SHINe
SINGAPORE HEALTHCARE IMPROVEMENT NETWORK

LEARNING

QUALITY IMPROVEMENT

WITH GAMES & ACTIVITIES

A How-to-Guide for Healthcare Quality Improvers

HABITS OF AN IMPROVER

MARSH MALLOW

CATCH NO BALL

This publication is produced by Singapore Healthcare Improvement Network (SHINe)

SHINe (2014-2019)

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FOREWORD

The inspiration of this book came spontaneously while we were having dinner together after a learning session of Singapore Healthcare Improvement Network (SHINe)'s Reduce Harm in Patients Collaborative.

The development of the content for each learning session saw the team seeking inspiration from many sources - materials from other institutions, personal hobbies, leisure experiences, and even children's toys - and adapting them for educational purposes in quality improvement.

With the closure of the Collaborative, we re-visited our earlier conversation which led to the creation of this book. The journey to bring these games and activities to fruition had been an exhilarating expedition for all of us. In this book, we would like to share with you the learning (and the fun!) we had in preparing, setting up and delivering these interactive games and activities.

We hope you will have fun using and adapting these activities for your organisation's purpose.

We invite you to share your feedback, adaptations and new learning with us as we continue our quality improvement journey.

PREFACE

The games in this e-book have been a testimony of the journey of the Singapore Healthcare Improvement Network (SHINe), a network of healthcare institutions formed in late 2012 with 23 founding organisations united by the common goal of improving patient outcomes. With the consensus of members, we embarked on a large-scale initiative (LSI) in 2014 with the goal of reducing harm (in particular, catheter-associated urinary tract infection, hypoglycaemia and venous thromboembolism) by 30% in 3 years. As part of SHINe's capability building and mutual learning efforts, learning sessions were conducted every six months for the 30 teams participating in the LSI. Games were an integral part of each of these learning sessions, as a way to teach QI methods and tools in a fun experimental way.

Games are fun and add to the learning pedagogy if played in the right spirit and in the right way. For SHINe, games were probably one of the most memorable moments, as observed from the high energy level generated at each learning session. All the games were designed as team games with every member's contribution (whether big or small) playing a part in their respective team's outcome. As the African proverb says: "If you want to go fast, go alone. If you want to go far, go together".

Through these games, participants learnt that failure is part of the learning and improvement process. The perfect solution is rarely (if ever) created in meeting rooms. Despite our best efforts, our plans will still need adjustments when the rubber hits the road. Planning is important but it should not paralyse actions. We should test our plans early once we have a working hypothesis. We also need to have the humility to admit when things are not working out as planned. Courage is required to review our strategies and tactics and question our assumptions, applying part of Peter Senge's double loop learning. Each game thus included time for participants to reflect and identify learning points and consider how to internalise/integrate new practices.

We celebrated each team's completion of the game regardless of their relative position to the goal, As with all quality improvement efforts, the aim is to be better at the end than when we first started. Sometimes we may take three steps forward and two steps back. At other times, it may be the reverse. What is important is perseverance and the direction of travel. As Mary Anne Radmacher said: "Courage doesn't always roar. Sometimes courage is the little voice at the end of the day that says I will try again tomorrow".

PREFACE

We successfully completed the LSI in 2017 and the 30 teams collectively achieved savings of nearly $6 million from reductions in admissions, savings in bed days and a decrease in adverse incidents. This would not have been possible without the teams' willingness to learn and support each other.

The encouragement and support of their respective senior leadership as well as funding from the Ministry of Health also played a key part in the success of the LSI, demonstrating the importance of not just the players of the game but their supporters.

We humbly offer this collection of games to the quality improvement community and hope that you will find it useful. We also hope that you will have fun playing them and find joy in the quality improvement journey.

All change is local. As such, do feel free to adapt them to suit your context just as we ourselves had adapted them for our classrooms. Finally, we wish you all the best as you strive to continuously improve to better address what matters to your patients and their loved ones. As someone once said: "To be the best, we must be the best at improving".

Adj Professor Lee Chien Earn
Chairman, SHINe

INTRODUCTION

Quality improvement (QI) refers to the framework with its tools and methods to systematically improve the delivery of care to patients.

QI is about giving the stakeholders or persons affecting the care quality to solve a problem systematically, with the aim of reducing process variation and improving outcomes for patients, healthcare organisation and system.

An understanding of quality improvement and its know-how is therefore essential for both stakeholders who manage and deliver care, as well as users of these services.

In Singapore, there is a growing interest in using physical games and activities for learning in quality improvement. This is because games and activities focus on the affective domain of adults' learning experience through enabling people to learn things in a fun way.

WHY GAMES?

- Team games help participants to collaborate better.
- Games with role-playing may increase the participants' knowledge of specific content or situation through practising these roles during the learning experience.
- Games that situate participants in scenarios where they have to solve problems within specified parameters and time constraints can enhance problem-solving skills.
- Games improve communication skills as participants are required to interact and present results of the game or activity.
- Games can be designed to cater to both types of thinkers who process information differently. Internal thinkers can have some space to explore the discussion during the game or activity and bring their thoughts together privately. At the same time, external thinkers can have time to openly share their ideas. Both groups will arrive at some conclusions and fulfil the intended learning objectives.

The strategies and techniques used to engage and motivate learners in game-based learning include the following:

- Piquing the interest of each learner and getting him/her to go on a personalised learning experience by using the design of the game
- Using stories that would resonate with the learners
- Focusing on the learning as the primary objective as opposed to winning or losing, unless the game's objective is about learning from failure
- Encouraging and guiding learners continuously and in real time throughout the game's duration, to enable them to self-check or team-check to take remedial action while in the game
- Promoting interaction among learners and fostering collaboration

ADAPTING GAMES

There are physical games and activities for specific needs e.g., for team building which are available widely on the internet. However, some of these activities may not focus on quality improvement or they have been designed for small groups of participants.

When we first started using games to deliver quality improvement concepts, we took inspiration from the Institute for Healthcare Improvement (IHI)'s website and from the article by the National Quality Center (2006)*.

The games and activities designed for small groups can be adapted for large scale, taking into consideration the following:

- Additional resources that may be needed e.g., the games or activities' materials, time for participants to do the activities and share their findings and facilitators to deliver the game or activity
- Having a co-presenter or a few facilitators to help manage the game or activity
- Starting on time so that the participants are not restless while waiting
- If you are conducting the game, ensure you can be heard by all participants throughout the session, including taking into consideration the size of the room, its acoustics and technology aid requirements. Use one or more of the strategies to attract their attention like:

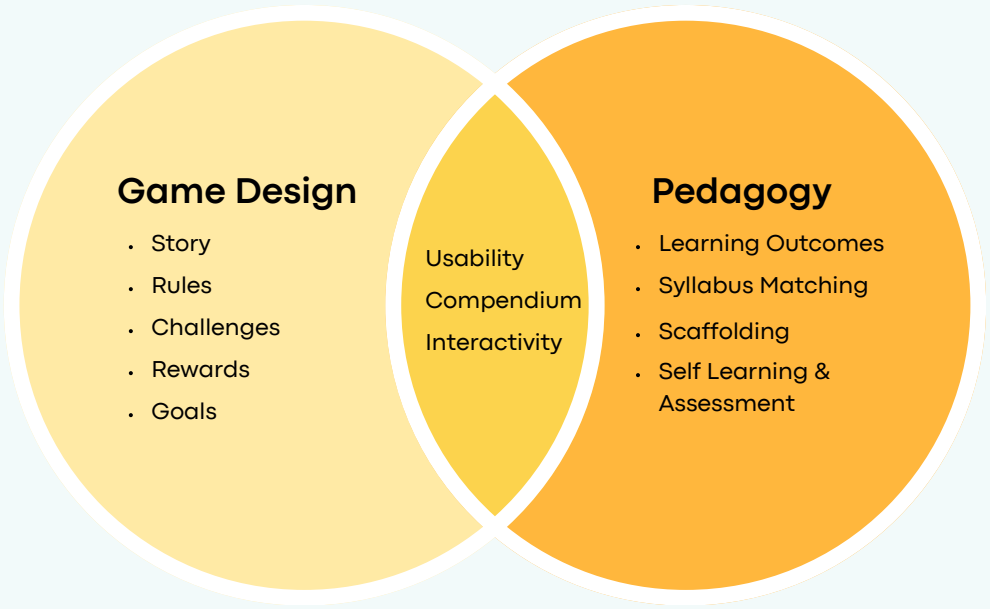
  1. Modulating the tone and volume of your voice
  2. Raising your hand
  3. Clapping your hands twice
  4. Tinkling a glass

Additional tips for the design of the delivery of the game or activity:

- Plan how the game or activity is to be delivered including the setup required
- Provide simple and clear instructions
- Understand the intent of the games or activity's script to help participants experience the intended learning
- Build up into a crescendo while preserving the sense of adventure

**The Game Guide: Interactive Exercises for Trainers to Teach Quality Improvement in HIV Care (National Quality Centre, 2006)*

HOW TO DESIGN A GAME FROM SCRATCH



The games and activities in this book can be adapted for the virtual setting.

Considerations would include:

- Availability of resources to fulfil the requisites of the games
- Adherence to existing policies to ensure the game can be done safely for the participants within privacy and security regulations

HOW TO USE THIS GUIDE

These games were originally developed to impact QI concepts at large-scale learning activities comprising 50-300 persons.

We have listed the quality concepts in the following pages so that you can identify the relevant games for each topic.

For each game, we have stated;

- Objectives & QI concepts
- Recommended level for learners
- Materials & preparations required
- Activities & timings
- Setup of physical space
- Debriefing instructions
- References

DESCRIPTIONS OF THE CONCEPTS

PERSON-CENTREDNESS

Person-centredness describes a standard of care that ensures the needs of the individual are at the focus of care delivery. It ensures that the individual's preferences, needs and values guide clinical decisions, and the care provided is respectful and responsive to their needs.

There is increasing evidence that when individuals and healthcare personnel work in partnership, better patient outcomes and cost-effective healthcare systems can be achieved.

COMMUNICATION

Communication is a process of sharing and transmitting information, including thoughts and feelings from person to person or from one organisation to another. Effective communication supports the engagement of healthcare personnel in delivering and improving care in the organisation.

Communication for improvement requires the skills of the stakeholders involved, as well as methods and strategies, to help achieve the goals of the initiatives. The games and activities in this book are designed to create awareness for both individuals and teams on the importance of communication in improvement activities in their organisations, and the need to develop their skills when communicating with their Sponsor and Leadership team.

ENGAGEMENT

The word, ‘engage’, means to establish a meaningful connection with the person. To build will for change, engagement is an essential step to be made with patients and all stakeholders nvolved in the care delivery process.

An engaged patient is empowered to undertake self-management of their health. An engaged staff or team will feel valued for their contributions and as such, be inspired and motivated to help the team and organisation succeed. The games in this book are designed to help learners understand the importance of engagement within the team, with the patients, amongst the stakeholders, Sponsor and Leadership team as they co-create, test and implement the changes in the organisation.

MEASUREMENT

One of the questions in the IHI Model for Improvement is "How will we know the change is an improvement?'' A deep understanding of the healthcare process, together with quantitative measures, will demonstrate whether the change leads to improvement.

Measurement for improvement can show us how well our current process is performing, whether we have reached our aims, how much variation there is in our process, whether the tests of change result in improvement and whether the change in the process is sustained.

The games in this section are designed to help the learners understand the importance of measurement in improvement and the use of data to guide decision-making.

RELIABLE DESIGN

Reliable design is the method of applying reliability principles – prevent breakdown of the process in the system, identify and mitigate failures in the system and redesign the process based on the critical failures identified. Reliable processes and systems reduce defects in the system, increase consistency in the delivery of care processes and improve patient outcomes.

The games and activities in the book aim to impress upon the learners the thoughtful planning and execution of reliability principles when doing improvement work.

SOCIAL NETWORKING

A social network is the web of relationships that connect people together; the type of relationships include friendships, the flow of information or goods between people, business connections, etc. Social networking is the practice of expanding the number of business and/or social contacts by making connections through individuals.

As such, the social system is the patterned network of relationships that exist between individuals, groups and institutions. Within quality improvement, social systems is the understanding of the relationships between the people who are adopting the new ideas.

SPREAD

Spread is the process of increasing the adoption of localised, improved ideas in a segment of population or a pilot site. The spread approach of diffusion and dissemination is carefully planned and managed.

The Spread strategy for an organisation should include their Communication and Spread plans. The games and activities in this book demonstrate to learners how spread for improvement works and how to develop their skills in managing their Spread initiatives in their organisation.

SUSTAINABILITY

Sustainability is a stage when the new improved process is integrated and embedded into the organisation's working system.

The result of the change is effective and efficient. Data shows improved processes and clinical outcomes and there are support systems present for the organisation.

TEAMWORK

Teamwork in the healthcare setting is a collaborative effort of a group of interdependent healthcare professionals and staff to achieve a common goal in the delivery of the care process. It starts with a shared understanding of the importance or urgency of the problem, with each person in the team pulling in the same direction and ultimately working together effectively and efficiently to deliver care.

Teamwork vs Collaboration

Both teamwork and collaboration involve a group of people working together to complete a shared goal. The key difference is that teamwork combines the individual efforts of all team members to achieve a goal whereas people involved in a collaboration complete a project collectively.

Those collaborating work together as equals, usually without a leader, to come up with ideas or make decisions together to attain a goal. Teamwork is usually overseen by a leader who delegates tasks to every team member. Completion of the individual tasks contributes towards the team's end goal.

TESTING & MAKING CHANGES

Testing on a small scale and with multiple cycles builds knowledge that the change will result in improvement to the care delivery process. The change ideas are tested in different populations and settings so that it can be adapted for better fit to the respective settings.

Many games in this book are designed to teach the method of testing and adaptation, i.e., Plan-Do-Study-Act (PDSA).

SYSTEMS 

Systems is a set of interconnected parts and mechanisms that are organised within a complex whole. The interconnectedness of the processes in the system means that if one process changes, the other processes are likely to be affected.

Edward Deming said, "Every system is perfectly designed to get the results it gets". The games and activities related to this concept are designed to impress upon learners the importance of understanding the system when attempting changes on the care delivery process.

ACTIVITY 1

THE HABITS OF AN IMPROVER

Objectives

- To identify team strengths and gaps in relation to the Habits of an Improver paper
- To develop a team action plan to improve one of the habits

Concepts in Quality Improvement

- Peer to peer learning
- Engagement
- Systems

Recommended Level for Learners

Level		Description of Audience
	Personal Effectiveness	All staff functioning in their individual capacities, including their roles in teams
✓	Team Effectiveness	Staff participating in activities that improve the performance of micro- and meso-systems teams
	Organisational/ Leadership effectiveness	Organisational leaders, organisational level workgroup or committee leaders
✓	Quality Professionals	Staff of Quality and Safety departments, leaders with Quality and Safety functions

ACTIVITY 1

THE HABITS OF AN IMPROVER

Preparations

In order for the session to be most effective, teams should have been working together for some time and feel comfortable in sharing matters of concern or difficulties. A short bonding activity may be helpful at the beginning of the session.

Materials

1. An A3 printout of the Habits of an Improver* for each table (see **Annex A**)
2. Reflection sheet and 2 stickers for each participant, plus an additional reflection sheet and 2 stickers for each table (see **Annex B**)
3. Flip chart and marker pens

Setup

Classroom layout with 5 to 6 people per table (from the same team)

Game/Activity/Event Instructions

1. Introduction to the session (Please refer to Annex C Facilitator Activity Tracking Sheet for timings)
2. Consider a short bonding exercise and team introductions
3. Lead facilitator will commence with a presentation on the Habits of an Improver* article
4. Self-reflection at each table: Each person will be given 2 stickers and a harvest sheet. (Annex B)
   Each person will reflect on the team's proficiency in these areas and paste the stickers on the harvest sheet
   Note: This part is the individual's reflection on his/her team "performance".
5. Team will share and look at each person's assessment of their team and determine:
   - The habit they collectively agree the team is proficient in. This is calculated by a consolidated team score = to 1x # of team members for thumbs up
   - Document the **rationale** for the score and how the team can demonstrate this proficiency (use flipchart and marker pens to document)
6. Teams will now:
   - Agree on an area for improvement. This is calculated by a consolidated team score = to 1x # of team members.
   - Document the rationale for this score. (see **Annex C**)

ACTIVITY 1

THE HABITS OF AN IMPROVER

7. Faculty will select one team to present one habit. Each team is given 8 minutes to share why they feel the team is good at that habit and how they got there (strategies/tools). There are only 5 habits. Allow 2 minutes for additional inputs from other tables, if needed

8. As teams are sharing, other teams should harvest ideas that can potentially be tried in their team

9. Each team will develop an Action Plan for improving one habit identified in step 6. Teams should discuss the ideas that have been shared and can potentially be tested by the team relevant to their chosen area of improvement.

   - Decide on at least one idea/tool and make a specific plan what is the team going to do? How are they going to do? Who might lead the team in this improvement journey? What are the team's predictions of what lies in the path (e.g. could be difficult as this is the first time)? What can be done to mitigate any risks?

   - How will the team define success? By when do they aim to address the area for improvement?

10. Each team to share their Action Plan. It is important to keep the momentum going so the teams may not need to share all of the plan but just the "what" and the "when".

11. Final comments/debrief including a plan to follow up with all teams within 8 to 10 weeks after the session. Here, teams will share activities they have undertaken to address the area for improvement that they had identified and any challenges faced.

