you managed to achieve it/them. How did your results compare? Was it completely different from what you expected and looking at your run-charts and other data you may have collected, can you provide any plausible reasons for why that might have occurred.

With any journey, one learns a number of lessons along the way. What lessons have you learnt from undertaking this QI project? How has this influenced your understanding of healthcare and how has this changed you as a healthcare professional? Listing these lessons is essential so that others who try and undertake the same project as you will be able to learn from any potential problems that may arise and having your experience to call upon will make their journey easier.

Example

Undertaking this project about improving communication between phlebotomy and clinical staff has been extremely rewarding.

My main goal was to ensure that when patients were not bled by the phlebotomist, that the phlebotomist alerted a clinical member of staff 100% of the time. This was from a baseline of 0%. When I looked at the flow of the problem, I realised that when the Phlebotomist was unable to bleed a patient for whatever reason, there was no place for them to record this. Having spoken to the Phlebotomy and Nursing staff, it was agreed that we would implement a book with a two-stage communication process. The Phlebotomist would put the stickers for unbled patients in the communication book, they would inform the nurses that patients had been added to the book. The nurses would then contact the team looking after the patients to let them know which patients had not been bled.

The results from this intervention demonstrated that communication significantly improved. There were some teething difficulties in PDSA1, where the nurses were unable to get hold of a doctor to inform about the blood results, so in PDSA2, we changed the system that a member of the team would contact the wards to find out if there were any patients that were unbled. By the time we got to PDSA5, the results were consistently 100% communication.

I learnt a number of lessons from this project. The first was to never make assumptions about anything. A process often has a greater layer of complexity to it than first envisaged. Starting from the beginning is extremely useful as it provides a clear plan for the way ahead.

Your notes

- Summarise the project
- Did you achieve your goals?
- What lessons did you learn along your QI journey?
- What are your personal reflections from having undertaken a QI project?

The future

You have spent a lot of time undertaking this quality improvement project. You have by now managed to roll-out it out in your Trust and are no doubt getting feedback about it, hopefully mostly positive. The project however does not end here. There are some more things that need to be done and mostly to recognise the work that you've put into this.

Sustainability

Whilst it's great that you have got an intervention going in your hospital, it is important that it is sustained, which includes periodically measuring it to see if it's still being used correctly. Remember that great interventions can lose their value if they are not sustained correctly. By continuing measurement, you will ensure that the intervention is not forgotten and that outcomes remain a focus.

BMJ Quality

Your work needs to be put out there in the healthcare ether so that others can see what you have done and not just learn from it, but also reproduce it in their own clinical environment if they've got the same problem

BMJ Quality has developed an online platform which allows you to complete a quality improvement project online and then to be able to publish it to the open access journal quality improvement reports. Quality improvement reports is a pubmed indexed journal and will count as a relevant publication on applications.

You will need to purchase a subscription with BMJ Quality which you can do at quality.bmj.com. With your yearly subscription, you will be able to publish as many quality improvement reports as you want and will receive additional help, tools and materials.

Presentations

Part of having a great intervention is being able to share it with others so that practice can improve locally for them as well. You need to get your idea some 'air-time' and this can be achieved by submitting your work for various conferences. There may be conferences that are speciality-specific, for example, if you did a project around improving Warfarin prescription, it could be presented at a Haematology conference, equally, it could be presented at the plethora of quality and safety fora which already exist so that others can share in your great work.

Some fora which you should try and present your work at are:

- DAPS Global Summit
- International Forum on Quality & Safety
- FMLM Annual Conference
- Agents for Change
- Patient Safety Congress



Certificate

quality improvement project

THIS IS TO CERTIFY THAT

has attained the level of **DAPS ASSOCIATE** and has successfully completed a Quality Improvement Project

A handwritten signature in blue ink, appearing to read "Imran Qureshi".

Dr Imran Qureshi
Director General
Doctors Advancing Patient Safety

A handwritten signature in blue ink, appearing to read "Liana Zucco".

Dr Liana Zucco
Head of QI Program
Doctors Advancing Patient Safety

www.dapsglobal.com | info@dapsglobal.com

This certificate must be signed and dated by DAPS Lead/Educational Supervisor

Signature DAPS Lead/Educational Supervisor

Date



info@dapsglobal.com | dapsglobal.com | © DAPS Global 2013