The Game Guide
Interactive Exercises for Trainers to Teach Quality Improvement in HIV Care

Developed by the New York Department of Health AIDS Institute
For Health Resources and Services Administration HIV/AIDS Bureau

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Introduction
Why a Game Guide?

Since 1998, the New York State Department of Health AIDS Institute has been teaching providers and support staff about quality improvement. Our workshops have been most successful when the teaching has been interactive and fun. Our experience is consistent with adult learning theory, which reminds us that adults learn by doing, not merely listening.

In our teaching over the years, we have used a number of games that do a good job of combining hands-on learning and a good time. Some of these are classics in the quality improvement field, some come from other disciplines and some we have made up ourselves to bring home an important point. The purpose of this guide is to make these games more broadly available by describing how they work and by clarifying the lessons they help to teach.

How this Guide is Organized

We have organized this guide around five “critical concepts” for quality improvement: that is, five ideas that the people who work in your program will need to understand and become comfortable applying in your quality improvement work.

On the next page, we briefly describe each concept. The games we have chosen will each highlight an important element of the concept, one that we think will be important in your program and its quality improvement work. We tell you what these are when we describe each game.

Remember though, there is a lot more to each concept than what we are able to include in this guide. We urge you to explore them further.

Descriptions of the Concepts

Data and Measurement. "One of the key principles of quality improvement is that ‘you can’t improve what you can’t measure.’" As clear as that sounds, the task of measuring performance can quickly get very complicated. Your program will need to decide what to measure, how to measure it, and how to react to the measurement once you have it.

Testing and Making Changes. Having an idea is one thing but making it work in your setting is another. All ideas for change have to be tailored to fit the specific circumstances of the organization in which they will be made. The only way you can do this is by testing the change out, and adapting it based on what you learn.

Cooperation. Health care is not a solo activity. It depends on people working together to share information and ideas. Because people work in teams, quality improvement teams also work in teams. We think you will find the games in this section teach participants how to help people be more open to change.

Correspondence. Health care is not a solo activity. It depends on people working together to share information and ideas. Quality improvement requires cooperation among people across disciplines and departments.

Developing Changes. "What changes can we make that will result in an improvement?" is one of the three questions of The Improvement Model (see the Resources section for more information on this model). Sometimes good ideas for change are obvious and sometimes they are not. There is a whole body of information, some from clinical research and some from operations research, about how to develop changes that have a good chance of being successful in a specific time frame for your program. The games in this section are designed to help the people in your program understand what data information is and to help them become comfortable with using it.
**Developing Changes Games**

**Use this game:**
- Think Inside the Box Game
- Sudoku Game
- Egg Drop Game
- Reversals Game

**To teach this concept:**
- How to break out of “stuck” thinking
- Involving both customers and teams in problem-solving
- What “change concepts” are and how they work
- How to build on the creativity of others

**Data and Measurement Games**

**Use this game:**
- Red Bead Game
- White Bead Game
- Deck of Cards Game
- Paper Puppets Game
- Who’s Here? Game

**To teach this concept:**
- Ways of effectively collecting and displaying simple data
- Why processes matter and how to measure a process’s performance
- What “tampering” is, and why it can be harmful
- How to measure average levels of performance improvement
- Ways of effectively collecting and displaying simple data

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**What We Tell You**

Each game description contains:
- The “learning objectives” for the game, that is, what points it is designed to teach.
- Recommendations for a target audience.
- Where it comes from: who developed it and where you can read more about it, if you want.
- What you’ll need to play the game: general and specific tools.
- The time it will take.
- Background information the players should give the players before the game starts.
- Instructions for playing the game.
- Tips for handling potential pitfalls.
- Key points to discuss when the game is over, to help make sure the game’s learning objectives are met.

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**What You Can Tell Us**

Please let us know how you have used this guide, whether you have found it helpful and suggestions you may have about how it might be improved. Your comments can be sent to Info@NationalQualityCenter.org or visit us at our website at NationalQualityCenter.org.

And if you have come up with games of your own that you are willing to share, please let us know so that we can include them in future additions of this guide!
### TO TEACH THIS CONCEPT:

- It's important to celebrate success!
- The best teams use the skills of everyone on the team.
- Teams can get better results than individuals.

### USE THIS GAME:

- **Peg Game:** The DMAIC Cycle and how it works.
- **Tennis Ball Game:** Developing and testing hypotheses by developing and testing hypotheses.
- **Paper Airplane Game:** Developing and expanding on pilot tests.
- **Selling Spread Game:** People vary in how they adopt changes.
- **Model Kitchen Utensil Game:** Understanding resistance to change.