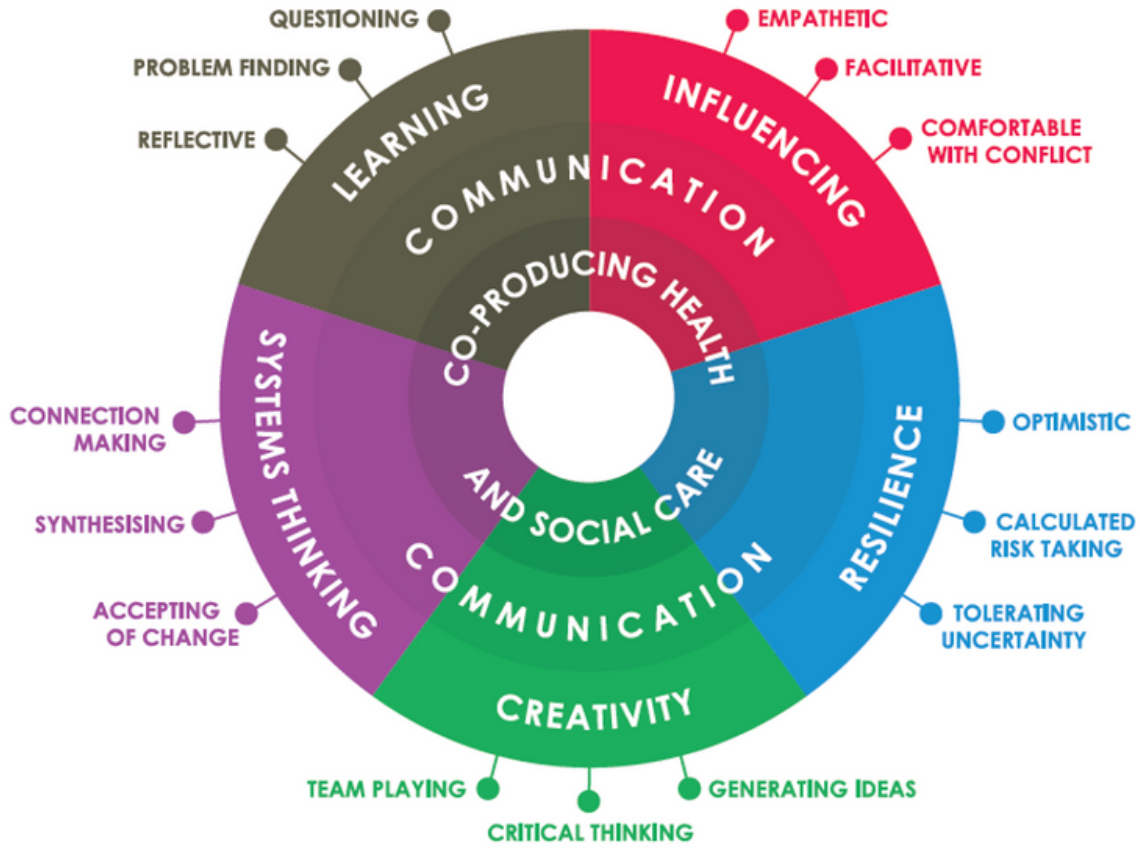
Reference

Lucas, B., & Nacer, H. (2015). The habits of an improver: thinking about learning for improvement in healthcare. The Health Foundation

ACTIVITY 1 - ANNEX A

THE HABITS OF AN IMPROVER

Figure 1 – The habits of improvers



Lucas, B., & Nacer, H. (2015). The habits of an improver: thinking about learning for improvement in healthcare. The Health Foundation

ACTIVITY 1 - ANNEX B

THE HABITS OF AN IMPROVER

My Reflection: Habits of an Improver

Habits	How is my team
CREATIVITY	
RESILIENCE	
LEARNING	
INFLUENCING	
SYSTEM THINKING	

Stickers

ACTIVITY 1 - ANNEX C

THE HABITS OF AN IMPROVER

Facilitator Activity Tracking Sheet

Habits of an Improver Session
2.5 hours

Details	Lead	Time for activity	Minutes remaining	Time on clock e.g. 2pm
Prep & Start			150	
Introduction to the afternoon	Lead facilitator	5	145	
Short bonding activity & intros	Lead facilitator & teams	15	130	
Presentation covering the 5 main elements of the habits of an improver* paper	Lead facilitator	15	115	
Self reflection on the habits of an improver* as applied to the Improvement Team	Individual participants	10	105	
Team to share at their table & agree collectively a habit the team is competent in	Individual teams	15	90	
Team to share at their table & agree collectively a habit the team can improve in	Individual teams	10	80	
Faculty to select one team to present for each habit	Lead facilitator & chosen teams	45	35	
Teams to develop an Action Plan for improving one habit	Individual teams	15	20	
Each team to share their Action Plan	Individual teams	15	5	
Debrief & Final remarks	Lead facilitator	5	0	

ACTIVITY 2

CRITICAL ANALYSIS OF PDSA - SPREAD

Objectives

- To understand and plan important considerations for spreading quality improvement efforts
- To understand the relevance to leadership, particularly support given for quality improvement teams to spread their initiatives. This is in accordance to the IHI Framework for Spread (Annex 1)

Concepts in Quality Improvement the Activity Teaches

- Spread
- Teamwork
- Systems

Recommended Level for Learners:

Level		Description of Audience
✓	Personal Effectiveness	All staff functioning in their individual capacities, including their roles in teams
✓	Team Effectiveness	Staff participating in activities that improve the performance of micro- and meso-systems teams
✓	Organisational/ Leadership effectiveness	Organisational leaders, organisational level workgroup or committee leaders
✓	Quality Professionals	Staff of Quality and Safety departments, leaders with Quality and Safety functions

ACTIVITY 2

CRITICAL ANALYSIS OF PDSA - SPREAD

Preparations:

Lead facilitator to prepare presentation slides

Teams to prepare list of their interventions and PDSAs

Materials:

1. A Framework for Spread (see **Annex A**)
2. Illustrations on the scalable unit and spread (see **Annex B**)
3. Seven Spreadly sins (see **Annex C**)

Setup

Classroom layout with 5 to 6 people per table.

Each facilitator may facilitate discussions at two to three tables at any one time.

Game/Activity/Event Instructions

A lead facilitator will start with a 30-minute presentation covering the following concepts:

a. How to develop the scalable unit (after learning from the different pilot sites) - (**Annex B**)

b. Plan-Do-Study-Act (PDSA) cycle for spread - How does this defer from piloting an idea initially.

c. The Seven Spreadly Sins (**Annex C**)

This is followed by a 60-minute table discussion by the participants within their groups on how they would like to improve when learning and implementing the intervention(s) at spread sites.

Conclude the activity with table sharing from different groups on their discussions.

Reference

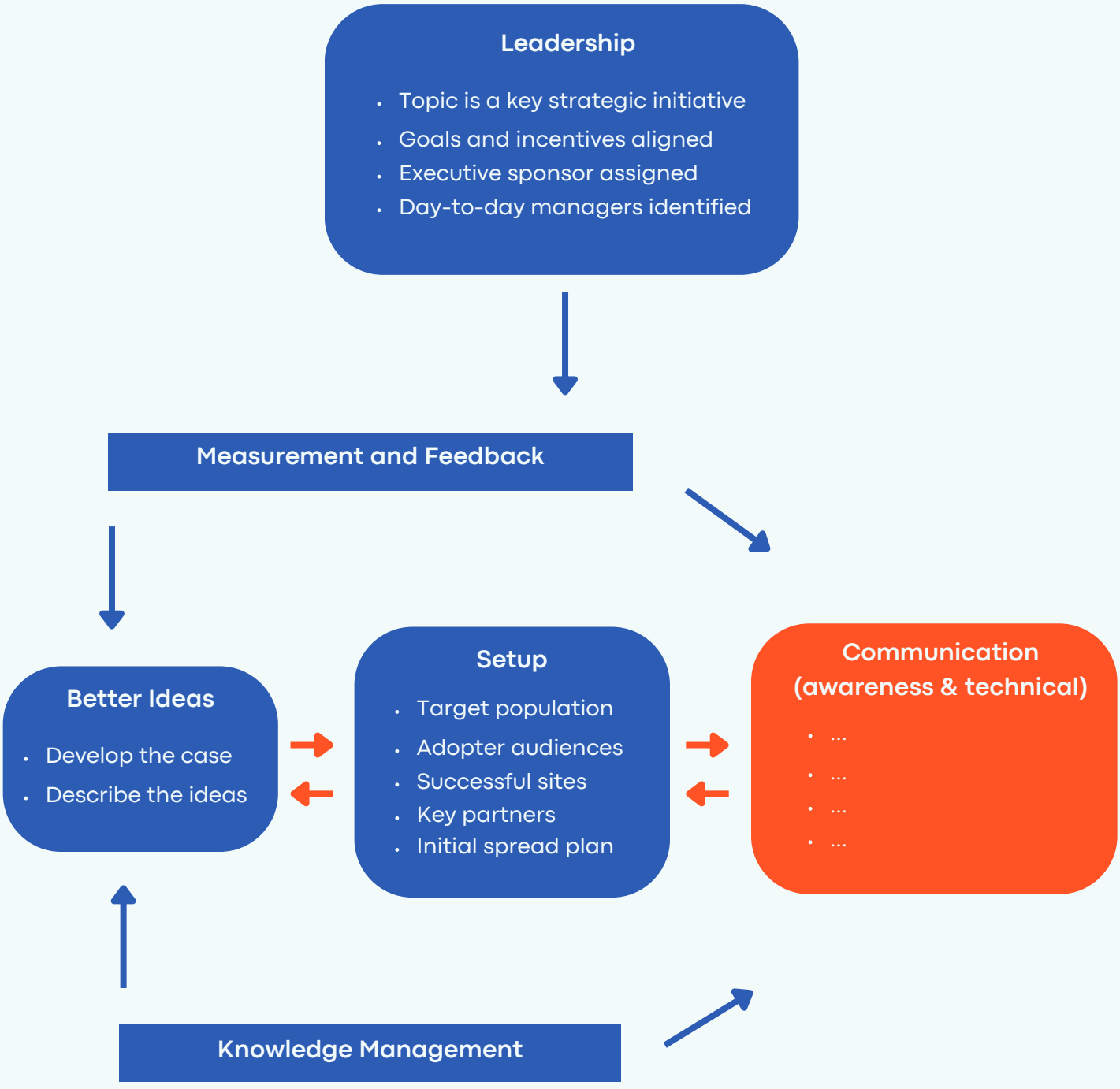
Massoud MR, Nielsen GA, Nolan K, Schall MW, Sevin C. A Framework for Spread: From Local Improvements to System-Wide Change. IHI Innovation Series white paper. Cambridge, MA: Institute for Healthcare Improvement; 2006. (Available on www.IHI.org)

Haraden C, Resar R. Practical Tips for Successful Sharing- Seven Spreadly sins. Institute for Healthcare Improvement, 2015. (Available on www.IHI.org)

ACTIVITY 2 - ANNEX A

CRITICAL ANALYSIS OF PDSA

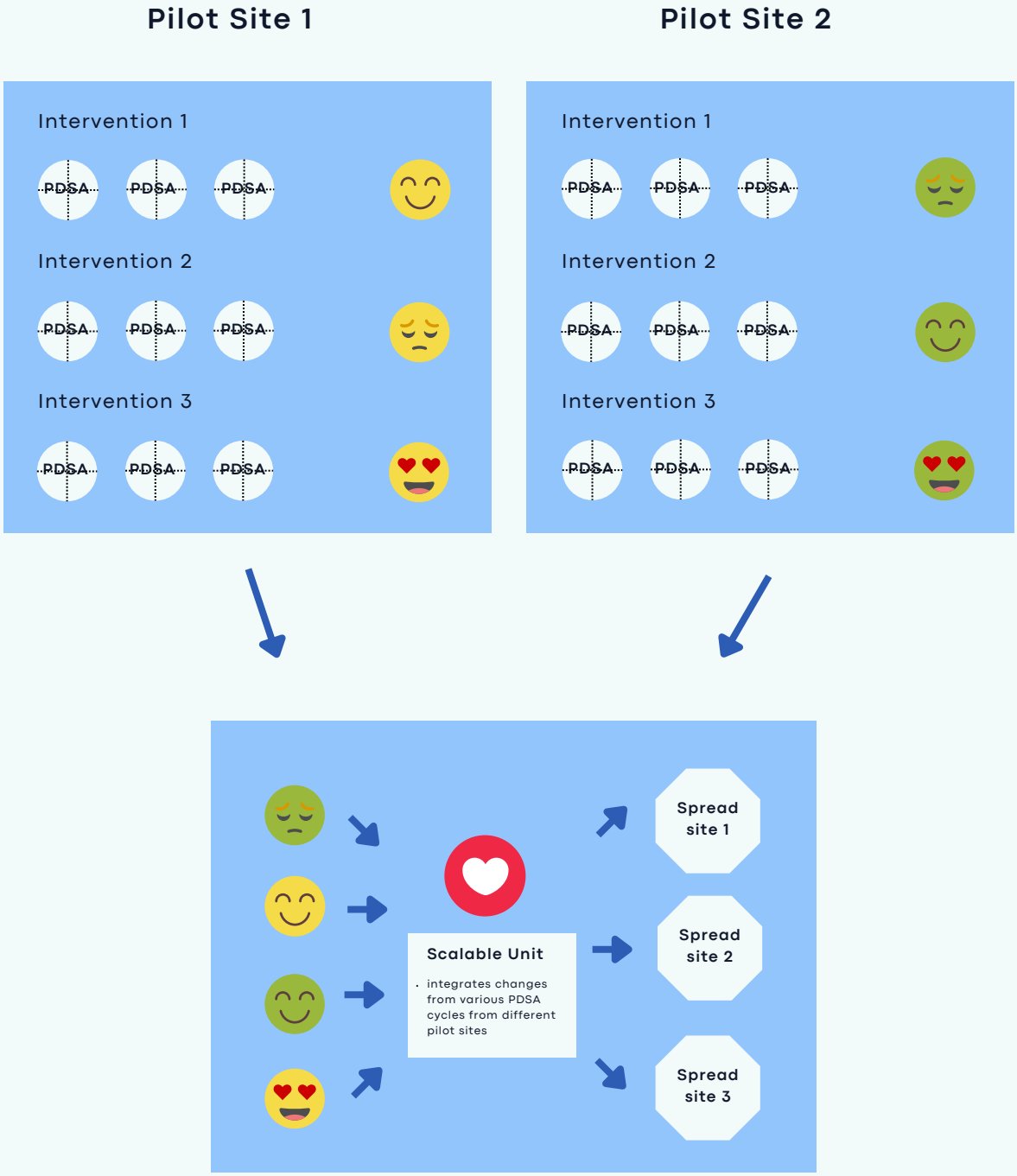
A Framework for Spread



ACTIVITY 2 - ANNEX B

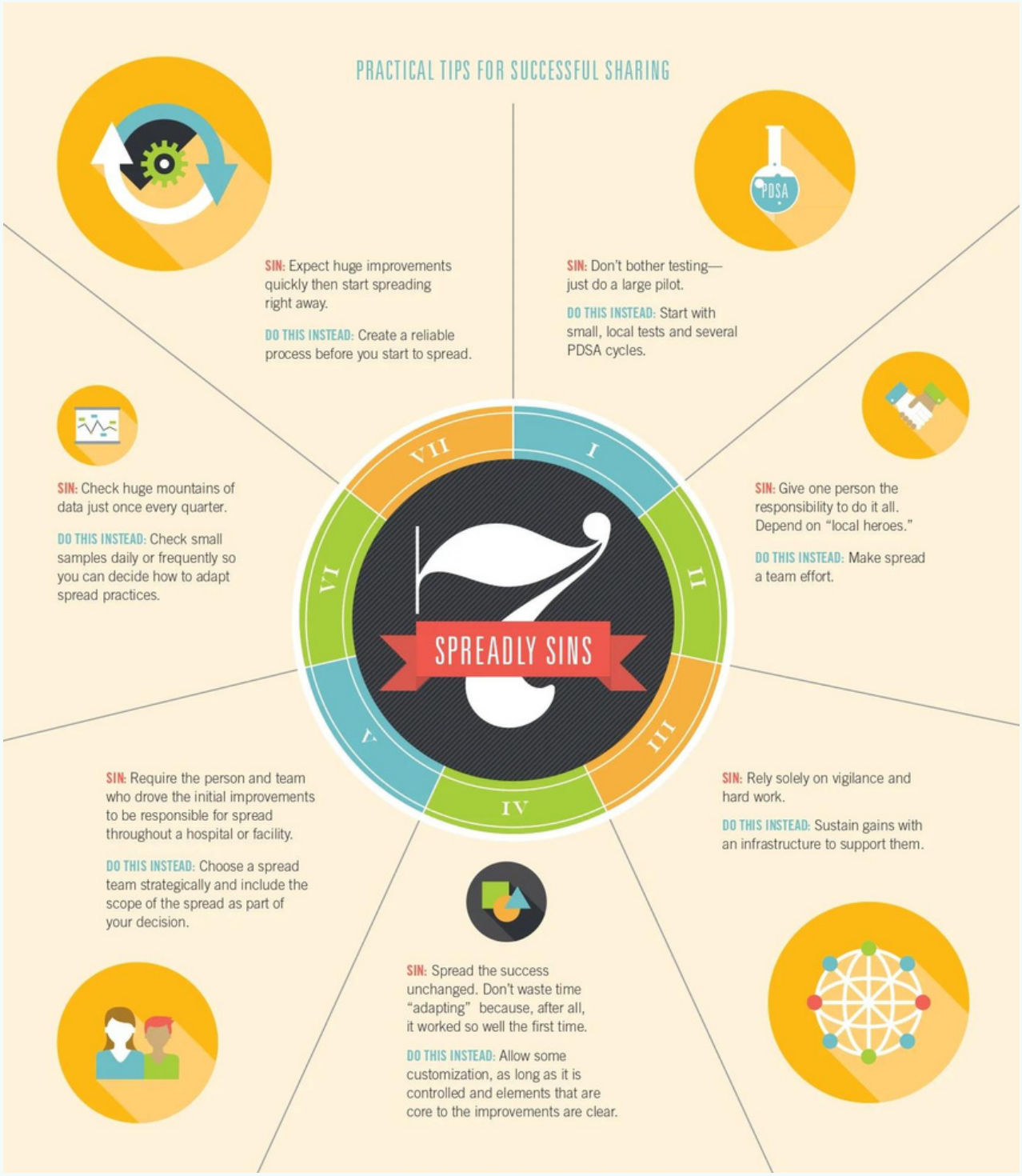
CRITICAL ANALYSIS OF PDSA

How to develop "The Scalable Unit" from multiple pilots



ACTIVITY 2 - ANNEX C

Source: Institute for Healthcare Improvement



Reference: Institute For Healthcare Improvement (IHI)

ACTIVITY 3

END OF LEARNING SESSIONS POSITIVE VIDEOS

Objectives

The influence of digital videos in our lives is undeniable and the use of videos has helped teachers teach abstract topics. At our learning sessions, we leveraged on the use of these videos to create a positive learning environment - a pre-requisite to effective learning.

The objectives of screening positive videos are to:

- prompt learners to reflect upon their learning and progress;
- promote positive vibes and energise improvement teams in their forward-moving journey for their projects; and
- help learners be engaged and emotionally invested in their improvement work.

Concepts in Quality Improvement the Activity Teaches

- Engagement
- Social networking
- Sustainability
- Celebration

Recommended Level for Learners:

Level		Description of Audience
	Personal Effectiveness	All staff functioning in their individual capacities, including their roles in teams
✓	Team Effectiveness	Staff participating in activities that improve the performance of micro- and meso-systems teams
✓	Organisational/ Leadership effectiveness	Organisational leaders, organisational level workgroup or committee leaders
✓	Quality Professionals	Staff of Quality and Safety departments, leaders with Quality and Safety functions

ACTIVITY 3

END OF LEARNING SESSIONS POSITIVE VIDEOS

Preparations

Selection of video:

1. Determine the message or theme or improvement concepts you would like the learners to take away. The video could also be a boost or add-on to meet the objectives of the didactic session.
2. The video should be:
   a. a short clip – approximately 5 to 10 minutes. This is because many studies have shown that the average attention span is 7 to 15 minutes
   b. of good quality
3. Go to the internet to find a suitable video. Use keywords to locate them. Watch the video to ensure the contents satisfy the needs.
4. Select videos based on the theme of the Learning Session - e.g. to inspire people, to promote sharing, to advocate for change etc.

Game/Activity/Event Instructions

Reflection sheet:

1. Introduce video and explain reflection sheet
2. Play video
3. Give 3-5 mins for reflections
4. The participants at the table to share their reflections
5. Share and reinforce the message behind video

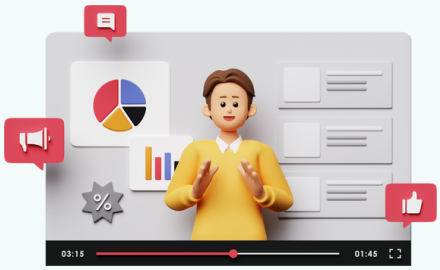
ACTIVITY 4

THE MARSHMALLOW CHALLENGE

Objectives

This exercise can be used to teach many aspects of quality improvement (QI). However, the focus here is to highlight the importance of Plan-Do-Study-Act (PDSA).

