UTIHI Open School

Quality Improvement Projects

Project Champion Handbook

University of Toronto Chapter for the Institute for Healthcare Improvement Open School (UTIHI)

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University of Toronto Institute for Healthcare Improvement Open School (UTIHI)

Quality Improvement Projects Handbook for Champions/Supervisors

2023-2024

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ABOUT

1 - INTRODUCTION:

Welcome to the IHI Open School Quality Improvement Practicum Project Champion Guide! We are excited that you will be advising a team of students about how to set up and conduct a quality improvement project in a clinical setting. The work that you do will enhance their ability to successfully plan and carry out a project – one that is valued by their health profession's school as well as future educational and workplace environments.

This guide will provide you with information about IHI Open School Quality Improvement Practicum requirements as well as tips for you as a Project Champion.

1.1 - PRACTICUM REQUIREMENTS

- Projects should be clinically focused
- Interprofessional teams (medicine, physician assistant, dental, nursing, pharmacy, physical therapy, public health, health management, etc.) are encouraged to work on projects together, but that's not required.
- Students will need to complete several IHI open school courses on Quality Improvement. QI 101, 102, 103, and 104
- Completion of the practicum includes submission of a charter, a cause-and-effect diagram, at least two PDSA cycle forms, at least one run chart, and one summary report.
- Projects count even if there is no successful improvement, as long as learning using the Practicum forms is documented.

1.2 - OVERVIEW OF FORMS TO BE SUBMITTED FOR COMPLETION OF UTIHI'S QI PRACTICUM

Charter: This is the basic description of the improvement project. What is the aim? Does the scope need to be narrowed? Who should be on the project team? A typical charter will be 1-3 pages long and will prompt students to consider stakeholders, project measures, and potential barriers.

Cause and effect diagram: Also known as an Ishikawa or fishbone diagram, this tool will help learners capture, display, and classify various theories about the causes of a problem. When complete, the cause-and-effect diagram will yield several ideas for changes to test using PDSA cycles. Due to the variety of projects we receive, a **process map is also acceptable**.

Plan-Do-Study-Act (PSDA) Form: This form is used to carry out the tests. Learners should submit a PDSA form for each of the specific small tests of change they do. Learners should turn in at least two PDSA forms for their project so they can see how to modify an idea based on the first test of change.

Run Chart: This is a graphical display of data, showing changes over time; teams use run charts of their key measures to tell them if the changes they are testing are leading to improvement. Learners need to submit at least one run chart at the end of the project.

Summary Report: This form will serve as a summary of the project and encourage learners to reflect on the process. With permission, teams and project champions are encouraged to share the project publicly at UTIHI's annual conference. We want to openly share completed projects to demonstrate how learners can help improve care for patients.

1.3 - PROJECT CHAMPION BENEFITS/RESPONSIBILITIES

There are benefits and responsibilities to being a Project Champion

As a Champion, you will:

- Work closely with learners/mentees interested in quality improvement
- Improve care in an area of interest
- Gain practical experience mentoring learners in quality improvement, which is valued by educational systems and employers

You will be responsible for:

- Reviewing this Project Champion Handbook
- Committing to mentoring/advising a team of students
- Setting aside time to meet regularly, review practicum forms, and provide ongoing feedback/guidance
- Supporting learners by identifying available resources, including forms and tools.
- Advocate for the project within the health system
- (Optional) Becoming familiar with IHI Open School's Online course content in Quality Improvement

1.4 - CHAMPION CHECKLIST

Here is a checklist that will guide you as an IHI Open School Quality Improvement Champion:

- Help the students identify a project.
- Review the first draft of the project charter and provide feedback.
- Meet with the students to give feedback on their project charter.
- Review the cause-and-effect diagram and give feedback.
- Review the students' PDSA cycles and run charts, and give feedback as needed.
- Review the final summary report, ensuring the data and narrative are accurate.
- Provide permission (if possible) for the project to be presented at the UTIHI QuIPS Conference

1.5 – KEY DATES (FOR PROJECTS BEGINNING IN OCTOBER 2023)

Alternative dates and timelines will be provided for projects if they begin after October 2023.