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<th>GAME CONTENT MATRIX</th>
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<td><strong>USE THIS GAME:</strong></td>
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### TESTING AND MAKING CHANGES GAMES

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Red Bead Game

Why Use This Game

- To teach that variation is to be expected any time you measure something.
- To teach that there are different causes of this variation.
- To teach how different management and improvement strategies are needed, depending on the cause of the variation you are seeing.
- To help colleagues understand that the structure of a system determines how individuals perform within that system.

Target Audience

Senior leaders, managers, quality improvement (QI) team members, and all others who will be acting on the results of data collection (patients and consumers may find it interesting as well).

Key Concepts

- Even with identical methods and tools, there will be variation in results. These variations in results may have little or nothing to do with any one worker's skill, or willingness to work hard.
- Any process whose output is capable of being described by a normal distribution is determined by the way it is set up, not by a particular worker's actions.
- Real improvements in a process come from addressing the underlying way the process is set up.
- Management's job is to work "on" the process, to change the process design so that the process works better.

Source, History and Resources for More Information

The "Parable of the Red Beads" was developed by W. Edwards Deming, a pivotal figure in the field of QI. He used it as a teaching tool in hundreds of seminars he gave throughout the world until his death in 1993. Mary Walton's book, "The Deming Management Method" (Putnam, 1986) contains a lively description of Dr. Deming conducting the game. A useful web site for additional information about Dr. Deming is http://deming.eng.clemson.edu/pub/den/files/Red_Beads.pdf

Materials

For this game, you will need:

- A score sheet and a graph format on which to plot the results (see below for examples). These should either be projected (with a transparency or from a computer) or written large enough so everyone in the room can read them
- A "red bead kit." There is a box with a mixture of red beads and beads of one other color (usually 1000 red beads and 4000 alternate color beads) and a paddle with 50 holes to pull beads out of the box.

Preparation

To prepare for this session:

- Familiarize yourself with the session's structure and content:
  - Read through the game instructions and key teaching points in their entirety.
  - Practice the game itself.
  - Practice presenting the key teaching points.
- Prepare the room:
  - Arrange chairs in a semi-circle or rows (depending on how many will be in your audience).
  - Set up a table in the front of the room.
  - Set up the equipment (e.g., flip chart, overhead projector, or LCD projector) you will use to project the chart of game results. Test the equipment to make sure it works.

Playing the Red Bead Game

Welcome and Introductions

To begin the game, welcome participants and thank them for their participation. If necessary, ask individuals to introduce themselves to the group.

Learning Objectives

Tell participants that by the end of the session they will:

- Understand that variation is to be expected any time you measure something and that there are different causes of this variation.
- Recognize that different management and improvement strategies are needed, depending on the cause of the variation you are seeing.
- Appreciate that the structure of a system determines how individuals perform within the system.
- Begin to see how to apply these concepts to their HIV program.

Agenda

Provide a brief description of the session's primary components:

1. Background to the Red Bead Game.
2. The game itself.
3. Optional feedback on what the game showed, and how inclusion can be applied to HIV care.
4. Feedback and close.
Background to the Game

Facilitator’s note

In the Red Bead Game, workers produce beads in a flawed process that results in many defects: red beads. The manager – played by you – runs several “good” management interventions designed to improve individual’s performance. By doing this, she assumes that the defects result from individual actions rather than a logical consequence of the way the process is designed. Through their interaction with the manager, the game participants and audience come to understand the importance of addressing the “common cause” of variation – the design of the system.

Key points to explain to your audience:

• Many organizations working in quality have long discussions about exactly which quality indicators they will use or what they will measure. As quality expert Paul Plsek notes, however, “while deciding what to measure and how to measure it are important challenges, an equally important challenge lies in determining the appropriate reaction to the measurement once we have it.” The Red Bead Game illustrates why this challenge is so critical to quality improvement.

• All measurements show variation (if you see no variation, someone is probably “cooking” the data!). Your commute to work will vary every day, for example. Sometimes, this variation may be a result of an unusual, or “special” cause: a bad accident, perhaps, or an ice storm. Most of the time, however, the variation results from “common” causes that are built into the process: the number of people on the road, the way the traffic lights are timed, whether you get out the door a few minutes earlier or later than usual. You will have more impact on improving the performance of a process if you work on reducing the common cause variation.

• The Red Bead Game is a way of explaining why it is important to understand this difference.