Concepts in Quality Improvement the Activity Teaches



- PDSA
- Testing and making changes
- Systems

Recommended Level for Learners:

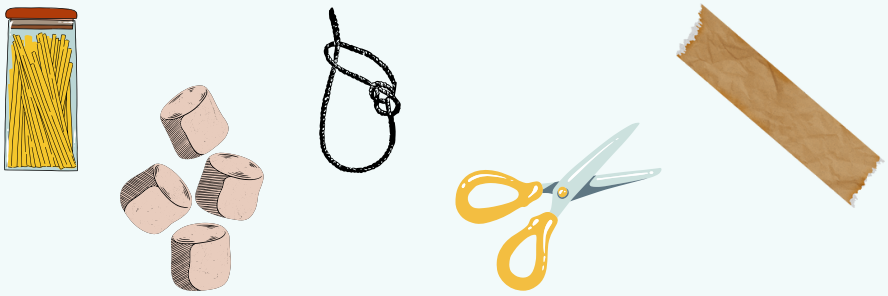
Level		Description of Audience
	Personal Effectiveness	All staff functioning in their individual capacities, including their roles in teams
✓	Team Effectiveness	Staff participating in activities that improve the performance of micro- and meso-systems teams
	Organisational/ Leadership effectiveness	Organisational leaders, organisational level workgroup or committee leaders
✓	Quality Professionals	Staff of Quality and Safety departments, leaders with Quality and Safety functions

ACTIVITY 4

THE MARSHMALLOW CHALLENGE

Materials

1. A pack including:
   a. 20 sticks of spaghetti
   b. 1 large marshmallow
   c. 1 metre of string
   d. 1 pair of scissors
   e. 1 metre of tape
   f. PDSA form (see Annex A)



Note: The pack takes time to prepare so it is advisable to prepare this at last one day before the activity is played

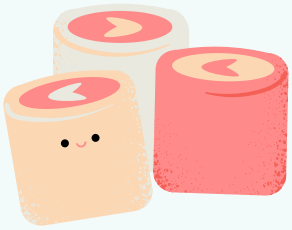
Setup

Classroom layout with 4 to 6 people per table (maximum 40 pax)
Lead facilitator will require a timer, measuring tape and flip chart for results.

ACTIVITY 4

THE MARSHMALLOW CHALLENGE

Game/Activity/Event Instructions



See Annex B for detailed timings;

1. Introduction to the session (5 minutes)
2. Introduction of tables/teams (10 minutes)
3. Brief review of the Model for Improvement (MFI) and building knowledge through the use of PDSA cycles (10 minutes)
4. Introduction to the Marshmallow Challenge (3 minutes)

Specific instructions:

Teams should be instructed on the end goal – to build the tallest freestanding* structure, using as much or as little of the contents of the pack as they wish.

The whole marshmallow must be at the top of the structure and the whole structure must remain intact.

Highlight to the teams:

- structure must be free standing (measured from the top of the table to the top of the structure)
- structure must include the whole marshmallow
- structure cannot be hanging from the ceiling
- cannot be reinforced/supported by items not provided or approved by the facilitator
- no sharing of resources with other teams
- broken or missing items will not be replaced

5. Conduct the challenge (18 minutes)
6. After 18 minutes, stop the challenge and measure and share results on tower heights. (5 minutes)
7. Individual teams to discuss their reflections (particularly around PDSAs) followed by group sharing. (15 minutes)
8. Debrief and share results from around the world and any final comments. (5 minutes)

Reference

Tom Wujec: Build a tower, build a team (adapted from Peter Skillman)

https://www.ted.com/talks/tom_wujec_build_a_tower_build_a_team

Note: originally developed as an exercise in collaboration and creativity. Adapted with an emphasis on small scale, rapid testing with additional learning around team work, systems thinking etc.

IHI: http://www.ihi.org/resources/Pages/Tools/PlanDoStudyActWorksheet.aspx

ACTIVITY 4 - ANNEX A

THE MARSHMALLOW CHALLENGE

Template: PDSA Worksheet

Objective:

1) Plan

Plan the test, including a plan for collecting data.

Questions and predictions:

-
-

Who, what, where, when:

Plan for collecting data:

2) Do

Run the test on a small scale

Describe what happened. What data did you collect? What observations did you make?

3) Study

Analyse the results and compare them to your predictions

Summarise and reflect on what you learned:

4) Act

Based on what you learned from the test, make a. plan for your next step

Determine what modifications you should make - adapt, adopt, or abandon:

Reference: https://www.ihi.org/resources/pages/tools/plandostudyactworksheet.aspx

ACTIVITY 4 - ANNEX B

THE MARSHMALLOW CHALLENGE

Facilitator Activity Tracking Sheet

MFI,PDSAs and the Marshmallow Challenge
75 minutes (max class size of 40 pax at 8 tables)

Details	Lead	Time for activity	Minutes remaining	Time on clock e.g. 2pm
Prep & Start			75	
Introduction to the afternoon	Lead facilitator	5	70	
Introduction by tables/teams	Individual teams	10	60	
Brief review of the Model for Improvement (MFI) and building knowledge through the use of PDSA cycles	Lead facilitator	10	50	
Introduction to the "Marshmallow Challenge"	Lead facilitator	3	47	
Conduct the "Marshmallow Challenge"	Individual teams	18	29	
Measure tower heights and share results with the group	Lead facilitator	5	24	
Teams reflections on the exercise	Individual teams	10	14	
Each team to share one reflection	Individual teams	5	9	
Brief wrap up sharing results from the challenge when conducted around the world	Lead facilitator	5	4	
Buffer	Lead facilitator	4	0	

ACTIVITY 5

LEARNING THROUGH COMPETITIVE CHALLENGES

Objectives

The team activity enables learners to be creative as they learn and develop the materials for the challenge. It provides an opportunity to do a fun activity as a group and appreciate all participating teams' creation.

Concepts in Quality Improvement the Activity Teaches

- Teamwork
- Social networking
- Celebration

Recommended Level for Learners

Level		Description of Audience
	Personal Effectiveness	All staff functioning in their individual capacities, including their roles in teams
✓	Team Effectiveness	Staff participating in activities that improve the performance of micro- and meso-systems teams
	Organisational/ Leadership effectiveness	Organisational leaders, organisational level workgroup or committee leaders
✓	Quality Professionals	Staff of Quality and Safety departments, leaders with Quality and Safety functions

ACTIVITY 5

LEARNING THROUGH COMPETITIVE CHALLENGES

Preparation

1. Agree on the theme and challenge for the competition. It could be the themes of the didactic session which the learner does an activity in a group and enter their work in a competition.
   Then, design the challenge which sparks and spurs the teams to achieve the purpose of the theme.

Examples of the names and themes or purpose of the activity can include:

Name of Activity	Theme / Purpose
A View from the Other Side	Explore perspectives for another stakeholder or partner. Find out what are needs and potential issues.
Joy in Improvement	Explore how to create a joyful, productive and engaged team
Pasar Pagi (Morning market in Malay)	Social networking; Platform to encourage learning and cross-fertilisation of ideas
Shared Responsibility and Commitment	Understand how setting a common goal or vision can create bonding, buy-in from different stakeholders
Harnessing Ideas from Patients for Improvement	Explore patient's and families' experiences in the healthcare setting. Understand what are unmet needs or harest ideas for possible solutions from patients
Together a Team	Explore what traits or practices can promote effective teamwork for a good outcome

ACTIVITY 5

LEARNING THROUGH COMPETITIVE CHALLENGES

2. Planning the challenge is an essential step to achieve the outcome of learning.

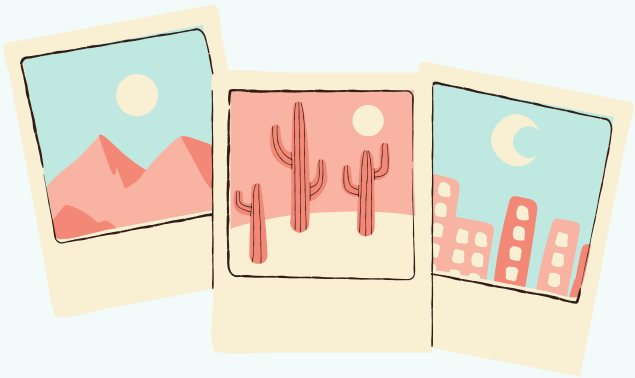
Factors to consider to run a successful challenge for learning are:

- How much time and effort should the learner put in to achieve the objectives of the activity. This should decide the time required to post and advertise the challenge and the duration of the competition;
- Ease of access to the materials and media to do the activity by the learners;
- Set a budget for the challenge. The cost to run the challenge and materials/media for learners to do the activity should be low;
- Have a prize which will excite the learners. The prize(s) should be purchased before the event day;
- Be familiar with the monetary rules and regulations which governs prize-giving and have the internal control processes in place;
- Judging criteria should be clear and transparent;
- Select the judges. You can include the learners and instructors of the learning event, and develop a fair voting process.
- Setup and sequence on event day including prize-giving ceremony.

3. The activity should start at least a month before the judging of the contest.

An advert of the contest should be designed, communicated and published to the learners. The advert should have the following features:

- Attention grabbing headline or name of contest
- Quick details of prize(s) and entry information
- Objective of the contest for learning



4. The marketing of the contest or communication to the learners about the contest can be done through e-mail adverts, meetings, dedicated repository platforms or any platform your organisation may have that can reach the intended learners.

5. Plan for Celebratory photos (harvest photos or how to submit)

ACTIVITY 5

LEARNING THROUGH COMPETITIVE CHALLENGES

Activity/Game/Event Instructions

1. The submissions of the contest are displayed or shown for judging.
2. The judging criteria are shown and communicated again to the Learners and judges. The voting criteria could contain elements or behaviour which reinforce the learning of the activity's concept(s). An example of the voting form. We have used stickers of various colours or clips as votes.

Photo: A voting grid for a project

Name of Project: _____

1				5					10					15
16				20					25					30
31				35					40					45
46				50					55					60
61				65					70					75
76				80					85					90
91				95					100					105

3. Provide a limited time (eg 5 minutes) for all participants to vote by placing a sticker against the project of their choice
4. You may need more than one person to help you count the votes.
5. Prize giving ceremony. Determine the persons to:
   a. announce the winner(s),
   b. give the prize(s) to the winner(s), and
   c. photograph the event
   d. the administrative process ensuring the internal controls or monetary rules for the prizes are followed

ACTIVITY 5

LEARNING THROUGH COMPETITIVE CHALLENGES

Annex A: Advertisement Challenge

Pasar Pagi

Objectives:

1. Sharing of ideas (What worked and what didn't)
2. Encourage collaboration and exchange of ideas amongst teams

Please indicate your interest to join this segment by replying to the email by 14 October 2016

Details:

- Each participating institution will be assigned a rectangular table and you may decorate it as you wish. No additional prizes will be given for decorations.
- Each participating institution is to bring your teams' improvement ideas, tools, e.g. measurement , prototype, crafts or anything that has helped in your teams' journey. The ideas/ tools/ strategies are to be shared with everyone who comes and visit your table.
- Each LS5 participant has a ticket to purchase the idea/tools/strategies of another institution.
- The institution that receives the most tickets at the end of the session will receive $200 vouchers.

Photo: Example of advertisement of a Challenge to promote learning, fertilisation of ideas and celebration

ACTIVITY 6

CRITICAL ANALYSIS OF PDSA - PILOT

Objectives

To understand that the pilot is a critical activity that involves the development of an approach, participant criteria, and pilot deliverables in quality improvement.

Concepts in Quality Improvement the Activity Teaches

- PDSA
- Rapid Test Change
- Teamwork

Recommended Level for Learners

Level		Description of Audience
✓	Personal Effectiveness	All staff functioning in their individual capacities, including their roles in teams
✓	Team Effectiveness	Staff participating in activities that improve the performance of micro- and meso-systems teams
✓	Organisational/ Leadership effectiveness	Organisational leaders, organisational level workgroup or committee leaders
✓	Quality Professionals	Staff of Quality and Safety departments, leaders with Quality and Safety functions

ACTIVITY 6

CRITICAL ANALYSIS OF PDSA - PILOT

Materials:

1. A PDSA Worksheet for Pilot (see Annex A)
   a. Desired Change Idea/s
   b. Plan out Test Idea/s for Change 1 large marshmallow
   b. Draw learning from test idea/s result 1 metre of string
   c. Action for test idea/s - adopt, adapt or abandon

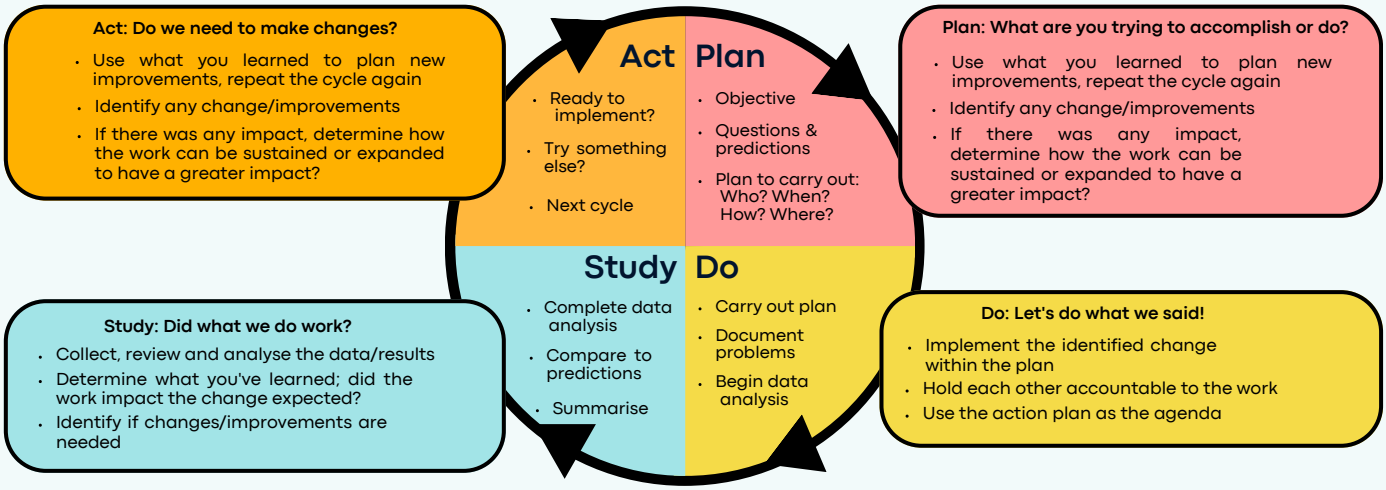
Game/Activity/Event Instructions

1. A lead facilitator will start with a 30-minute presentation recapping and covering the following concepts:

- Critical Analysis of PDSAs-Learning from what we have done to do things differently (refer to Figure 1)
- The cycle begins with the **Plan** step. This involves identifying a goal or purpose, formulating a theory, defining success metrics and putting a plan into action.
- Followed by the **Do** step, in which the components of the plan are implemented.
- The **Study** step comes next, where outcomes are monitored to test the validity of the plan for signs of progress and success, or problems and areas for improvement.
- The **Act** step finishes the cycle, integrating the learning generated by the entire process, which can be used to adjust the goal, change methods, reformulate a theory altogether, or broaden the learning.
- **Rapid PDSA** is the improvement cycle from a small-scale experiment to a larger implementation plan can be repeated over and over as part of a never-ending cycle of continual learning and improvement
- Explain briefly the Theory on Will of Change (see Annex B)
- Theory behind Testing Change (see Annex C)
- Walkthrough PDSA using example and tool (see Annex D,E,F,G)

Figure 1

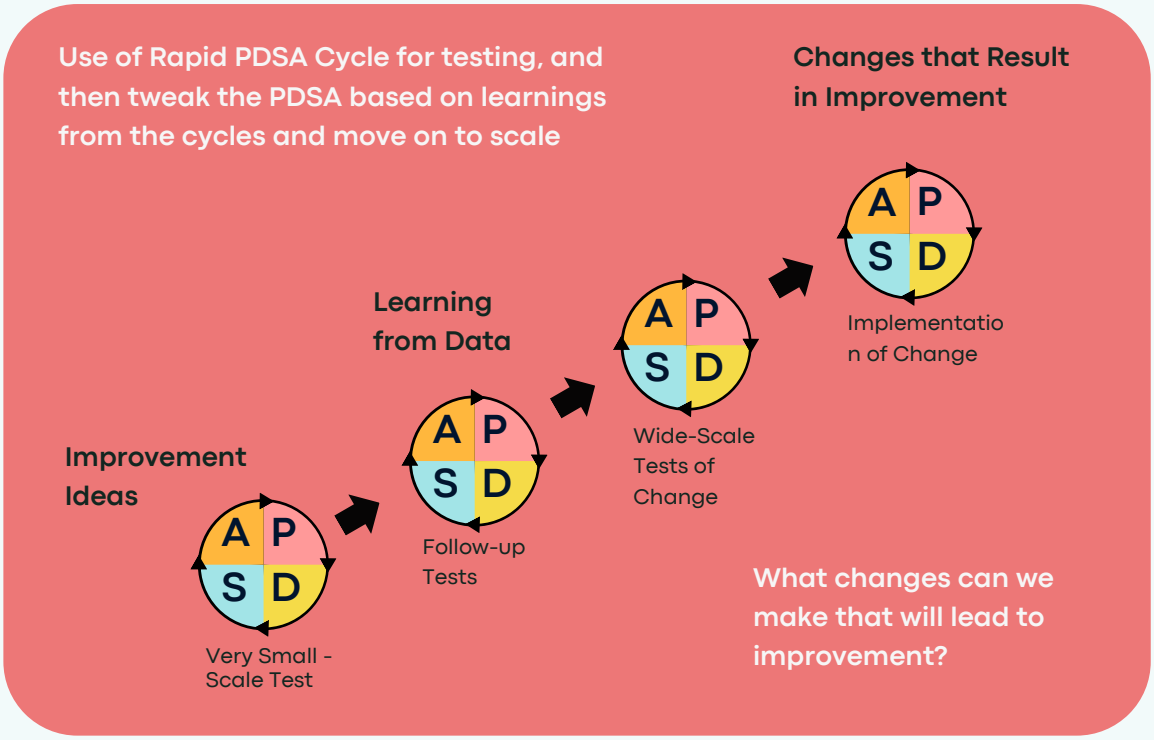
The PDSA for Learning and Improvement



ACTIVITY 6

CRITICAL ANALYSIS OF PDSA - PILOT

Figure 2



Activity/Game/Event Instructions

1. Allocate 10 minutes to arrange the groups (about 5 to 6 people per table). Distribute the PDSA Worksheets with a short briefing by the facilitator.
2. A 60-minute table discussion by the participants within their groups on how they would like to improve when learning and implementing the intervention(s) at pilot site/s.
3. Each facilitator may facilitate discussions at two to three tables at a time.
4. Give participants the opportunity to share feedback throughout the discussion process.
5. Conclude the activity and debrief.
6. Allocate 45 minutes for table sharing from different groups on their discussions and a 5 minutes session at the end for self-evaluations.

ACTIVITY 6 - ANNEX A

CRITICAL ANALYSIS OF PDSA - PILOT

PDSA Worksheet

Intervention # : _____

Linked to Root cause / Evidence of Gap: _____

What changes are we going to do next: (based on our findings)

Adopt (modify?)

Adapt (wider tests?)