- Student Application Deadline: September 15, 2023 (teams assigned on rolling-basis)
- Student Kickoff Event: October (TBD)
    - 1 Hour Evening Event
- Student eLearning Course Completion Deadline: Late January 2024
- Project Charter Submission: Recommended Deadline - January 15th, 2024
- Team Diagnostics and Feedback: Recommended Deadline - January 31st, 2024
- PDSA Cycle 1: Recommended Deadline – February 25th, 2024
- PDSA Cycle 2: Recommended Deadline – April 8th, 2024
- Presentation for UTIHI Conference: May TBD

2 - IDENTIFYING A PROJECT

The IHI Open School Quality Improvement Practicum is designed to be an overall student-driven project, but it is expected that champions will provide students with an initial well-defined project to act as a starting point.

Here are some suggestions on how to identify potential projects:

1. **Critical thinking about the current system**
   Sometimes, simply reflecting on problems within a system can generate some good ideas for change. If you make a flow chart of your current process (say, how medications are delivered to patients in a timely fashion) it may be possible to identify parts of the system that aren't working or are needlessly complex. Another way to go about critical thinking is to gather and analyze data on the way your system currently works - which can then help you identify problems and develop changes to address them. For example, are patients being woken up at 3 a.m. for morning labs and then again at 7 a.m. for IV catheter replacement? Would it make more sense to wake the patient up once instead? Consider ideas in relation to the 6 IOM aims: Safe, Timely, Equitable, Efficient, Effective, and Patient Centred.
2. **Benchmarking**
   Comparing your own process to "best practice" can help you identify where your own system may fall short. Based on that analysis, you can develop ideas for improving your performance. This is known as benchmarking. For example, is there a hospital across town that had 50% fewer falls than your facility last year? Why is that? What are they doing in their hospital that you adopt and integrate into your own local setting?
3. **Using Technology**
   Technology – such as automation, new equipment, or new information systems – can lead to improvement. But be careful – technology that isn't reliable, or that simply makes a bad system more accessible via the Internet, isn't necessarily the fix you're looking for. For example, computerized physician order entry (CPOE) is increasing patient safety by alerting clinicians to duplicate orders and drug-drug interactions. However, because there are so many alerts (the phrase "alert fatigue" is used in the literature), clinicians often ignore and override them. How can this process be improved?
4. **Creative Thinking**
   Where do new ideas come from? You can spur creative thinking in various ways, including simply taking the time to do this sort of thinking; exposing yourself to situations (such as taking the role of a patient) that can spark new ideas; identifying the boundaries that limit the changes you can make and then finding ways to dismantle those boundaries; and temporarily considering unrealistically ambitious goals ("No patient will ever fall in this hospital again") that can prompt you to break out of your old way of thinking. For example, can you reduce the ER waiting time at your facility to 15 minutes or less? What barriers stand in the way? Students are fresh observers of a system, turning lack of knowledge into a strength.
5. **Taking the patient's perspective**
   When you see the care system from a patient's perspective, you'll see opportunities for improvement that might not be apparent as a caregiver. Is it too loud when you're trying to sleep? Do bright lights give you a headache? Do you have to wait too long to get your test results? Patient shadowing and interviewing are useful techniques when coming up with good ideas to change.
6. **Reaching out to other professionals**
   Another way of finding a project is to talk with the care providers in your organization about their on-going quality and safety efforts. They may have a project or topic already being worked on that you could explore. In past tests of the IHI Open School Quality Improvement Practicum, we've found that projects that are already high priorities in a local organization have a much better chance of success – especially in the long run. As we've mentioned, you

won't really learn quality improvement by just collecting data, but there are likely important changes that need to be tested and are just waiting for the will and energy of a champion like you!