The Game Itself

(These instructions are based on background material for the Red Bead Game prepared by the Institute for Healthcare Improvement.)

1. Organize the company.

• Recruit your work force from the audience.
  - 4-6 workers.
  - 1-2 quality inspectors.
  - A quality data analyst, who records the results.

• Write each worker’s name on the data results chart that is on the flip chart or projected in the front of the room.

2. Hold your first staff training session.

• Welcome your workers.

• Explain that the purpose of the company is to make white (or blue, or whatever your dominant color is) beads. You have done research; that is what the customers want.

• Demonstrate the production process yourself. Make it complicated, and stress that it must be followed exactly. One possibility:
  - Stir the beads in the box with your right hand three times, clockwise, while holding the paddle in your left hand.
  - Transfer the paddle to your right hand. Insert it into the far side of the box, long side down. Move the paddle towards you while shaking it so a bead falls into each hole. Smooth off the excess beads with your left hand.
  - Present the paddle to the inspector.

• Explain that the inspector now counts the red beads, because they are defects. The inspector reports the count of red beads to the quality data analyst, who records the number of defects on the data results chart.

• Encourage your employees to work hard, do a good job, and not make red beads! You are relying on them not to make mistakes! This company has been your life-long dream, and you are counting on their hard work to make it a success!

Red Bead Game - Data Results Chart [5 workers]

<table>
<thead>
<tr>
<th>NAME</th>
<th>DAY 1</th>
<th>DAY 2</th>
<th>DAY 3</th>
<th>DAY 4</th>
<th>TOTAL PER WORKER</th>
<th>TOTAL PER DAY</th>
<th>AVERAGE PER DAY</th>
</tr>
</thead>
</table>


3. Begin the production process.
- Each worker "makes" one paddle's worth of beads and their defects are counted by the inspector and recorded by the quality data analyst.
- Praise workers who make few red beads. Be creative: use every positive-reinforcement management technique you know (for example, offer to make them employee of the month).
- Criticize workers who make many red beads. Begin by being sympathetic ("everything okay at home?") and move to criticism and threats to demote or fire them as "days" of work go on.
- After two days, inform your workers that the company may go out of business if they don't stop producing so many defective (red) beads.
- Continue working for a total of four days, keeping up your management interventions. At the end of four days inform the workers that the company has folded, thank them and send them home.

Debrief and Discussion
- Begin by asking the participants how it felt to work for the Bead Company. Ask whether your management interventions were helpful, whether they were surprised at the results, and what they would have done to improve the Bead Company's production process.
- Most of the time, participants answer that they felt frustrated and stupid. They are not surprised by the results because of the set number of red beads in the box, and to improve the results they would have removed the red beads at the start.
- Point to the data results chart. Note the variation in performance. Ask why it is occurring.
- Remind your audience of your presentation on special cause and common cause variation. Ask them what they see in the Red Bead Game results (answer: common cause variation).
- Ask your audience if they can recognize "red bead" situations in their own HIV programs. If they need prompting, ask about responses to their quality data. What happened if a number -- the number of visits, for example -- goes up or down in a given month? Do they react just to that number (treating it as if it is the result of a special cause) or look at the pattern over several months? Then probe further:
  - Are they workers or managers in these situations?
  - What is the end of creating or data in this map?
  - What changes would they like to see in the data are used in other programs?
  - How can they make these changes? What suggestions do others have to help?

Feedback and Close
- Ask your audience for feedback on whether this session met its objectives. Take note of their responses on a flip chart, and keep it for your use in the future.
- Schedule an informal follow-up session with any audience member who needs clarification or more information on the game or the concepts you discussed.
- Thank your audience, especially those who participated in the game.

White Bead Game

Why Use This Game
- To teach the concept of sampling, which shows that you can get a good estimate of performance by looking at a subset of results rather than at your entire population.

Target Audience
Senior leaders, managers, QI team members, and all others who will design data collection strategies.

Type of Game
A competition among teams.

Key Concepts:
- Sampling is a good strategy for data collection. It is possible to determine from large a subset of existing data we need in order to assure the insights we have about these data with a predetermined amount of error.

Source, History and Resources for More Information
For concepts behind this game are taken from the publication "Sampling Techniques," developed by Wai Cho Yee for the New York City Health and Hospitals Corporation in 1995. You can find more on his work at:


Material

For the game, you will need:
- A "red bead kit"—there is a box with a mixture of red and blue beads. The box contains 100 red beads and 1000 blue color beads and a paddle with 50 holes to pull beads out of the box.
- Red bead kits can be purchased at: www.redbead.com
- If you don’t have a red bead kit, you can use any container with two types of objects in it (e.g., a box of blocks and small paper clips, for example, or tiles in two types of colored borders). You will need to count how many of each type are in the box.
- A pad of paper and pens for each team to record results.
- A flip chart and markers to record the key points of the discussion.