Abandon (next test idea!)

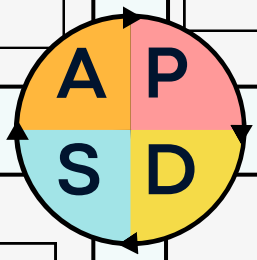
How to increase the probability of ...

- **Relative advantage**
- **Compatible with values**
- **Make it simpler**
- **Observable**
- **Trial able**

What exactly are we going to do?

Change desired:

Test Idea #1:	Test Idea #2:	Test Idea #3:
Hypothesis: (what it will do)	Hypothesis:	Hypothesis:
Prediction: (how good) Measurement:	Prediction: Measurement:	Prediction: Measurement:
Duration? How fast will I know it works?	Duration?	Duration?



What we learnt:

What we predicted:

Actual result:

- Successes
- Failures
- Surprises
- Unintended consequences

Test out the Plan (Operationalise)

1 (Prototype 1) | 1 (Prototype 2) | 1 (Prototype 3)

What resources will I need?

What will I observe? (data)

Confidence : (degree of belief)

Unexpected findings:

3 different conditions

(Condition 1) | (Condition 2) | (Condition 3)

Who is involved in my test? (staff)

When and how will we do it?

Confidence : (degree of belief)

Unexpected findings:

5 - How reliable is my process?

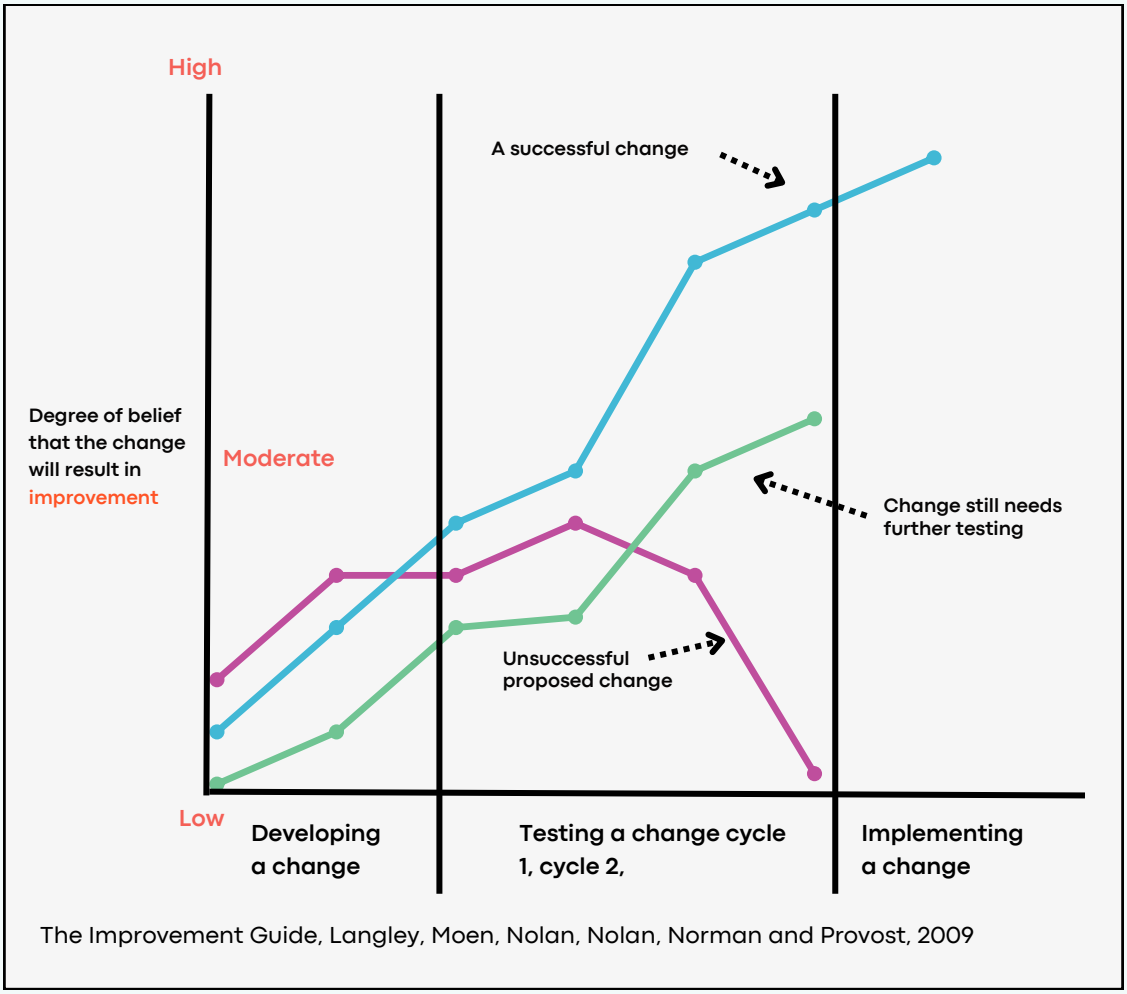
Confidence : (degree of belief)

Unexpected findings:

ACTIVITY 6 - ANNEX B

CRITICAL ANALYSIS OF PDSA - PILOT

Will the Change

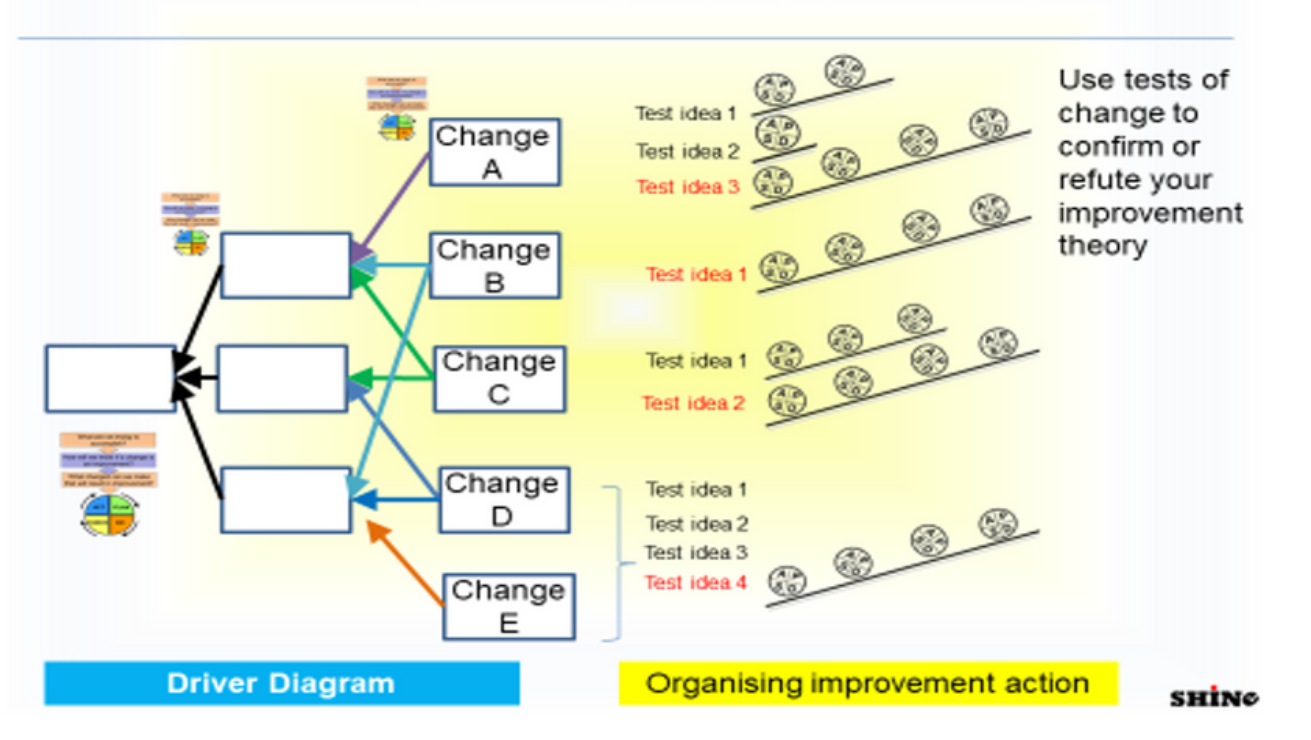


The Improvement Guide, Langley, Moen, Nolan, Nolan, Norman and Provost, 2009

ACTIVITY 6 - ANNEX C

CRITICAL ANALYSIS OF PDSA - PILOT

Testing change (big picture)



ACTIVITY 6 - ANNEX D

CRITICAL ANALYSIS OF PDSA - PILOT

PDSA - P (Plan)

What exactly are we going to do?

Change desired: Example: Patient needs to adopt self exercise regime at home (after dischage)		
Test Idea #1: Ward Nurse will give and educate Patient using "self-exercise" booklet	**Test Idea #2:**	**Test Idea #3:**
Hypothesis: (what it will do) Patients receive brochure will have good understanding & reference on self exercices	**Hypothesis:**	**Hypothesis:**
Prediction: (how good) (i) Patients will use brochure to refer during home exercise (ii) Nurse will give out brochure consistently **Measurement:**	**Prediction:** **Measurement:**	**Prediction:** **Measurement:**
Duration? How fast will I know it works? 3 days	**Duration?**	**Duration?**

ACTIVITY 6 - ANNEX E

CRITICAL ANALYSIS OF PDSA - PILOT

PDSA - D (Do)

Test out the Plan (Operationalise)

What resources will I need?

What will I observe? (data)

One shift

1 (Prototype 1) Nurse 1	1 (Prototype 2) Nurse 2	1 (Prototype 3) Nurse 3

Confidence : (degree of belief)

Unexpected findings: Refined brochure

Who is involved in my test? (staff)

When and how will we do it?

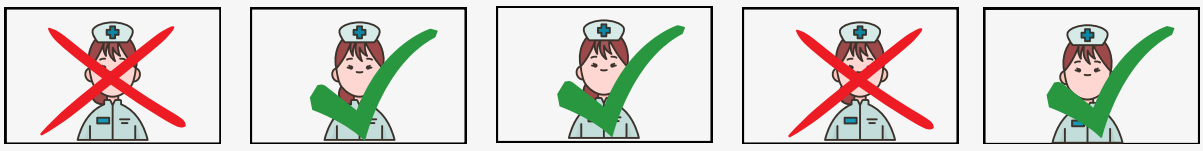
3 different conditions — Three shifts

(Condition 1) Monday AM	(Condition 2) Friday PM	(Condition 3) Saturday

Confidence : (degree of belief)

Unexpected findings: No PT to help answer questions (weekends)
Staff ratio low, Brochure only in English

5 - How reliable is my process? — Five shifts



Confidence : (degree of belief)

Unexpected findings: 60% nurses can correctly educate Patient with brochure
Protest by nursing

ACTIVITY 6 - ANNEX F

CRITICAL ANALYSIS OF PDSA - PILOT

PDSA - S (Study)

What we learnt:

What we predicted:

(i) Patients will use brochure to refer during home exercise

(ii) Nurse will give out brochure consistently

Actual result:

(i) Only 5% patients will use brochure to refer during home exercise

(ii) 60% of Nurses give out brochure consistently

Successes

Refined brochure

Failures

Need other languages

Surprises

None of the patients use brochure at home

Unintended consequences

Nurses think it is a job for Physio

ACTIVITY 6 - ANNEX G

CRITICAL ANALYSIS OF PDSA - PILOT

PDSA - A (Action)

What changes are we going to do next: (based on our findings)

Adopt (modify?)	Adapt (wider tests?)	Abandon (next test idea!)
○	✓	○

How to increase the probability of ...

Relative advantage

Ask Physio T.A. to educate patient + brochure

Compatible with values

Make it simpler

Observable

Trailable

Reference

Institute for Healthcare Improvement

http://www.ihi.org/resources/Pages/Changes/UsingChangeConceptsforImprovement.aspx

The Improvement Guide, Langley, Moen, Nolan, Nolan, Norman and Provost, 2009

SHINe Lesson 78- Learning from what we have done to do things differently – Critical Analysis of PDSAs, NL Pang, HK Chee, Bernard Wong

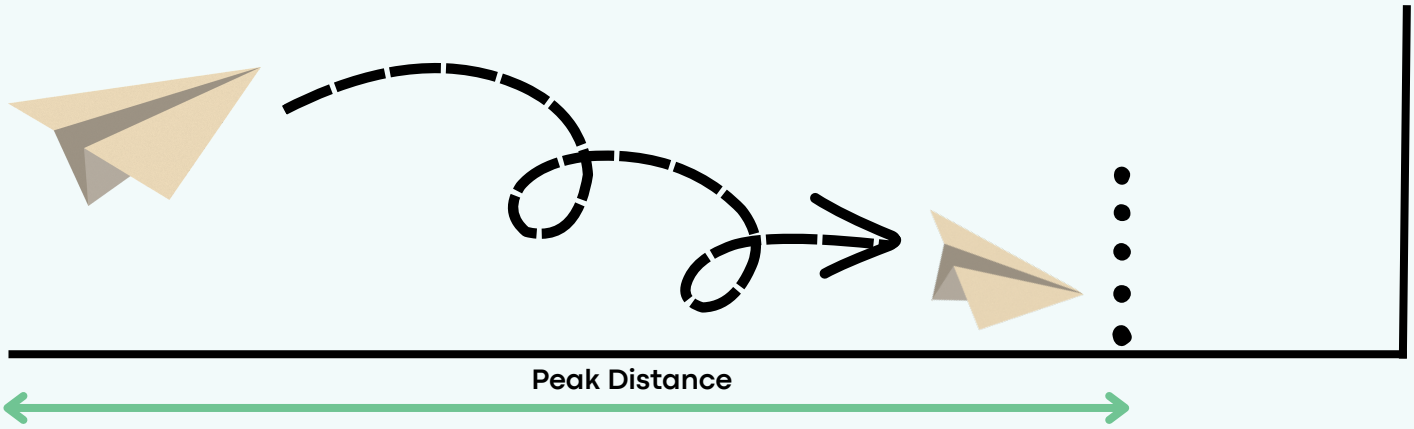
ACTIVITY 7

FLYING PAPER AIRPLANES

Objectives

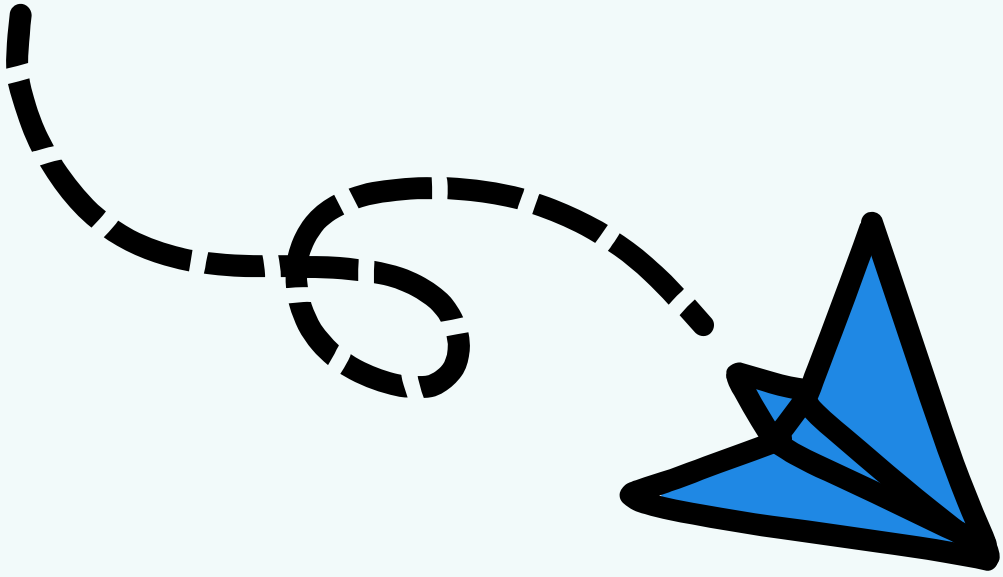
Perform rapid PDSA to achieve Peak Distance Performance

- Outcome measure: Peak Distance
- Process measures: The Four Forces of Balance



Concepts in Quality Improvement the Activity Teaches

- PDSA
- Testing and Making Changes
- Measurement
- Systems
- Teamwork



ACTIVITY 7

FLYING PAPER AIRPLANES

Recommended Level for Learners:

Please place a tick (√) the box(es) to reflect the target audience.

Level		Description of Audience
✓	Personal Effectiveness	All staff functioning in their individual capacities, including their roles in teams
✓	Team Effectiveness	Staff participating in activities that improve the performance of micro- and meso-systems teams
	Organisational/ Leadership effectiveness	Organisational leaders, organisational level workgroup or committee leaders
	Quality Professionals	Staff of Quality and Safety departments, leaders with Quality and Safety functions

Pre-work for facilitators

- Gather all materials for each group.
- Set up tables for 4 to 5 people with all materials.
- Identify someone to assist in facilitating the activity.
- Identify adequate space to test flying paper planes. (Approx 3m x 20m). Use marking tape to mark out launch line. Mark out indicators every meter to facilitate measurement. Also mark out a designated landing zone about 12m distance away from the launch line.

Materials

Pre-activity preparation (each group):

1. Four sheets of A4 paper of different colours - 4 model airplanes
2. A black, blue, red and green pen/fine marker
3. Measuring tape
4. A pair of scissors
5. Score sheet
6. "What makes a paper airplane fly?" guide
7. A zip lock bag

Optional materials (may be used if desired)

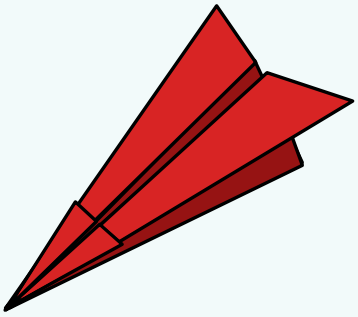
1. Three (3) standard paper clips
2. A roll of masking tape

ACTIVITY 7

FLYING PAPER AIRPLANES

Setup

- A long hallway or open space (about 20 meters or longer) and ideally within close proximity of the workshop/training/class area.
- Classroom layout: Size depend on the number of teams
- A table big enough for each team to construct their airplanes



Activity Instructions

- This activity takes a full hour to complete
- Explanation of Activity and distribution of pre-packed materials: 10 minutes
- 1st phase of activity time, reading through the guide: 5 minutes
- Each Production round 1 to 4 and testing:
  - Making an airplane by team members and launch: 3-5 minutes
  - Record and debrief 5 minutes

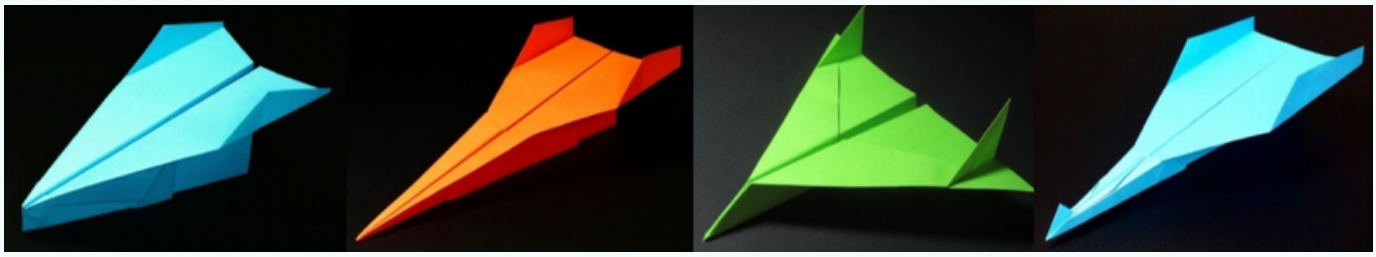
Team work

- Construct airplanes (preferably different member to fly the airplane for each PDSA cycle)
- Launch and reliably flying paper airplanes into a designated landing zone
- Data collection

Construction of Paper Airplanes

- Assigned team members design and construct paper planes using one sheet of coloured paper per plane. The objective is to design a plane that can fly the longest distance.