7. **Empathy Mapping**
   Empathy mapping can be an effective tool to help teams better understand the experiences of others. It is built on the premise that identifying changes first starts with understanding the people within the system. This process allows teams to 'map' observations of another person or group into 4 quadrants (Says, Thinks, Does, Feels). For more information, see: https://qilothian.scot.nhs.uk/pc-resource-empathy-map

It is important that the project is realistic – not too large in scope or aim. Students may have big ideas about what to change, and it is your job as the champion to guide them to what can be done in reality. The goal is for students to obtain hands-on experience with testing changes that can lead to improvement.

For example, students may come to you wanting to decrease ED utilization for asthma patients seen by several clinics. This is important, but driving down ED utilization for this population will be an enormous undertaking. Instead, help the students think critically about what drives ED utilization for asthma patients. Perhaps a more focused and practical approach will be to improve the prescription process for inhaled corticosteroids for asthma patients from one clinic. In the end, having a more focused and practical approach will increase the probability that the improvement project being led by the students will actually lead to improvement.

Although student-initiated projects may be more interesting and stimulating to a student than site-determined projects, student-initiated projects often only last as long as the students are around – which can be frustrating for the staff, and the clinical site. So, it is important that you as a Champion help students select projects that are more likely to lead to sustained improvement even after the students move on.

Consider the following questions when determining a project:

- What are the improvement efforts already in place?
- What are the core issues leadership has identified as needing improvement?
- What part of this can become a subproject for students?

2.1 CLINICAL RESEARCH VS. QUALITY IMPROVEMENT

If you are part of a healthcare institution, there may be a REB protocol in place for QI projects. QI projects typically differ from human subject research due to their **purpose** (primary goal to improve operations/efficiency within a short time frame), **rationale** (there is evidence that supports a change in a practice), **methods** (no control group, no randomization, no fixed protocol, use of rapid evaluation, use of incremental changes), **risk** (no more than what results from usual care), and **population** (we include individuals who normally would participate in the process that we are trying to improve).

If you have questions around whether your project is categorized as Clinical Research or Quality Improvement, we suggest using a risk-burden screening tool such as ARECCI: https://arecci.albertainnovates.ca/ . ARECCI is used by several Hospital REBs in Toronto, however it is important to note that many institutional policies differ, and we highly recommend checking with your local REB department policies.

Student Participation in Healthcare Settings

We give the project champion autonomy on the clearances, boundaries, and site-specific training that are required for their QI students. Students should always check in with their project champions before reaching out to patients or interacting

with them, and work with the project champions to proactively establish boundaries and QI project steps. Many of our QI projects involve studying systems (e.g., understanding and improving procurement processes), however a handful of projects may benefit from interactions with patients. For patient interaction (e.g., surveys, interviews), it would be at the discretion of the project champion to obtain any necessary site-specific training or clearances for the students.

3 - WORKING WITH HEALTH SYSTEM SPONSORS

Many Champions will find themselves in a situation where they can serve as both the advisor and the health system sponsor, helping the students navigate the project through a particular health system.

If that's not the case, you may need to assist your students in identifying a sponsor, or advocate, within the health system where they will be doing their project. This may be the director of quality in the department where the project will be taking place or it may be a nurse manager, a clinical director, or a quality leader for the health system itself.

Here are some strategies to help you get buy-in for student involvement in quality improvement projects at your local facility:

- Reach out to quality leaders in clinical settings where ongoing quality improvements might have room for students. (We're sure they'll want some help!)
- Have one-on-one conversations with quality leaders, focusing on how excited students are about making improvements – and how well prepared they are, having completed several online QI courses in preparation for the Practicum.
- Emphasize the benefits to the health system sponsor of having students involved in QI. (Benefits include having an additional workforce to move a project forward, increasing the number of health professionals equipped to do QI as part of their daily work, and working closely with enthusiastic students who value QI.)

Champion Tip: Health system partners may be helpful in providing feedback so students are able to start with feasible projects and locate data to establish a baseline for the project. Encourage your team to have conversations with the stakeholders in the process of developing the charter.