Examples of paper airplane constructions



Measurement guide

Data collection is the process of gathering and measuring information on targeted variables in an established system, which then enables one to answer relevant questions and evaluate outcomes. The goal for all data collection is to capture quality evidence that allows analysis to lead to the formulation change measures. Suggested data parameters could include aerodynamics, drag and gravity, distance, thrust and lift.

ACTIVITY 7

FLYING PAPER AIRPLANES

Score Sheet

Numeric Scale	PDSA 1	PDSA 2	PDSA 3	PDSA 4	Distance in Metre
10					>15
9					>10
8					8
7					7
6					6
5					5
4					4
3					3
2					2
1					1
0					0

Aerodynamic

Drag & Gravity

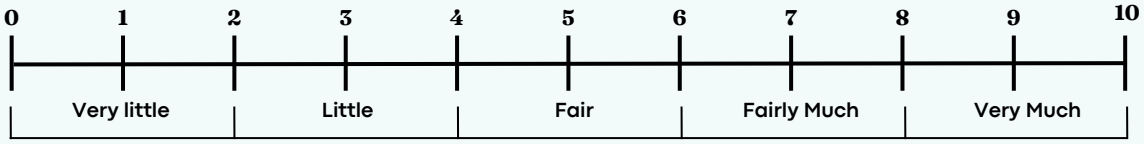
X Distance in Metre

Thrust & Lift

Balance: Four Forces

- To record and plot data point of each testing on chart
- Peak Distance in Centimetre: From airplane launch line to landing spot
- The Four Forces of Balance in scale from 1 to 10:

0-10 Numeric Rating Scale



- Aerodynamics: How easily an airplane moves through the air
- Drag & Gravity: Level of resistance moving through the air
- Thrust & Lift: Pilot effort
- The Four Forces in Balance: Balance of the four forces

ACTIVITY 7

FLYING PAPER AIRPLANES

Activity Instructions

- In the first phase of the activity, four of the team members are to construct their airplanes model after reading the following guide.

What makes Paper Airplane Fly?

AERODYNAMICS

- How easily an airplane moves through the air

DRAG & GRAVITY

- Drag: If you want your plane to fly far, you want a plane with as little drag as possible. Planes that push a lot of air, are said to have a lot of "drag", or resistance, to moving through the air.
- Gravity: A second force that planes need to overcome is "gravity". You need to keep your plane's weight to a minimum to help fight against gravity's pull to the ground.

THRUST & LIFT

- "Thrust & Lift" are two other forces that help your plane make a long flight
- Thrust: The forward movement of the plane. The initial thrust comes from the muscles of the "pilot" as the paper airplane is launched.
- Lift: Paper airplanes are gliders, converting altitude to forward motion. Lift comes when the air below the airplane wing is pushing up harder than the air above it is pushing down.
- Tips: The wings of a plane are curved so that the air moves more quickly over the top of the wing, resulting in an upward push, or lift, on the wing.

THE FOUR FORCES IN BALANCE

- A long flight occurs when these four forces - drag, gravity, thrust and lift - are balanced.

ACTIVITY 7

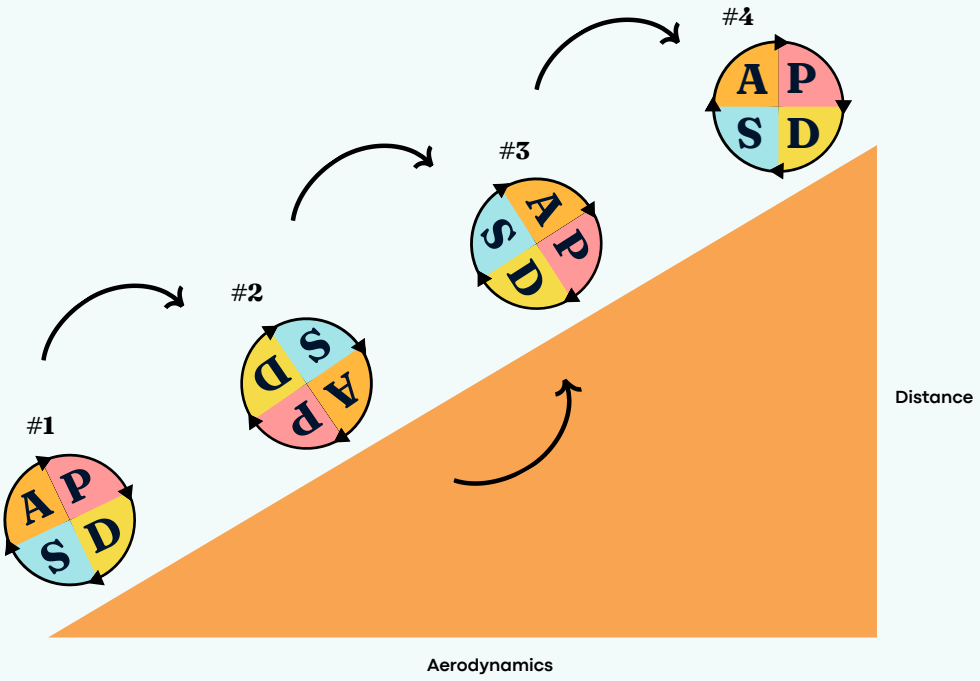
FLYING PAPER AIRPLANES

Activity Instructions

- In the second phase of the activity, one member of the team will fly their airplane from the launching line.

PDSA Testing - Perform Rapid PDSA to Achieve Peak Distance Performance

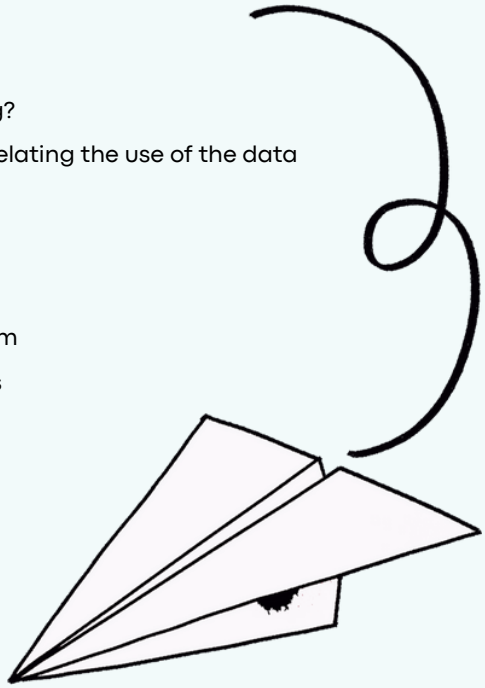
- Each team should complete 4 PDSA Cycles.
- The data collector should complete the score sheet before going on to the next cycle.



Share Your Learning Points

Each team takes 10 minutes to discuss and document on the flipchart:

- **Lessons drawn from PDSA testing -**
  - How confident did the group feel about achieving a successful landing?
  - Was the data easy to collect and what was the team's experience in relating the use of the data for the next PDSA testing?
- **What went well for the team and what the team can do better.**
  - Focus on the system problem
  - Measurement for improvement examines the outcomes within a system
  - Usefulness of data and whether easily translated into actual practices
- **Ask one member to share during the group sharing.**



ACTIVITY 7

FLYING PAPER AIRPLANES

Activity Instructions

Debrief with Learners; Team sharing

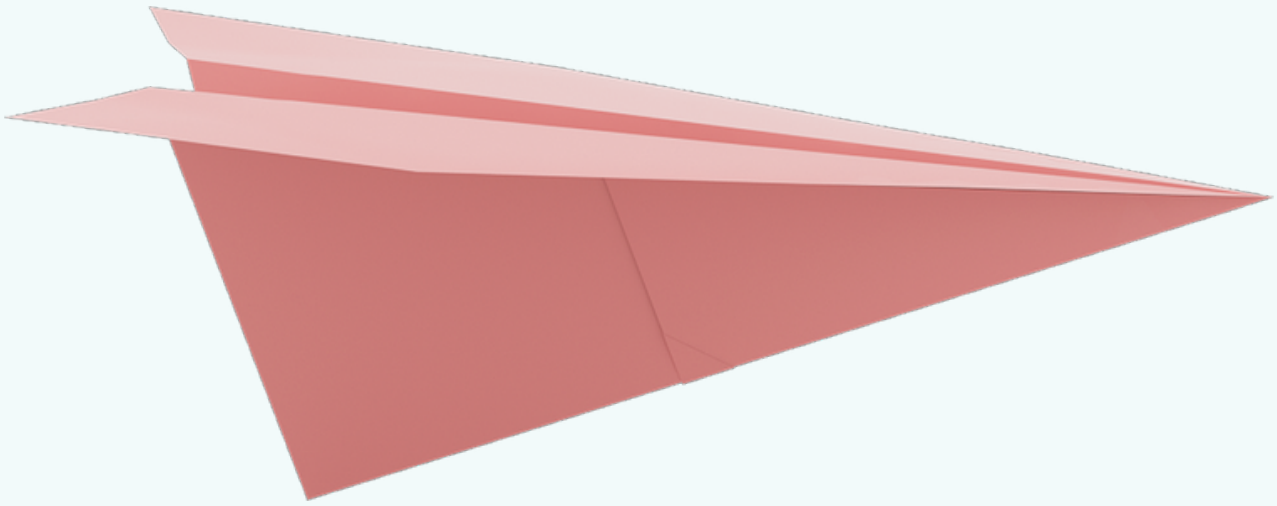
- Lead/facilitate discussion focusing on Concepts in Quality Improvement in this game activity.
- Get participants to relate observations and learnings to or on the improvement and change management within their context.

Example 1

- Flying paper airplanes cannot result in reliable outcomes because of varying aerodynamics. Just one extra fold or the slightest asymmetry of the wings, for instance, can cause a plane to prematurely plummet to the ground or veer off-course.

Example 2

- Knowing that a plane plummeted to the ground immediately after it was thrown at a 90-degree angle could lead the team to try throwing it at a lower angle. Through this kind of rapid learning, teams are able to quickly confirm or refute their theories of the specific design principles and other techniques that were necessary to reach their aim, and adapt them based on their findings.



Reference

Source - Adapted from IHI-Open School with modification

ACTIVITY 8

STORYBOARD ROUNDS

What is a Quality Improvement Storyboard?

A storyboard is typically a brief, visual summary of a completed quality improvement (QI) initiative displayed on a Trifold Poster board or poster.

The storyboard highlights key aspects of a QI effort by documenting the project from beginning to end. It generally includes a description of the following: the problem, the methodology and QI tools used, key metrics, lessons learned and the plan for sustaining improvement. A QI storyboard includes steps taken within the plan-do-study-act (PDSA) **cycle**.

The aim of a storyboard is to create an attractive display that will draw observers to your storyboard and communicate clearly the main points of your display.

Concepts in Quality Improvement the Activity Teaches

- Communication
- Engagement
- Social networking
- Spread

Recommended Level for Learners

Level		Description of Audience
✓	Personal Effectiveness	All staff functioning in their individual capacities, including their roles in teams
✓	Team Effectiveness	Staff participating in activities that improve the performance of micro- and meso-systems teams
	Organisational/ Leadership effectiveness	Organisational leaders, organisational level workgroup or committee leaders
	Quality Professionals	Staff of Quality and Safety departments, leaders with Quality and Safety functions

ACTIVITY 8

STORYBOARD ROUNDS

Materials

- Trifold Poster Board or Wall Poster – the team should prepare this at least 1-2 weeks before the session (refer to **Annex A** : How to construct a QI storyboard)

Setup: Grouping of learners

- Classroom layout: Size depends on the number of QI project teams participating in the activity.
- The activity comprises sharing of the QI projects by teams who are seated at their tables, hence it is necessary to provide sufficient space for other teams to gather around the table.

Game/Activity/Event Instructions

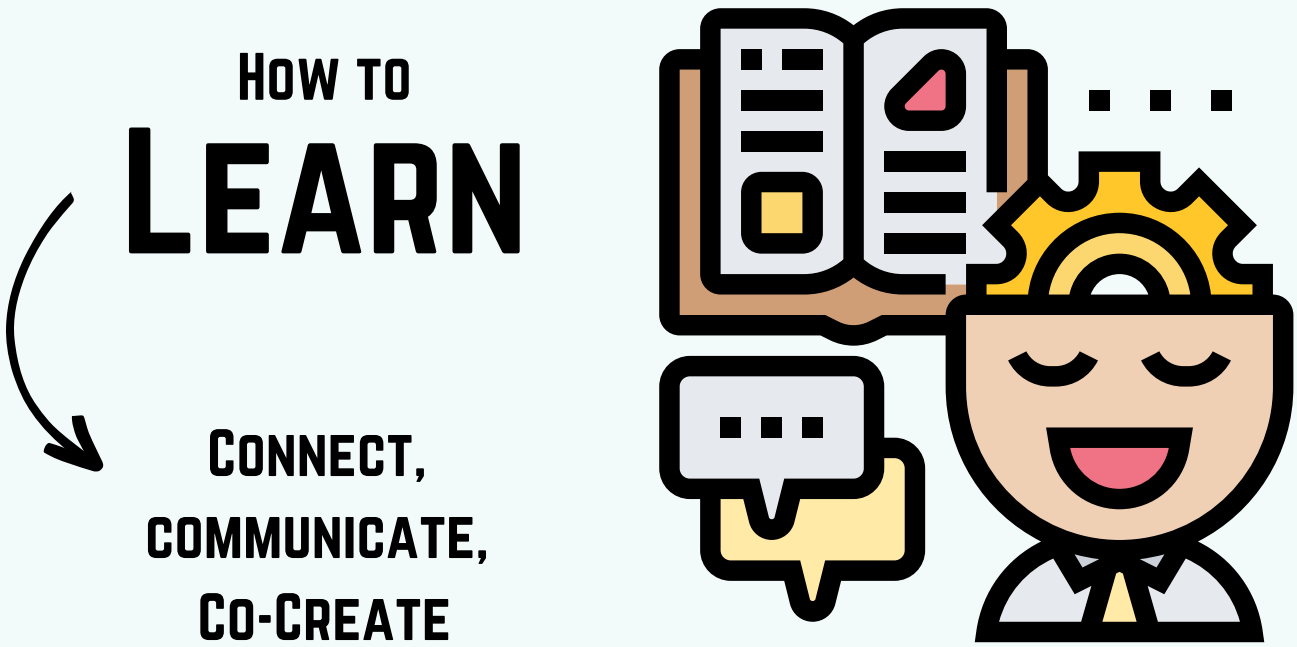
- **Total activity time:**
  - Group size of less than 8 teams – 75 minutes
  - Group size more than 8 teams – 90 minutes
- Game briefing: 5 minutes and distribution of Harvest Sheets to groups
- Storyboard rounds: Allow all teams to set up their storyboards. Preferably number the storyboard for easy identification. Create a movement chart to indicate which storyboard a team should be visiting to harvest ideas. e.g. Team 1 to visit storyboards 2,3,4.
- Time allocated for each storyboard round is 10 minutes for teams to share their project and harvest their ideas. Minimally allow 3 rounds of storyboard sharing.
- After completing 3 rounds of sharing and harvesting of ideas, the teams will return to their tables to have a 10 minutes discussion to share their learnings.
- 30 minutes to be allocated for groups sharing: Each team takes about 3-5 minutes to share 3 key learnings from the harvesting exercise.
- Facilitator debrief with teams: 5-10 minutes
- Learners feedback: 5 minutes

ACTIVITY 8

STORYBOARD ROUNDS

Harvesting (My Learning at Storyboards)

- 'Harvesting' is a method that opens you up to alternative ways of doing things or solving problems that may help to improve the outcome of your QI initiatives by learning and visiting others, both within and outside your health care system or organisation.



- Each participant takes one harvest sheet and use the Harvest Sheet in your rounding to gather learning.
- Before making visits to other teams, it is important to develop a strong Curiosity Quotient (CQ). The purpose of harvesting is not to get confirmation of your existing ideas but to question to allow new ones and also share to further pollinate and broaden ideas.
- During harvesting, emphasising on active engagement as a key part of learning and encouraging participants to interact with a variety of project teams to get a sense of the mix of perspectives and ideas.
- Identify key learning points and build these into the Harvest Sheet for participants.
- Each participant should take one harvest sheet for the Story Board Round.

ACTIVITY 8

STORYBOARD ROUNDS

Harvest Sheet - Example

My Learning at Story boards: Lessons from My Initiative in the LSI Reduce Harm in Patients

No.	Questions	My Learning
1	**Building Will** What have the teams done to build the veil for change at pilot, scale up and spread?	
2	**Team Engagement** What did the team (Leadership team/Sponsor Program, Manager & Frontline team) do to invoke the stakeholders at pilot, scale-up and spread phase?	
3	**Testing, Implementing, Sustaining Reliability** What activities or changes did the team do to build a culture of safety	
4	**Patient & Family Centered Care** How far have the team moved forward in involving patients and families in improvement? What are the challenges faced and how did the team overcome them?	
5	**Effective Multidisciplinary Team** Does having a multi-disciplinary team enable the team to do improvements? How did the other institutions engage the stakeholders in their initiative?	
6	What have I learnt from the other teams to help me better the measurement approach in my team's initiative?	

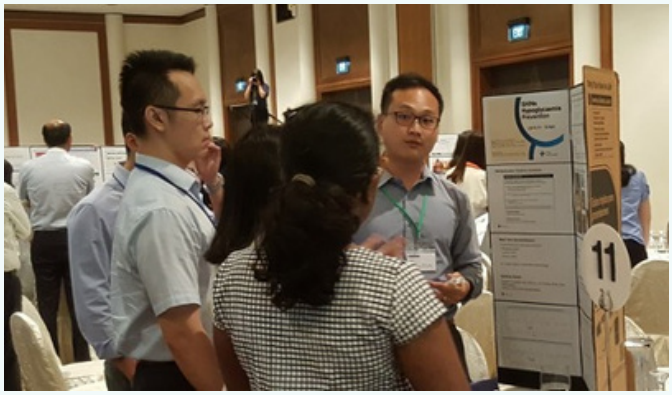
ACTIVITY 8

STORYBOARD ROUNDS

Activity Guide

- Identify one person in your team to be at your table (with the storyboard) to be the Table Lead
- The Table Lead will share the Storyboard with other teams when they come to the table (3 rounds; 10 minutes each time)
- The Table Lead will stay at their table while the rest of the team members will move to another table according to the plan and everybody gathers around the storyboards, one at a time ,to hear the sharing from the Table Lead
- Use the "My Learning at Story Board" to document your learning.
- Remember to thank the presenter/team for sharing.
- Share your learning at your table.

Debrief with Learners and Team sharing

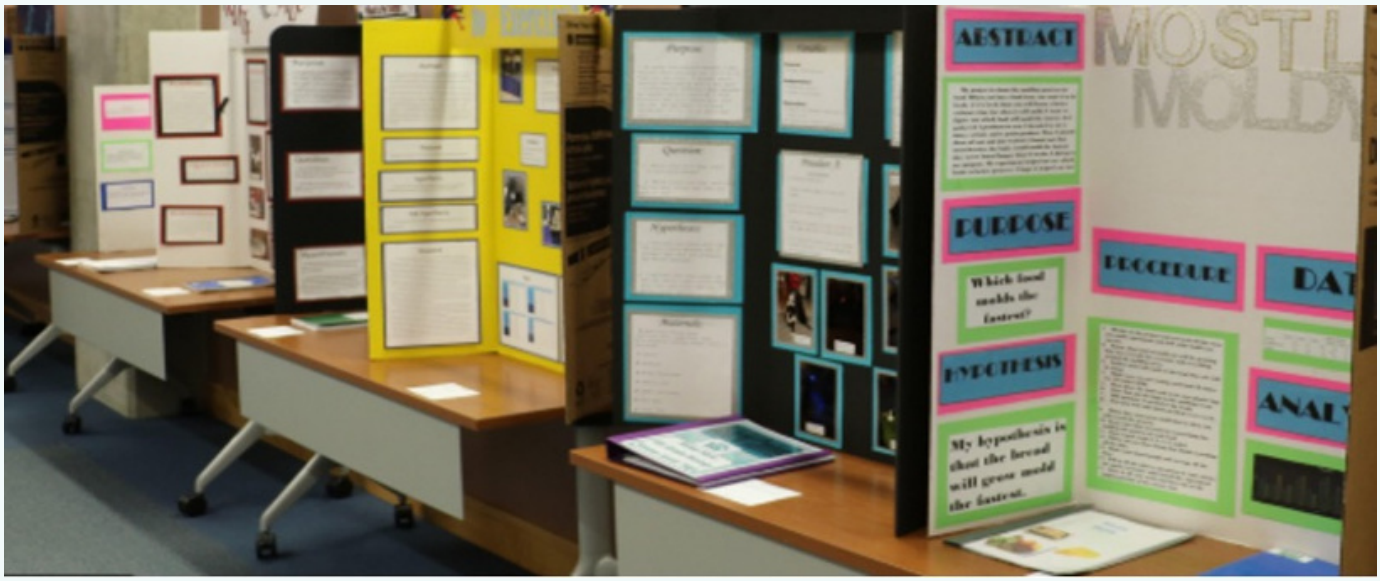


ACTIVITY 8

STORYBOARD ROUNDS

Activity Guide

After storyboard rounding, teams are encouraged to display their storyboards at the side of the training room or conference hall. This provides opportunities for other teams to view their projects during break times.



Facilitator Debrief with Teams

Storyboards are useful project planning tools that illustrate the steps involved in the project and outline of the things that happens or occurs in the process. Storyboards can aid in communicating and comprehending concepts in lively and dynamic ways, which will help learners to learn from projects from others which may support ideation and advance improvement.

The storyboards provide much scope for applying creativity and brainstorming. This also allows involving all members of the team, providing an opportunity to herald collaboration and promote learning through All Teach, All Learn and All Share.

Learners Feedback

- Give every team member a sheet of dot stickers.
- Ask each member to look at the different storyboards and put a sticker on every idea or part of an idea they like.
- There are no limits to how many stickers you can use.
- By the end of the session, teams will be able to see ideas standing out.
- Before ending the session, request each team to display their storyboards at tables at the side of training room or conference hall.

Reference

Source: Storyboard Tools, Institute for Healthcare Improvement, Boston, Massachusetts, USA, 2004

Adapted and Modified by PangnI&WongMS@SHINe, Singapore Healthcare Improvement Network (SHINe), 2020

ACTIVITY 8 - ANNEX A

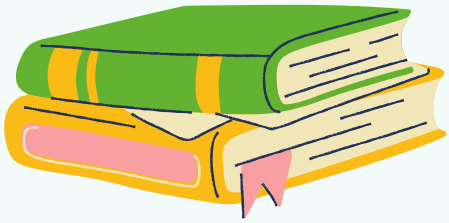
STORYBOARD ROUNDS

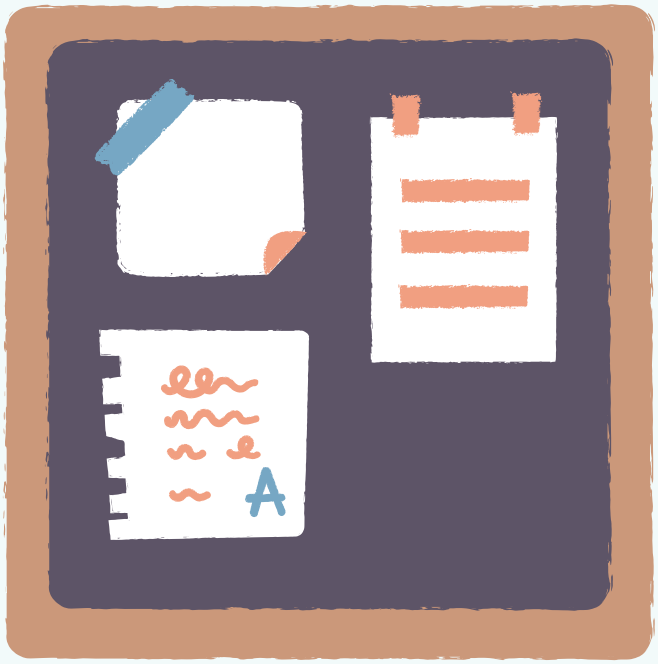
How to Construct a QI storyboard

The format for a storyboard can vary and templates are often used that follow the PDSA cycle. However use of a template is not necessary if there is good structure flow of information.

Many QI storyboards include four main sections: Plan, Do, Study and Act. Each section also provides information on several key components that are usually part of any QI project.

Consider the following optional sections and content for a storyboard which can consist of a combination of narrative and images:

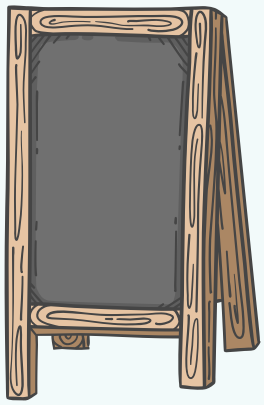




- **Plan** - includes a description of a problem, identifies potential strategies or articulates the intended achievement outcomes or results
- **Do** - describes activities to address the identified problem
- **Study** - analysis of testing and provides an overview of the results as well as what has been learned through this process. Specifically, the goal of this section is to demonstrate whether implemented changes resulted in improvement
- **Act** - describes plans for sustaining the observed improvements as well as changes to the utilized strategies if they were not quite effective and the decision to adopt, adapt or abandon

Creativity should be used in storyboard design. Avoid complex charts or tables that will diminish the viewer's ability to rapidly comprehend your work. Likewise, presenting too much information overwhelms the reader.

Use bullet points to make your key messages stand out. The design can be original using a preferred software program e.g. MS Word, Publisher, PowerPoint etc.



ACTIVITY 9

STRING A BRACELET

Objectives

- Teach QI concepts through an activity to replicate stringing a bracelet

Concepts in Quality Improvement

- Use Model for Improvement
- Rapid PDSA
- Teamwork
- Reliability

Recommended Level for Learners:

Level		Description of Audience
✓	Personal Effectiveness	All staff functioning in their individual capacities, including their roles in teams
✓	Team Effectiveness	Staff participating in activities that improve the performance of micro- and meso-systems teams
	Organisational/ Leadership effectiveness	Organisational leaders, organisational level workgroup or committee leaders
	Quality Professionals	Staff of Quality and Safety departments, leaders with Quality and Safety functions

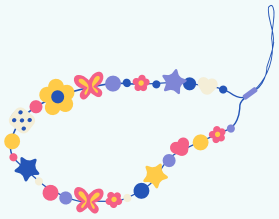
ACTIVITY 9

STRING A BRACELET

Preparation:

Materials (Figure 1):

- A variety of beads required to replicate the bracelet
- A variety of odd shape beads that are not part of the bracelet (represents distractions or barriers that may occur during the change or testing process)
- Fine wire to string beads together
- A container for mixed beads and wires (Figure 2)
- Score sheet (Annex A)
- 2 pens – one red pen and one blue pen
- Zip lock bags – to contain the materials



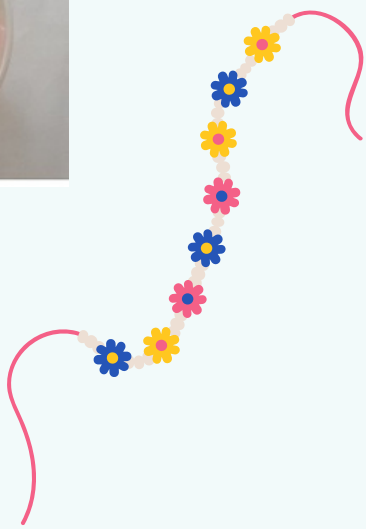
Pre-activity preparation (a bag for each group):

1. Each container: Necessary shape and size beads as shown, a variety of odd shape beads and 2 lengths of wire approximately 12 - 15cm length.
2. Place the container, score sheet, a red pen and blue pen inside the zip lock bag

Figure 1

Figure 2

Setup (illustration or photo, and label):



ACTIVITY 9

STRING A BRACELET

Game/Activity/Event Instructions

Group size: 4 to 8 participants per table. Ensure the table is large enough for the participants to play the game

- Classroom layout: Size depend on the number of groups
- Total time: Depends on the total number of groups participating in the activity.
  - Less than 5 tables: 45 minutes
  - 6 tables or more: 60 minutes
- Game briefing and distribution of pre-packed materials to groups: 5 minutes
- Activity time for stringing and discussion: 15 minutes for 4 cycles
- Group sharing and debrief: 15 to 30 minutes

PDSA Testing Rules

- Team must complete 4 PDSA Cycles within 15 minutes.
- Every member must have a role in the activity.
- You can only use one hand to pick the bead and string the beads.
- The remaining beads must not leave the container during the stringing (no pouring out or spreading of beads on any flat surface).
- You must repeat from the starting point if you drop the bead or decide to change the sequence of the beads.
- Take a picture of the completed work for each PSDA cycle for comparison with the subsequent result.
- Team should clock the start time and end time and complete the score sheet before going on to the next cycle
- Drop the beads back into the container and repeat the PDSA cycle.

Measurement (record and plot data point of each test on chart – **blue** for reliability and **red** for consistency)

- Time taken to complete each of the PDSA cycle
- Reliability (shape or size) - 10% deduction each for wrong shape or size chosen. e.g.:
  - Two beads of the wrong shape, the score is 80%
  - One bead of the wrong shape and two beads of the wrong size, the score would be 70%
- Consistency (sequence) – 10% deduction for each record of wrong sequence e.g. 3 beads in the wrong sequence, your score would be 70%

ACTIVITY 9

STRING A BALANCE

Building Reliability & Consistency in Your Change

Share Your Learning Points

Give the group 10 minutes to discuss with members and document on the flipchart:

- Lessons drawn from PDSA testing
- What the team did well
- What the team can do better
- Nominate one member to share during the group sharing

Debrief with Learners: Group sharing

- Lead/facilitate discussion focusing on Concepts in Quality Improvement in this game activity.
- Get participants to relate observations and learnings to or on the improvement and change management within their context.

ACTIVITY 9 - ANNEX A

STRING A BRACELET

Score Sheet

Percentage	PDSA 1	PDSA 2	PDSA 3	PDSA 4
100				
90				
80				
70				
60				
50				
40				
30				
20				
10				
0				
Time to complete (in seconds)				

LEGEND

Reliability

Consistency

ACTIVITY 10

THE PAPER CHAIN GAME

Objectives

Simple Version of the game

- Helping teams see the value of communication and recognising the verbal and non-verbal cues when working together as a team, whilst working with limited resources

- Helping improvement teams build Will, Ideas and Execution, via the use of Model-of-improvement (MFI) 's 3rd question and PDSA cycle, "What changes lead to improvement?"

Advanced Version of the game

- The game incorporates above and can be used for a large audience by decentralising the control of resources to separate clusters (4 tables each cluster) and a facilitator to control resources in the game, within each cluster.

- Running the game in large audiences helps to build camaraderie and create fun in the improvement journey. It promotes healthy competition amongst healthcare teams for large scale change to happen when teams share and compare their results with one another and learn from successes and failures. This game helps to form the social bond for change when multiple teams come together.

Concepts in Quality Improvement

- Systems Thinking
- Teamwork
- PDSA
- Testing & Making Changes

ACTIVITY 10

THE PAPER CHAIN GAME

Recommended Level for Learners

Level		Description of Audience
✓	Personal Effectiveness	All staff functioning in their individual capacities, including their roles in teams
✓	Team Effectiveness	Staff participating in activities that improve the performance of micro- and meso-systems teams
✓	Organisational/ Leadership effectiveness	Organisational leaders, organisational level workgroup or committee leaders
	Quality Professionals	Staff of Quality and Safety departments, leaders with Quality and Safety functions

ACTIVITY 10

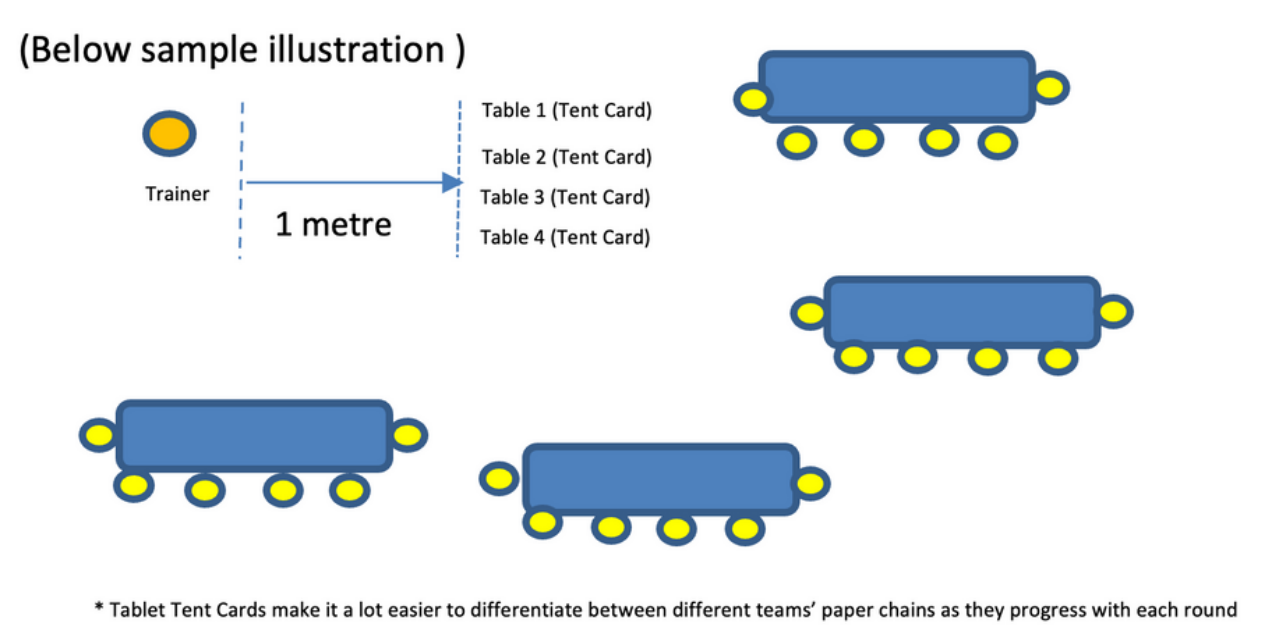
THE PAPER CHAIN GAME

Setup and preparation of materials

Simple Version

Each table:

1. Table number tent card (to be placed on floor in one straight line)
2. 1 x pre-cut 1 metre ruler (paste on floor)



Materials

1. Prepare 1 set of resources for each table.

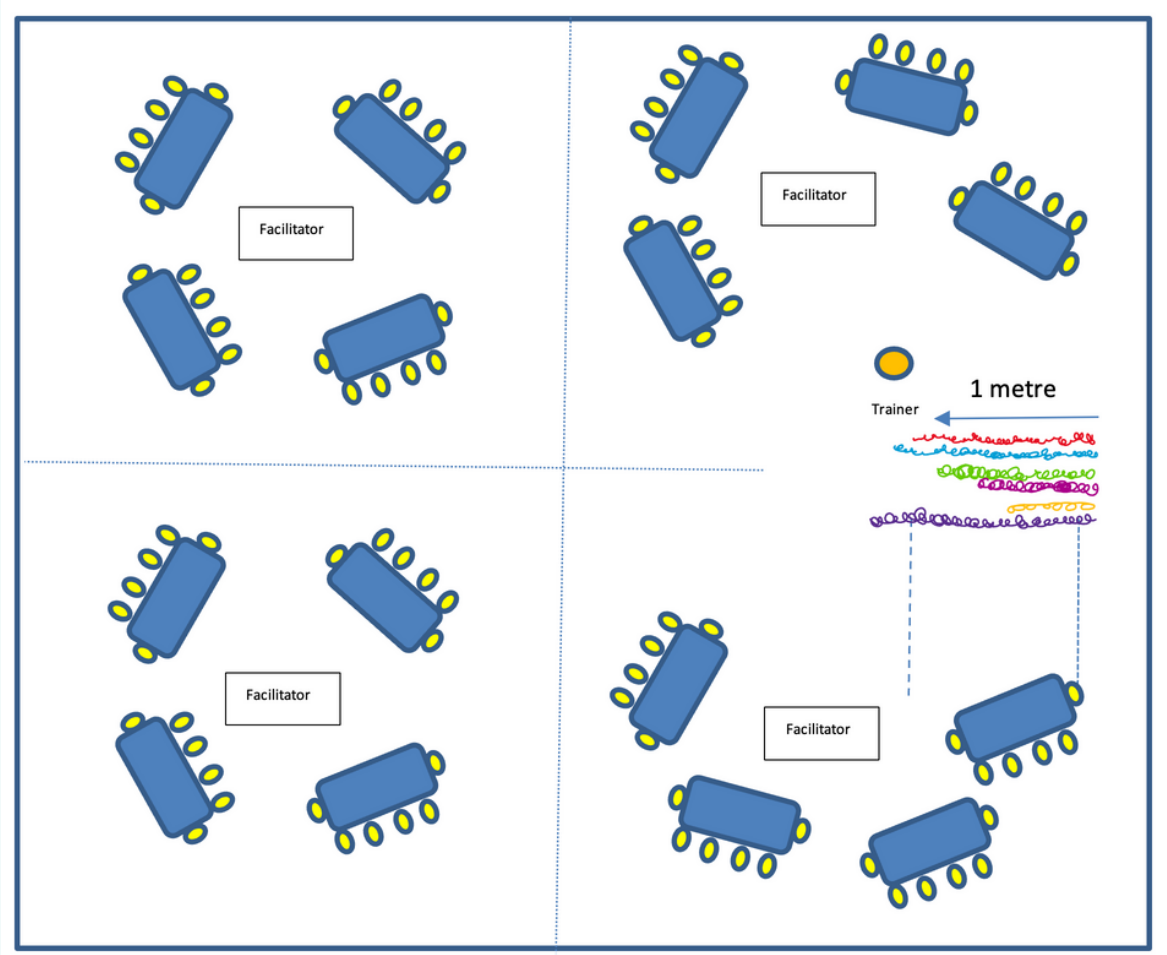
2. Each set contains:
   - 2 x scissors
   - 2 x scotch tape
   - Paper for cutting:
     a. 10 copies - white A4 paper (can use recycled paper)
     b. 5 copies - white A4 paper (can use recycled paper)
     c. 3 copies - green A4 paper
     d. 1 copies - pink A4 paper
     e. 1 copies - yellow A4 paper

ACTIVITY 10

THE PAPER CHAIN GAME

Advanced Version

- Cluster: 4 Tables form a cluster. Each cluster has a facilitator
- For materials; Use above resource requirements for each table. Multiply accordingly to number of tables
- Consider adding for each cluster: 1 extra pair of Scissors and 2 extra scotch tape rolls to demonstrate the possibility of sharing common resources within each cluster.