4 - GIVING FEEDBACK ON THE PROJECT CHARTER

Your students will ask you to assess their charter using the charter assessment form. Giving constructive feedback to your students is one of the most important responsibilities you have as a Champion. Here is an example of critical feedback on a charter given by a Champion (Example provided by the Institute for Healthcare Improvement):

Project Title: Improving Hand Hygiene Compliance to Reduce Preventable Harm

Examples of Feedback Comments

What are we trying to accomplish? Aim statement

Our aim is to find new ways to help improve compliance with already established hand hygiene guidelines.

Make sure your aim statement contains "how good, by when, and for whom". For example, you could say, "Our aim is to find new ways to help improve compliance with hand hygiene. Specifically, we want health care professional compliance with hand hygiene to be 80% or higher across all hospital units by June 1, 2021."

Problem to be addressed

Hand hygiene is extremely important because, when done appropriately, it can reduce the spread of disease in the hospital setting. At the University of Portage Medical Center, there is already a hand-hygiene policy in place.

The problem to be addressed is poor compliance with said policy. You need to make this clearer.

Reason for the effort

The organization will benefit from higher hand washing compliance because there will be fewer hospital-acquired infections and complications. A potential downside is that the organization will have to spend more money to educate health care workers, to make sure supplies are never low, and to increase hand hygiene compliance for the future.

It's important to make sure you specify the benefit to the patient.

Expected outcomes/benefits

We will monitor health care professionals as they enter and leave rooms and determine if they use hand sanitizer or correctly wash their hands each time. We are measuring compliance by the percentage of times practitioners correctly wash their hands entering and exiting the room. As a result of the study, we hope to increase everyday hand sanitizer usage. By increasing usage, there will be fewer hospital- acquired infections.

This explains the "how" of your project. It doesn't belong in this section.

Please ensure that you specify the deliverables created from the improvement effort, including a standardized process and a better understanding of the importance of hand hygiene.

How do we know that a change is an improvement?

... Finally, it is very unlikely that other health care requirements will be adversely affected by higher hand hygiene compliance. Hand washing is a short process that has been studied for a significant length of time, and there is no reason to believe that it causes new problems. However, we will keep an eye out for shortcomings or new problems in other processes to attain balancing measures.

It's important to define your outcome, process, and balancing measures in your charter. In this case, for balancing measures, you could include: Physician and nurse satisfaction, Cost of hand sanitizer

Tip: Feel free to use bullets instead of writing full paragraphs.

What changes can we make that will lead to improvement?

Initial Activities: Existing UPMC hand hygiene standards require use of alcohol hand rub or soap and water any time a staff member enters or exits a patient room. For this project, we will test three changes using PDSA cycles:

1. We will increase the availability of hand sanitizer to see if that change improves the compliance rate.
2. A peer physician or nurse manager will follow up with any staff members who were found to be noncompliant and offer remediation training.
3. Based on our findings, we will improve signage within the units to see if that helps to change behavior.

Education for the good of improvement will eventually fade away. A true improvement will be achieved only by changing the system.

Additionally, beware of using reprimand and blame as a strategy to improve hand hygiene compliance. Human error is only a problem 10-15% of the time. You want to focus on improving the system so that it's easier for staff to comply.

To help the student in the project above, the Champion also asked the following questions about the data collection plan:

- **What are the students trying to measure?** Is it hand-washing rates? Rates of infection?
- **What specific measure did the students select for this purpose?** Maybe it's "percent of the time doctors and nurses wash hands before encounters with patients."
- **How are the students defining the measure?** It pays to be very detailed during this step in the measurement journey. If the measure is a percent or rate, specify the numerator ("number of times doctors and nurses wash hands before seeing patients"') and the denominator ("total patient encounters"). If it is an average, identify the calculation for deriving the average. Include any special equipment needed to capture the data. If it is a score (such as a patient satisfaction score), describe how the score is derived.
- **What is the students' data collection plan?** Again, be specific. Here are some good questions to ask:
    - Who is responsible for collecting the data?
    - How often will the data be collected (e.g., hourly, daily, weekly, or monthly)?
    - What are the specific data sources?
    - What is to be included or excluded (e.g., include only inpatients in this measure or include inpatients and outpatients)?
    - How will these data be collected (e.g., manually, by using a log, or by an automated system)?
- **What is the students' baseline measurement?**
    - What's your starting point for the measurement?
    - How will you summarize the baseline data to get an overall baseline number?
    - And over what time period will you collect the baseline data?
- **What are the students' targets or goals for this measure?** Specify the target or goal. Do you want to make sure compliance rates improve? Do you want to make sure staff satisfaction rates stay strong?

Generally speaking, common areas for feedback include:

- An aim statement that needs to be more specific
- A project scope that is too large to be completed during the timeframe
- An incomplete family of measures
- Measures that are not operationally defined
- Key stakeholders that aren't considered

UTIHI will also review Project Charters and provide constructive feedback to students.

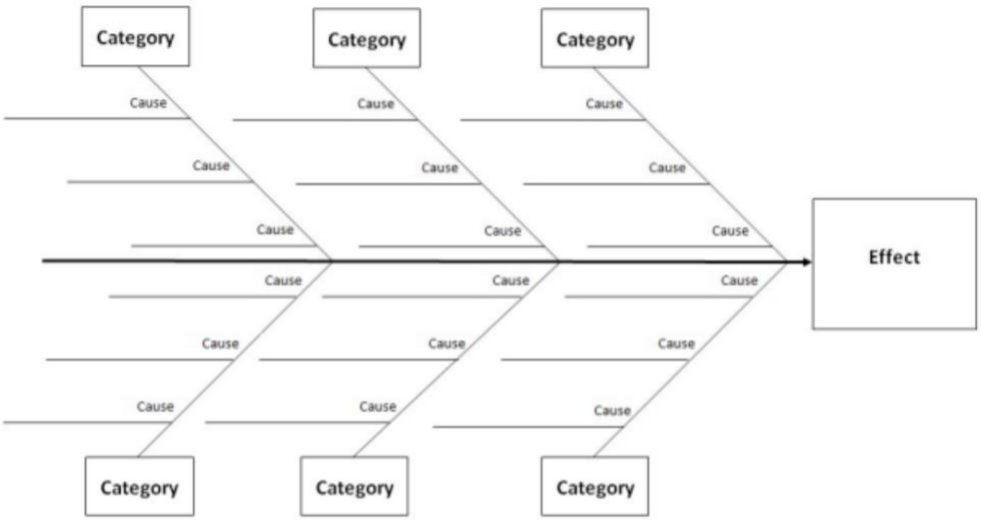
5 - ENCOURAGING SYSTEM THINKING USING CAUSE AND EFFECT DIAGRAMS

A cause-and-effect diagram, also known as an Ishikawa (after its developer) or “fishbone” (after its shape) diagram, is a graphic tool used to explore and display the possible causes of a certain effect. It will help students identify potential changes to test for their quality improvement project.

Why is it such a valuable tool to quality improvement teams?

1. It helps teams understand that there are many causes that contribute to an effect.
2. It graphically displays the relationship of the causes to the effect and to each other.
3. It helps identify areas for improvement within projects.

Here is a picture of a cause-and-effect diagram template:



Causes are parts of a system and forces outside a system that directly influence the outcome, or aim, of a project. For example, one cause of a low hand hygiene compliance rate is provider behavior. In other words, getting providers to change their behavior (and wash their hands) directly influences the compliance level within the unit or hospital.