ACTIVITY 10

THE PAPER CHAIN GAME

Simple Version: How the Game is played

Audience size: 12 - 50 participants

Round 1 - Practice Round
Make the longest paper chain
(minimum 1 metre within 2 minutes)

Round 2
Make the longest paper chain
(minimum 1 metre within 2 minutes)

Complexity factor add-on:
1. Reduce amount of paper to only 5 sheets of A4

Round 3
Make the longest paper chain
(minimum 1 metre within 2 minutes)

Complexity factor add-on:
1. Reduce amount of paper to only 2 pieces of A4
2. Team members cannot speak to one another

Round 4
Make the longest paper chain
(minimum 1 metre within 2 minutes)

Complexity factor add-on:
1. Reduce amount of paper to only 2 pieces of A4
2. Team members cannot speak to one another
3. Use only LEFT hand (non-dominant hand)
4. Ministry sets goal to double length of chain to minimum 2 metres

Round 5
Make the longest paper chain
(minimum 1 metre within 2 minutes)

Complexity factor add-on:
1. Reduce amount of paper to only 1 piece of A4
2. Team members cannot speak to one another
3. Use only LEFT hand (non-dominant hand)
4. Ministry sets goal to double length of chain to minimum 2 metres

*Participants can vote and request to remove one disability

Debrief

Lessons we learnt from running the game

Give an example the audience can relate to.
Example: the chain represents the performance of hand hygiene standards in your institution.

Length of 1m chain is defined by Ministry as the minimal standard of care provided by all the healthcare staff each patient meets during each visit.

Appoint in each team, a leader who will approach the trainer for resources for each round. This prevents unauthorized pillage of materials outside of the game (i.e., Extra paper or cellophane tape)

At the end of Round 1, teams bring their paper chains to the front of the room and place their paper chain on the floor, pre-marked with a 1 metre measurement tape.

Announce that the team's rampant use of paper resources reflects poor stewardship, which results in less resources provided by "the ministry", which will be gradually enforced in each budget cycle.

As the number of tables increase, more facilitators will be required to ensure all teams start and end each round strictly on time, and to enforce the non-speaking, and dominant hand restrictions.

With teams who are unable to meet the minimum baseline of 1 metre within 2mins and to allow quick wins for teams to meet the minimal standard of 1 metre, you may allow 30 secs for each leader and team to communicate and discuss their strategy before the round starts.

Encourage any leader who is lagging behind with a question e.g., what is the goal of the system, the characteristics, and what is the plan? Once a good plan is articulated and clarified, the execution becomes easier to achieve.

Goal is to push for thinking outside the box in order to stretch resources and achieve better outcomes – innovation is possible via a different thought plane, abolishing "sacred cows" and "traditionally safe practices"

Team understands the challenges of being given only 1 piece of paper.

Facilitators can also ask the teams if they can google or find out from the other teams if they should cut their paper in an entirely different manner.

ACTIVITY 10

THE PAPER CHAIN GAME

Advanced Version: How the Game is played

Audience size: 50 to 200 participants

- 1 team (5 to 8 participants)
- 4 teams form one cluster
- Each cluster has an assigned facilitator who helps to issue resources (paper, scissors)

Round 1 - Practice Round
Make the longest paper chain
(minimum 1 metre within 2 minutes)

Cluster facilitators will only issue resources to appointed table resources

Round 2
Make the longest paper chain
(minimum 1 metre within 2 minutes)

Complexity factor add-on:
Reduce amount of paper to only 5 sheets of A4

Cluster facilitators remind table leaders to lay their team's paper chain upfront (measuring point) after each round

Round 3
Make the longest paper chain
(minimum 1 metre within 2 minutes)

Complexity factor add-on:
1. Reduce amount of paper to only 2 sheets of A4
2. Team members cannot speak to one another

Cluster facilitators can drop hints on how to think differently (innovation and creativity)

Round 4
Make the longest paper chain
(minimum 1 metre within 2 minutes)

Complexity factor add-on:
1. Reduce amount of paper to only 2 sheets of A4
2. Team members cannot speak to one another
3. Use only LEFT hand (non-dominant hand)
4. Ministry sets goal to double length of chain to minimum 2 metres

Lessons we learnt from running the game

- Give team leader time to obtain resources first from the trainer before each round
- Having the team leader collect the resources helps to control the large number of participants, and to prevent any team from starting prematurely
- Team leader will only proceed back to table after we announce start
- Strict simple rules and specific step-by-step briefing is vital for the success of the game
- With large number of participants, the concept of assigning leader and Teams roles is important
- Round 4 - Innovate thinking completes challenge of existing ways, how to do more with less
  E.g. Hand Hygiene: how to continue to meet patient care standards despite having overwhelming obstacles with increasing patient workload
- At round 4, hold the leaders at the front when they come up to collect the resources, and flash the new rules to the entire audience.
- Show the rules
- Give the team option of a quick discussion of 1 minute,
- Call the team leaders to the cluster table to collect resources when 1 minute is up/or when they are ready (audience sensing)

ACTIVITY 10

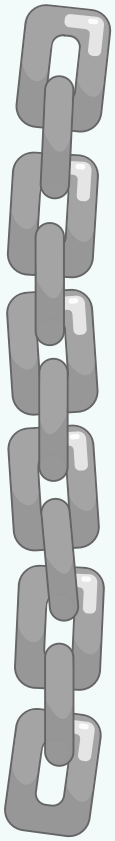
THE PAPER CHAIN GAME

Round 5
Make the longest paper chain
(minimum 1 metre within 2 minutes)

Complexity factor add-on:

1. Reduce amount of paper to only 1 piece of A4
2. Team members cannot speak to one another
3. Use only LEFT hand (non-dominant hand)
4. Ministry sets goal to double length of chain to minimum 2 metres

*Participants can vote and request to remove one disability

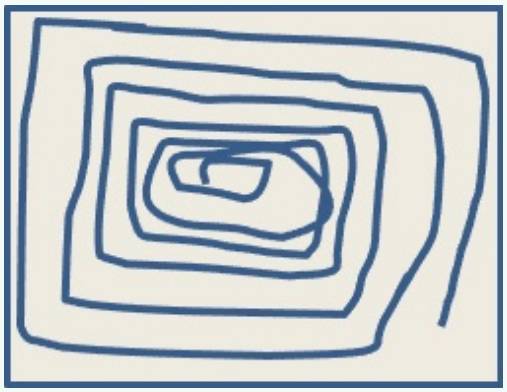


Debrief

Rules

1. Trainer controls the resources
2. Only the team leader can approach the trainer for resources
3. Teams can only use resources given by trainer facilitator
4. Team leader does not play; he/she has to assign roles and tasks
5. Team leader is responsible for reporting results after each round

Solution for the longest chain (at least 5 metres) using one single A4 paper



Cut the paper in longer and thinner strips in a rotational manner starting from the outside

ACTIVITY 11

CATCH NO BALL

Objectives

- To experience how improvement is adopted and implemented in different stages (Pilot, Scale, Spread)
- To appreciate how change is managed organisation-wide at each stage

Concepts in Quality Improvement

- Testing & Making Changes
- System Thinking
- Spread
- Social Networking

Recommended Level for Learners

Level		Description of Audience
	Personal Effectiveness	All staff functioning in their individual capacities, including their roles in teams
✓	Team Effectiveness	Staff participating in activities that improve the performance of micro- and meso-systems teams
	Organisational/ Leadership effectiveness	Organisational leaders, organisational level workgroup or committee leaders
✓	Quality Professionals	Staff of Quality and Safety departments, leaders with Quality and Safety functions

ACTIVITY 11

CATCH NO BALL

Preparations:

Number of tables: 10, maximum 30. Arrange tables such that 1 zone has 5 round tables.

Number of participants per table: 5 - 8 participants

Number of facilitators: 1 facilitator (CEO) per zone.

Total time : 60 minutes

(Introduction : 10 minutes)

Materials:

1. Prepare the following for each table:
   a. Three table tennis (ping pong) balls
   b. One piece of string, length 1.5 meters
   c. One masking tape
2. Prepare the following for each zone of 5 tables:
   a. Nine plastic cups
   b. Six plastic bowls
   c. One masking tape
   d. One Pilot Package: contains four A4 sheets, one Sticky pad, one data collection Sheet and one "How did we our ideas work?" sheet
   e. Scale Package : Two sets (One set comprises four A4 sheets, one Sticky pad, one data collection sheet and one "How did we our ideas work?" sheet)
   f. Spread Package: Two sets (One set comprises four A4 sheets, one Sticky pad, one data collection sheet)

[Note: the 4 A4 sheets in each package should be different colours (one colour represents one round) e.g. Yellow A4 sheets represent Round 1, blue A4 sheets represent Round 2]

CATCH NO BALL

3. Timer (clock or computer timer)

Data Collection Sheet

(Data collection sheets for the Pilot, Scale and Spread packages should ideally be of different colours for easy identification as they will be pasted on the flip chart)

Staff\Round	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
Doctor	✗														
Nurse	✓														
Allied Health	✓														
Total	2														

$$\frac{\text{No of balls successfully thrown in cup x 100\%}}{\text{No. of rounds}} = \text{Average Handover Effectiveness}$$

%%%

How Did Our Ideas Work?

"How did our ideas work?' sheet

What Worked Well?	Did Not Work Well

Facilitators should familiarise themselves with the game and instructions for each round before the day of play.

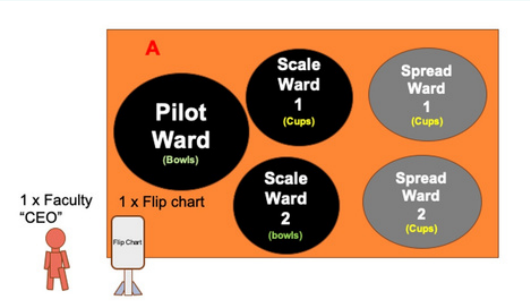
ACTIVITY 11

CATCH NO BALL

Game/Activity/Event Instructions

Before the game starts (Preparation time: 10-15 minutes)

1. Arrange 5 tables into a zone (see picture below; the picture is for the facilitator; do not label the tables for the participants)
2. Put 2 bowls each on 2 tables (Pilot Ward and Scale Ward 1).
3. Place 3 cups each on the remaining 3 tables (Scale Ward 2, Spread Ward 1, Spread Ward 2).



4. At each table, measure a distance of 1.5 meters from the edge of the table. Mark this line clearly with masking tape. Add 1.5 meters "using the provided string".
5. Appoint a Faculty member as CEO for each zone.
6. Appoint a Chief CEO (Faculty Lead).

Game: The Story

The CEO of SHINE hospital has recognised that poor handover communication among different healthcare professionals is the root cause of patient harm in the wards. He/she wants to ensure 100% handover effectiveness among Doctors, Nurses and Allied Health Professionals (AHP) in all wards.

Each zone (eg Zone A, B, C, D) is a hospital administered by a CEO.

Each zone has 5 tables. Each table represents a ward with multidisciplinary team members [Doctor, Nurse, Allied health professional (AHP)] delivering care to patients.

Each table has either 3 cups or 3 bowls.

Each table has 3 balls (one each for the doctor, nurse and AHP). The ball represents the patient. Each throw represents a patient handover. If the ball falls into the bowl/cup, this is considered an effective handover.

Each round represents a multidisciplinary patient handover. If the doctor, the nurse AND the AHP successfully throw their balls into the cups/bowls in the same round, this constitutes a 100% handover effectiveness.

Rules of the Game

The Chief CEO informs players about the rules of the game.

1. Each player can only attempt one throw for each round. The throws must be consecutive.
2. One successful throw is defined as the ball going into the cup /bowl and remaining in the cup/bowl. The cup/bowl must not topple.
3. The doctor, nurse and AHP must throw their own ball into their own cup / bowl (no crossing over).
4. The distance must remain 1.5 metres at all times.
5. The care coordinator can assist the throwers but CANNOT touch the ball, cup or bowl
6. The data collector only collects data.

Give everyone time to understand their roles and clarify questions as needed.

ACTIVITY 11

CATCH NO BALL

Overview of Game

There are 4 rounds. The Chief CEO issues the game instructions.

Before starting the game:

a. Ask each table to appoint a Table Leader and to assign designations and roles at their table.

1 Doctor : Throw ball into cup/bowl

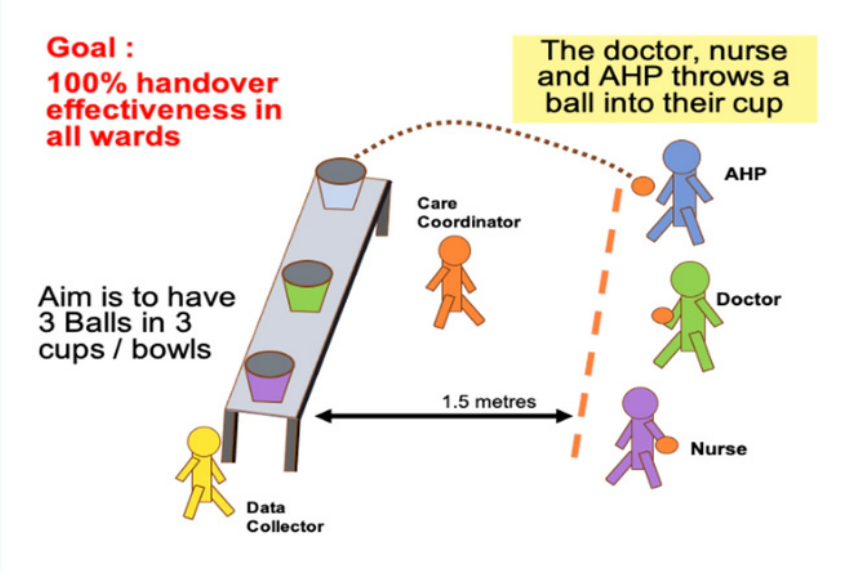
1 Nurse : Throw ball into cup/bowl

1 AHP : Throw ball into cup/bowl

1 Care coordinator: Picks up the "slack" (help the doctor, nurse and AHP to achieve their objective)

1 Data collector: Finds the data collection sheet and record the % handover effectiveness on this sheet.

b. The final position before Phase 1 is illustrated below:



Practice Round (1 minute)

a. Ask each CEO to pass the ball to each Table Leader.

b. Invite the tables to practise throwing the ball into their respective cup or bowl.

Round 1: Baseline - Collecting baseline data (5 minutes)

a. Ask the doctor to throw the ball into their cup/bowl, followed by the nurse, followed by the AHP.

There are 6 rounds. If the doctor, the nurse AND the AHP successfully throw their balls into the cups/bowls in the same round, this constitutes a 100% handover effectiveness

Patient	Number of balls landed in the cups by			Effectiveness of handoff communication per patient
	Dr	Nurse	AHP	
Patient 1				3/3 = 100%
Patient 2				2/3 = 67%
Patient 3				1/3 = 33%

ACTIVITY 11

CATCH NO BALL

Round 2: Pilot Round - Appointing Pilots for improvement (10 mins)

a. Ask each CEO to go to one of the 2 tables with a bowl in their zone and pass the Pilot Package to the Table Leader (this is the Pilot Ward).

b. Start the 6 rounds.

c. Ask the Table Leader to collate the data on the pilot sheet for 6 rounds and paste the completed Pilot sheet on the flip chart with the 'how did our ideas work' sheet for the CEO to review and check that the data is correct.

d. Debrief by Chief CEO: The intent of this round is to illustrate the resources required to test a pilot. CEO chooses the Pilot Ward to test changes on a small scale. Changes are tested through PDSA cycles that gradually build knowledge.

Support required is minimal and the results of each PDSA can be observed quickly. There is high tolerance for failure. The time given for the Pilot Phase is 10 minutes, which is shorter than the duration for Scale but longer than the duration for Spread.

Round 3: Scaleable Round - Setting up the Scalable Units (12 mins)

a. Ask the CEO to go to 2 tables (1 table with a cup and 1 table with a bowl) and pass the Scale Package to the 2 Table leaders (these are the Scale Wards)

b. Invite the table participants to study the flipcharts.

c. Start the 6 rounds. The Scale Wards can modify the initiatives from the pilot table.

d. Ask the Table Leaders to collate the data on the Scale sheet for 6 rounds and paste the completed Scale sheet on the flip chart with the 'how did our ideas work' for the CEO to review.

e. Invite the Pilot Ward and other table participants to review the flip charts.

f. Debrief by Chief CEO: The intent of this round is to illustrate that teams understand that different contexts exist and interventions from the pilot may need to be amended to deliver similar outcomes.

- Successful PDSA cycles from the Pilot Ward are replicated in the Scale wards. The scale wards, however, are not the same as the Pilot Ward; one ward has a bowl (similar to the Pilot) while the other ward has a cup.

- The Scale Wards are encouraged to learn from the Pilot Ward (the sharing of information through the flip charts) and amend these interventions through PDSA cycles for their respective context. Support required is still low and results of PDSA tests can be observed quickly. Tolerance for failure remains high.

Round 4: Spread Round - Identifying Units for Spreading Improvement (5 minutes)

a. Invite the remaining 2 tables (with cups) to study the flipchart with instructions to learn from the Scale Ward with the cup.

b. Ask the CEO to pass the Spread Package to the Table Leaders of these 2 tables (these are the Spread Wards).

c. Start the 6 rounds. Spread tables are NOT allowed to modify the initiatives from the scale tables. Their job is to implement, not modify.

d. Ask the Table leader to collate table data on the Spread sheet and paste the completed Spread sheet on the flip chart for the CEO to review. Implement, not modify.

e. Debrief by Chief CEO:Spread refers to adoption and replication (with little modification) of an intervention within a health system and involves the implementation of proven interventions in each applicable care setting.

- The intent of this round is to illustrate the need for a system-wide approach for spread. The 2 Spread wards are similar to Scale ward 2. Minimal change is allowed. Support required is high and the time to deliver results is fast. Tolerance for failure is low. The time given to the Spread ward is 3 minutes, shorter than the Pilot and the Scale Phases.

ACTIVITY 11

CATCH NO BALL

Final: Debrief

The Chief CEO leads the debrief after each round and at the end of Round 4. The Chief CEO should:

a. Summarise the principles and objectives to help participants understand:

i. The concepts of Pilot, Scale and Spread and the resources required for each phase. A system-wide approach is important to facilitate scale and spread from the pilot.

ii. The possible reduction in effectiveness if the same fixed intervention is applied in different contexts and the importance of understanding the different contexts and amending the intervention appropriately to ensure that effectiveness is maintained

iii. Understand the importance of engaging and supporting stakeholders and the power of communication and collaboration.

b. Summarise the key points illustrated by the game:

i. Baseline (Round 1): It is important to collect baseline data to understand current performance and identify gaps for improvement.

ii. Pilot (Round 2): Resources are needed to test a pilot.

iii. Scale (Round 3): Teams should understand that different contexts exist and interventions from the pilot may need to be amended to deliver similar outcomes. Support required is low. Tolerance for failure remains high.

iv. Spread (Round 4): Teams should learn how to adopt and replicate (with little modification) an intervention within a health system. Support required is high and the time to deliver results is fast. Tolerance for failure is low.

Reference or Source of Game:

1. *The Spread and Sustainability of Quality Improvement in Healthcare Quality Improvement Hub, Institute of Healthcare Improvement, 2014*
2. *The Framework for Spread, Institute of Healthcare Improvement*
3. *A framework for scaling up health interventions: lessons from large-scale improvement initiatives in Africa. PM Barker, A Reid, MW Schall. Implement Sci. 2016; 11: 12*

ACTIVITY 12

THE PAPER CLIP GAME

Objectives

- To show that measurement tools used in performance measurement (e.g. key performance indicators) and quality improvement are different
- To show how QI data can be collected and analysed for meaningful improvement

Concepts in Quality Improvement

- PDSA
- Measurement for improvement

Recommended Level for Learners:

Level		Description of Audience
✓	Personal Effectiveness	All staff functioning in their individual capacities, including their roles in teams
✓	Team Effectiveness	Staff participating in activities that improve the performance of micro- and meso-systems teams
	Organisational/ Leadership effectiveness	Organisational leaders, organisational level workgroup or committee leaders
✓	Quality Professionals	Staff of Quality and Safety departments, leaders with Quality and Safety functions

ACTIVITY 12

THE PAPER CLIP GAME

Preparations:

Number of tables: minimum 4, maximum 25
Number of players per table: 6 to 8 players
Number of facilitators: 1 facilitator for 3-4 tables
Total time: 120 minutes
(Introduction: 10 minutes; 4 rounds x 10 minutes= 40 minutes; Debrief – 15 + 15 + 10 + 10 = 50 mins; Explanations before each round 20 minutes)

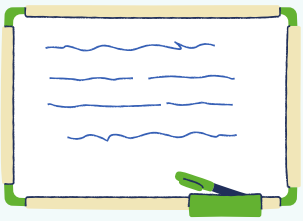
Materials:

1. Prepare the following for each table:
   a. One black bag containing 60 paper clips (comprising 5 green clips and 55 clips of other colours)
   b. Three (3) A4 sheets of paper
   c. One small bowl
   d. One (1) large plate (paper plate preferable)
   e. One clear bowl

2. Reporting sheets (A3)
   a. Reporting sheet 1 – one copy per table (see Annex A)
   b. Reporting sheet 2 – one copy per table (see Annex B)
   c. Reporting Sheets for surgeon (for surgeon A, B and C) – 3 copies per table; label as Surgeon A, B, C (see Annex C)
   d. Reporting sheet 3 - one copy per table (see Annex D)
   e. Reporting sheet 4 (see Annex E)

3. Timer (clock or computer timer)

4. White board or wall for teams to display their reporting sheets



Facilitators should familiarise themselves with the game and instructions for each round before the day of play.

ACTIVITY 12

THE PAPER CLIP GAME

Game/Activity/Event Instructions

Before the game starts (Preparation time: 10-15 minutes)

1. There are four (4) rounds in this game. Each round lasts 10 minutes.
2. Each table should comprise at least 6 persons. Assign the following roles (6 players):
    a. OT Receptionist
    b. Surgeon A
    c. Surgeon B
    d. Surgeon C
    e. Ward Nurse
    f. Quality Manager

Each facilitator will assume the role of the CEO for his/her group.

3. At each table, there should be:
    a. One black bag containing 60 paper clips - Each paper clip is a patient undergoing TKR surgery and the bag of paper clips represents patients undergoing TKR at your hospital
    b. Three A4 Papers - one paper per surgeon
    c. One small bowl - for the Ward Nurse
    d. One QM plate - for the Quality Manager

Game: The Story

Effective and timely use of antibiotics to prevent infection is essential to reduce surgical site infections (SSI). In your hospital, the SSI rate for Total Knee Replacements (TKR) is high. CEO has tasked your team to review if patients are receiving antibiotic prophylaxis (Vancomycin) within 60 minutes before their surgery (best practice)

A patient arriving for TKR surgery will arrive and be registered at the OT. The picture below depicts the process. The roles and responsibilities of each player are illustrated below: (insert slide 7)

Rules of the Game: The lead facilitator informs players about the rules of the game.

a. You cannot change roles.
b. You cannot help the others in their roles.
c. All paper clips must be processed within the A4 paper. Any paper clip found on table or floor is an adverse event.
d. You cannot choose which patients to operate - we practice equitable care!
e. If the surgeon pulls more than 3 clips in his/her hand, his/her picking process has to restart (unsafe practice).
f. The Quality Manager must report results in the "reporting sheet" and paste the sheet on wall.
g. CEO will review each surgical team's results. (this signals the end of the round)

Give everyone time to understand their roles and clarify questions as needed.

At the end of each round, the lead facilitator will debrief.

ACTIVITY 12

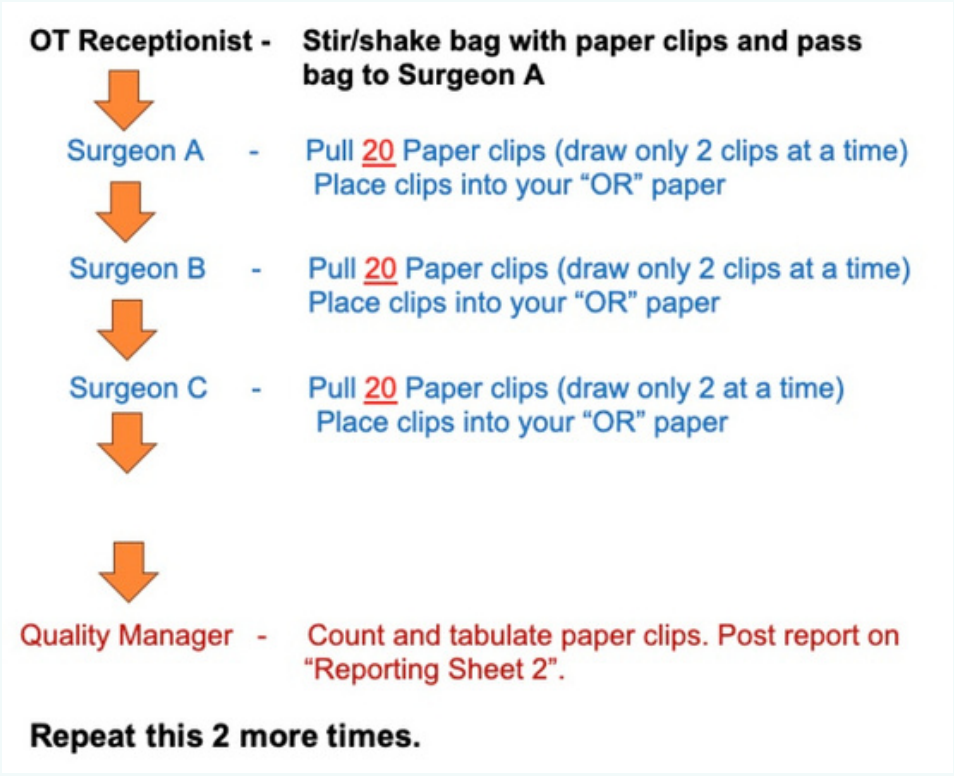
THE PAPER CLIP GAME

Round 1: Data Collection

Intent: To demonstrate the importance of getting the data to the stakeholders of the process.

a. Hand reporting sheet 1 to each table

b. Explain the process for round 1 and how to use the reporting sheet. Clarify all questions.



c. Start the round (10 minutes).

d. Debrief (20 minutes)

i. Explain that each green paper clip ( ) represents a patient who did not receive antibiotic prophylaxis (Vancomycin) within 60 minutes before surgery.

ii. Explain the intent of this round.

1. Aggregated data is collected on a quarterly basis by the quality manager and submitted to the CEO.
2. Data collection is laborious and time-consuming but not timely.
3. The aggregated data does not allow the QM or the CEO to identify the source of the problem.
4. The OT team owns the process but they are not involved in data collection.

iii. Ask each table to reflect and discuss.

ACTIVITY 12

THE PAPER CLIP GAME

Round 2: Data for Performance

Intent: To demonstrate that data for performance is an indicator to evaluate the delivery of care and its services. For improvement to take place, the relevant stakeholders must be involved in understanding and improving the processes to deliver the intended outcomes.

a. Ask each table to put all the clips back into the black bag

b. Hand reporting sheet 2 to each table.

c. Explain the process. For round 2, the process is similar to Round 1 except that 20 paper clips are used instead of 60 paper clips. Clarify all questions.

d. Start the round (10 minutes).

e. Ask each table to reflect and discuss (15 minutes).

f. Debrief (20 minutes)

i. Explain the intent of this round.

1. Aggregated data is collected on a monthly basis by the quality manager and submitted to the CEO.
2. Data collection remains laborious and time-consuming but is timely.
3. Both the QM and CEO can see the trend in a shorter timeframe.
4. It is difficult to identify the source of the problem and the OT team are not involved in data collection.

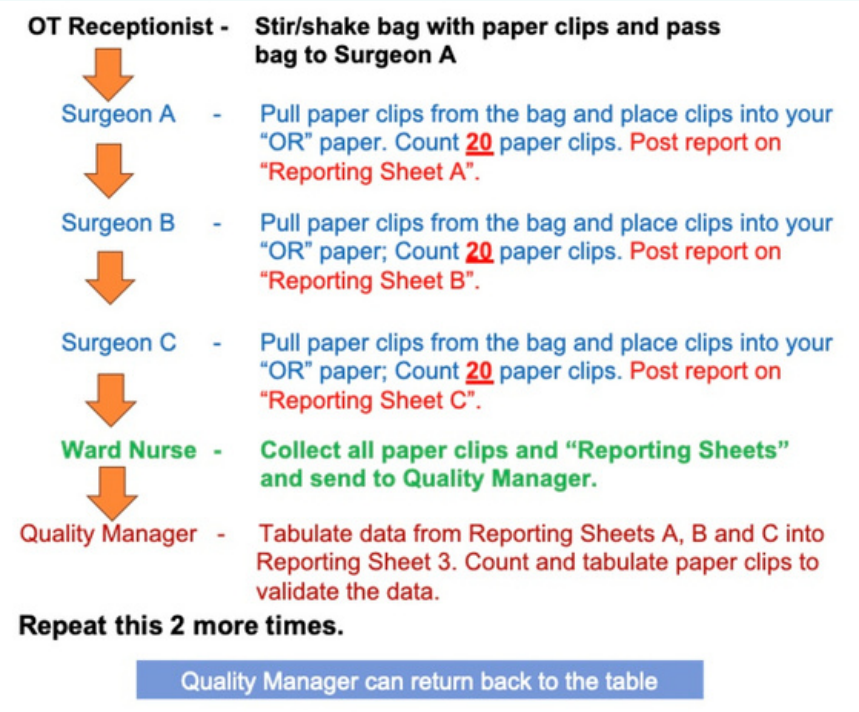
Round 3: Engaging Stakeholders

Intent: To demonstrate the importance of engaging the key stakeholders, namely the surgeons, in data collection.

a. Ask each table to put all the clips back into the black bag

b. Hand reporting sheet 3 and reporting sheets A, B, C to each table.

c. Explain the process for round 3. Pass reporting sheet A to Surgeon A, reporting sheet B to surgeon B and reporting sheet C and surgeon C.



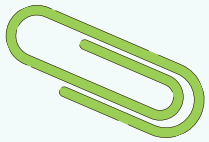
ACTIVITY 12

THE PAPER CLIP GAME

d. Start the round (10 minutes).

e. Ask each table to reflect and discuss (10 minutes)

f. Debrief (20 minutes)



i. Explain the intent of this round.

1. Data is collected individually by the surgeons (non-aggregated data) on a monthly basis.
2. The QM's role has changed from counting the number of cases to validating the number of cases.
3. The surgeons are now aware of their own performance over time and can work together to improve the process.
4. Data collection remains laborious and time-consuming and the surgeons are complaining they do not have time to do this indefinitely.

Round 4: Sampling in Quality Improvement

Intent: To demonstrate the use of small samples in quality improvement.

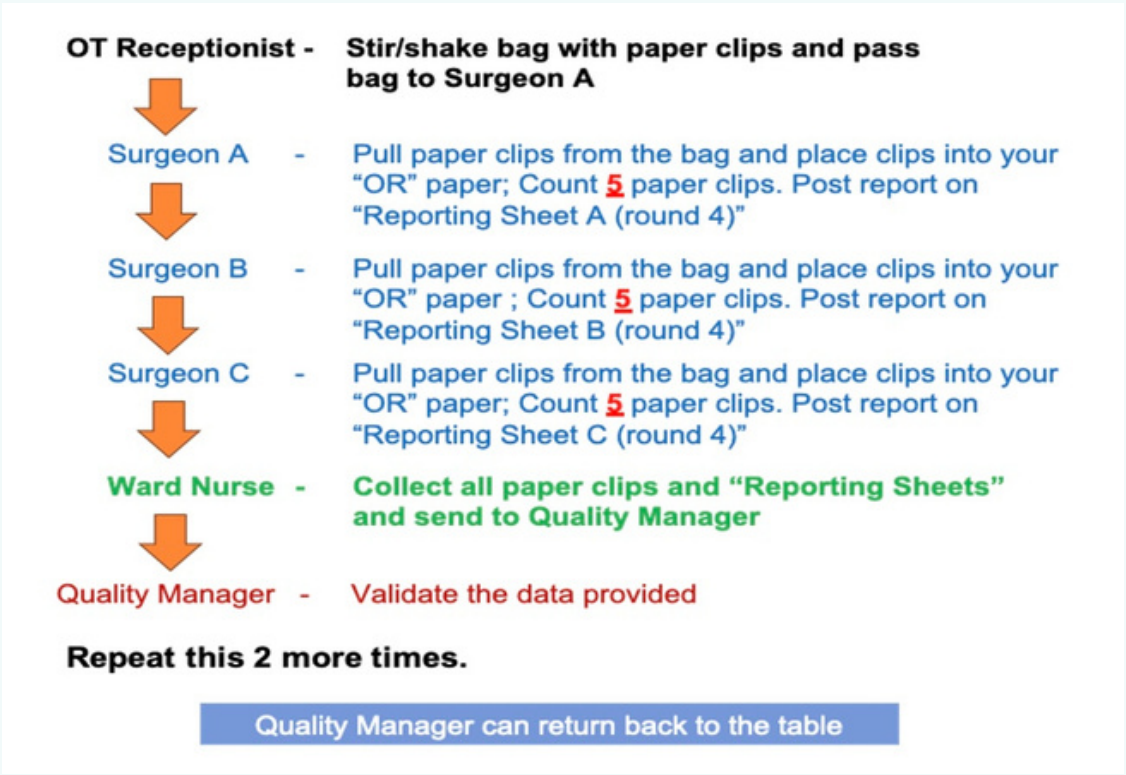
a. Hand reporting sheet 4 to each table.

b. Ask each surgeon add 3 columns (weeks 1, 2, 3) to their respective reporting sheets from Round 3).

c. Explain that the team has reviewed and revised the process. The new process allows the surgeons to establish eligibility criteria for patients before surgery.

d. Hand the clear bowl to each table and ask the OT receptionist to put all the clips into the bowl. The surgeons can now see whether their patients are prepped before surgery.

e. Explain the process for round 4. Clarify all questions.



ACTIVITY 12

THE PAPER CLIP GAME

f. Start the round (10 minutes).

g. Ask each table to look reflect and discuss (10 minutes)

   i. How will using small samples affect the way you learn and improve ?

   ii. How does small improvement "wins" gain leverage?

   iii. How fast can improvement be done in silos?

h. Debrief (20 minutes)

   i. Explain the intent of this round.

      1. Data is collected individually by the surgeons (non-aggregated data) on a monthly basis.
      2. The QM's role has changed from counting the number of cases to validating the number of cases.
      3. The surgeons are now aware of their own performance over time and can work together to improve the process.
      4. Data collection remains laborious and time-consuming and the surgeons are complaining they do not have time to do this indefinitely.

Facilitator's Notes	Instruction to Participants
Be familiar with the reporting sheets as you will need to quickly review the scores at the end of each round	

Tip: If the game requires all participants to contribute at the table, the printout should be A3 or larger. If the game or activity is for each participant to review and reflect, the printout could be A4 size or smaller.

Conclusion: Debrief with Participants

Intent: To allow each participant to reflect and discuss on what they did during each round.

In the concluding debrief, the lead facilitator should:

a. Do a recap on the objectives of the game. The teams should observe a fall in the % of green clips with each successive round; in round 4, the surgeons would be expected to select only non-green clips, suggesting that only patients who have received Vancomycin will proceed for TKR.

b. Summarise the intent and learning points of each round.

c. Explain the differences between intent and measurement tools for performance measures and quality improvement are different. The intent of QI is to improve learning of the system we want to improve and conserve the team's resource. Less time spent on collecting data means more time can be spent on improvement efforts. Measurement in QI should be timely, non-aggregated and can be based on a small sample.

d. Suggested Post-activity actions (e.g. write short reflection on 2 changes I would make in my practices.)

Reference or Source of Game:

1. *Mr Bernard Wong, Senior QI Specialist, Group Quality and Clinical Governance, National Healthcare Group*

ACTIVITY 12 - ANNEX A

THE PAPER CLIP GAME

Reporting Sheet 1

Number of Green Clips (Numerator)	
Total Number of Clips (Denominator)	
% of Green Clips $\frac{\text{Number of green clips x 100\%}}{\text{Number of total clips}}$	

ACTIVITY 12 - ANNEX A

THE PAPER CLIP GAME

Reporting Sheet 2

	Month 1	Month 2	Month 3
Number of Green Clips (Numerator)			
Total Number of Clips (Denominator)			
% of Green Clips $\frac{\text{Number of green clips x 100\%}}{\text{Number of total clips}}$			

ACTIVITY 12 - ANNEX A

THE PAPER CLIP GAME

Reporting Sheet For Surgeon

		Month 1	Month 2	Month 3			
Surgeon A	Number of Green Clips						
	Total Number of Clips						
	% of Green Clips						

ACTIVITY 12 - ANNEX A

THE PAPER CLIP GAME

Reporting Sheet 3

		Month 1	Month 2	Month 3
Surgeon A	Number of Green Clips			
	Total Number of Clips			
	% of Green Clips			
Surgeon B	Number of Green Clips			
	Total Number of Clips			
	% of Green Clips			
Surgeon C	Number of Green Clips			
	Total Number of Clips			
	% of Green Clips			
Total	Number of Green Clips			
	Total Number of Clips			
	% of Green Clips			

ACTIVITY 12 - ANNEX A

THE PAPER CLIP GAME

Reporting Sheet 4

		Week 1	Week 2	Week 3
Surgeon A	Number of Green Clips			
	Total Number of Clips			
	% of Green Clips			
Surgeon B	Number of Green Clips			
	Total Number of Clips			
	% of Green Clips			
Surgeon C	Number of Green Clips			
	Total Number of Clips			
	% of Green Clips			
Total	Number of Green Clips			
	Total Number of Clips			
	% of Green Clips			