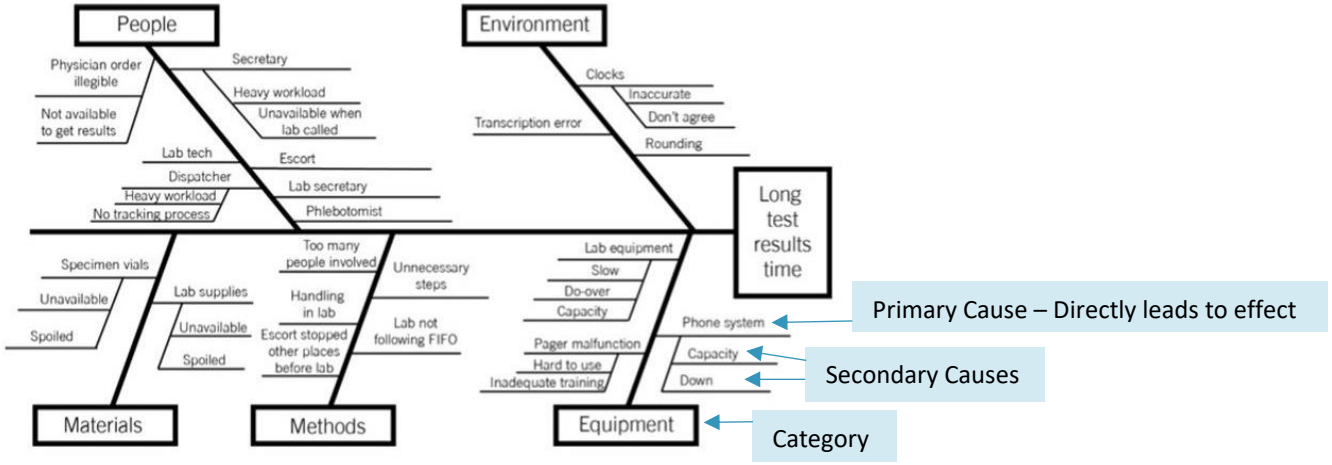
There are lots of causes that contribute to a certain effect. Take poor hand hygiene, for example. What are the contributing factors? Sometimes clinicians are too busy. Sometimes they wash their hands but they don’t use proper hand-washing technique. Sometimes the gel dispenser is broken. Sometimes the gel dispenser is working, but it’s empty.

Students should consider these six categories as they think about all the causes of the problem they are trying to solve with their quality improvement project:

- **Materials** (supply, design, availability, and maintenance)
- **Methods and Process** (steps in care process and steps in supply chain)
- **Environment** (staffing levels and skills, workload and shift patterns, administrative and managerial support, and physical plant, policies, and regulations)
- **Equipment** (any equipment/tools needed to get the job done)
- **People** (staff knowledge and skills/training, competence, patient behavior, and supervision)
- **Measurement** (data collection, definition of measures, sampling issues)

Here is an example of a cause-and-effect diagram that considered some of the categories previously mentioned. *Source: IHI*

Note: secondary/tertiary causes are not required for this activity



Teams should also consider these instructions on how to construct a cause-and-effect diagram

1. Write the effect (in other words, the thing you're trying to change) in a box on the right-hand side of the page.
2. Draw a long horizontal line to the left of the effect.
3. Decide on the categories of causes for the effect. As mentioned above, useful categories of causes in a classic fishbone diagram include Materials, Equipment, Methods/Process, Environment, Measurement, and People. Another way to think of categories is in terms of causes at each major step in the process. (Note: These categories can vary depending on the project. Manufacturing sometimes follows the "5 Ms," including members, machines, materials, methods, and measurement. Non-manufacturing systems sometimes use the "5 Ps," including patrons, people, provisions, places, and procedures. Just make sure the categories that have been chosen fit the project.)
4. Draw diagonal lines above and below the horizontal line (these are the "fishbones"), and label with the categories that have been chosen.
5. Brainstorm and collect a list of causes for each category.
6. List the causes on each fishbone. If a cause has a secondary cause (for example, under "pagers," you could list "hard to use" and "inadequate training") draw a branch bone to show relationships among the causes.
7. Develop the causes by asking, "Why?" until you have reached a useful level of detail – that is, when the cause is specific enough to be able to test a change and measure its effects.

A student can likely look at an improvement project and quickly identify three or four causes of the problem. But it's important to identify these causes as a team because everyone — a nurse, a physician, and other health care workers — has a different view of the system. In other words, everyone knows something different. Working together will also promote teamwork among your students and lead to a deeper understanding of the system they are trying to change.

What's the best way to collaborate? Together with the quality improvement team, encourage students to find a quiet location and plan a 1- to 2-hour session where they can brainstorm causes related to the problem.

6 - COACHING STUDENTS THROUGH PDSA CYCLES

Coaching involves:

- Assisting students in identifying specific goals.
- Providing students with the tools, perspective, and structure to accomplish the goals they have set.
- Reframing beliefs and creating opportunities for focused reflection.

Coaching involves providing feedback to students (or making sure that others provide this feedback) in order to help them develop an awareness of their own behaviors. Coaches focus less on telling and showing, and more on asking questions and involving students in figuring out what needs to be done and the ways to do it.

As an IHI Open School Quality Improvement Practicum Champion, you'll be coaching your students on their project through their PDSA cycles. Your feedback after each cycle will be helpful for them as they move forward with their next cycle.

Remember, the purpose of a PDSA cycle isn't to learn just if something is effective; it's to learn why or why not something is effective.

Here are the four steps of the PDSA cycle; you can use these to guide your students during their quality improvement projects.

1. Plan: Plan the test or observation, including a plan for collecting data.
    - State the objective of the test.
    - State the questions you want to answer and make predictions about what will happen and why.
    - Develop a plan to test the change. (Who? What? When? Where? What data need to be collected?)
2. Do: Try out the test on a small scale.
    - Carry out the test.
    - Document problems and unexpected observations.
    - Begin analysis of the data.
3. Study: Set aside time to analyze the data and study the results.
    - Complete the analysis of the data.
    - Compare the data to your predictions.
    - Summarize and reflect on what was learned.
4. Act: Refine the change, based on what was learned from the test.
    - Determine what modifications should be made.
    - Prepare a plan for the next PDSA.

Champion Tip: Here are some tips for coaching PDSA Cycles

- Avoid analysis paralysis. Begin testing changes as quickly as possible.
- Start small. Test with one patient, one nurse, one doctor.
- Emphasize to students that PDSA cycles are for learning. A test that fails is sometimes more useful than a test that is successful.
- Don't forget to have students make predictions. That's where the learning comes from!
- Make sure data collection methods are clear and accurate.

Remember, at this point we aren't expecting improvement – although that would be great!

7 - TIPS ON DATA PRESENTATION AND PROJECT SUMMARY

We ask students to submit a run chart because it is a simple, effective tool for displaying and learning from improvement data. The chart needs to show a picture of data over time (not just pre- and post-change), be clearly annotated, have a clear title, and be simple to understand. The excel file in the QI104 IHI Open School course will make this easy for them! Sample Documents can be found in the IHI Open School QI Practicum Learner Handbook: http://www.ihi.org/education/ihiopenschool/courses/documents/practicumdocuments/learnerhandbook.pdf

The project summary is essential as it pulls together all of the information from the project and asks learners to reflect on their experience and the project's impact on the health system. You may need to help learners think about how their project could be generalizable and sustainable.

Each institution will have a different way of determining to what degree a quality improvement project summary can be published and shared. Your local IRB or the quality improvement director at your institution may be able to provide guidance.

8 - SUSTAINING PRACTICUM PROJECTS AND ACHIEVING IMPROVEMENTS

Your students have completed the project. What do you do next?

- Consider this to be a pilot project for future students and other health system sponsors.
- Identify ways to align the project with clinical setting priorities so as to encourage the project to be sustained.
- Seek out venues to disseminate project results within your institution. This could be public poster/storyboard displays, articles in institutional newsletters, emails to educational/clinical groups, abstract presentations at local conferences, specialty/profession-based conferences, and quality improvement conferences (e.g., UTIHI's annual conference)

9 - QUESTIONS AND COMMENTS

University of Toronto Chapter - Institute for Healthcare Improvement Open School, *utihi.com*

If you have any questions, or would like to speak to us regarding the suitability of potential project ideas, please reach out to Tafsia Hussain and Julia Novielli at utihi@studentorg.utoronto.ca.

General Inquiries to UTIHI can be addressed to: utihi@studentorg.utoronto.ca

Institute for Healthcare Improvement, *ihi.org*

If you have any general questions or concerns about the IHI Open School Quality Improvement Practicum or IHI Open School QI Courses, please contact the IHI Open School team at openschool@ihi.org

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