Preparation

To prepare for this session:
- Familiarize yourself with the session’s structure and content.
- Practice the game itself.
- Practice presenting the key teaching points.
- Prepare the room:
  - Arrange chairs around a table. The participants will sit at the table.
  - Practice presenting the key teaching points.
  - Practice the game itself.
- Read through the game instructions and key teaching points to choose your audience:
  - Practice the game itself.
  - Practice presenting the key teaching points.

Facilitator’s note

Managing time is an important skill and can be a challenge. Programs can have several hundred patients or clients and conducting a review of every chart to determine, for example, how many received referrals to a dentist is a daunting task. The field of statistics comes to the rescue by providing a way to select a sample of charts that will give a valid picture of your dental referral rate, or any other measure you are looking at.

The Game Itself

Welcome and introductions.

To begin the game, welcome participants and thank them for their participation. If necessary, ask individuals to introduce themselves to the group.

Learning objectives.

Tell participants that by the end of the session, they will:
- Understand how to select a sample of data (charts) from a larger number (e.g., every patient, every case, every encounter).
- Begin to use data to apply the concepts in the use of data to their HIV programs.

Agenda.

Provide a brief description of the session’s primary components:
1. Background to the White Bead Game.
2. The game itself.
3. Debrief and discussion on what the game shows, and how its lessons can be applied to HIV care.
4. Feedback and close.

Background to the game.

Facilitator’s note.

Managing time is a very-consuming skill that can be a challenge. Programs can have several hundred patients or clients, and conducting a review of every chart to determine, for example, how many received referrals to a dentist is a daunting task. The field of statistics comes to the rescue by providing a way to select a sample of charts that will give a valid picture of your dental referral rate, or any other measure you are looking at.

Thebead game is designed to help you show your colleagues just how useful sampling can be. Sometimes, people who have not worked with statistics don’t quite trust that counting a small number of charts (carefully selected, of course) can be as accurate as looking at every single one. This game introduces the concept of sampling, as helpful people become more comfortable with it.

Selecting your actual sample is more difficult, as there are rules you must follow and decisions you must make. How you select the sample is the same as in the Red Bead Game:

- The National Quality Center can provide additional information on sample selection, or take a look at the sources mentioned earlier in this game description.
- Remember that sampling gives you a result within a predictable range of error, and the value of using sampling is that the range of error is predictable. In the White Bead Game, you can use the results to estimate the number of white beads by selecting a sample of 100, while another selects a sample of 20. These teams can be used to determine the range of what the beads are by the end of the game. Each team follows a different approach:
  - Team A tries to count every bead in the box.
  - Team B creates an estimate without doing any counting.
  - Team C randomly selects 100 beads from the box and estimates the total number of white beads based on this sample. Team C could repeat this process if necessary (see Facilitator’s Note).
  - Team D randomly selects 100 beads from the box and estimates the total number of what beads based on the sample. The number of beads estimates should give a result that is at least 95% confidence level. To estimate the true percentage of what beads plus or minus 2% (for a box of 4000 white and 1000 red beads), Team D could repeat this process up to three times or 500 times (see Facilitator’s Note).
  - Note that these samples must be randomly chosen. The same team cannot choose itself. The same team cannot use the same sample on a single team.

The Game Itself

Welcome and introductions.

To begin the game, welcome participants and thank them for their participation. If necessary, ask individuals to introduce themselves to the group.

Learning objectives.

Tell participants that by the end of the session, they will:
- Understand how to select a sample of data (charts) from a larger number (e.g., every patient, every case, every encounter)."
Feedback and Close

- Ask your audience for feedback on whether the session met its objectives. Take note of their suggestions on a flip chart, and keep for use in the future.
- Schedule an informal follow-up session with any undecided members who were clarification or more information on the game or the concepts you discussed.
- Thank your audience and congratulate them on their hard work.

Deck of Cards Game

Why Use This Game

- To show the problems that can result from making the wrong kind of changes in a process.
- To demonstrate a “stable” process.
- To show how to make a stable process better.
- Some management approaches can result in extremely unstable processes.

Target Audience

Managers and leaders of organizations. This game is geared towards people who will be leaders of improvement efforts, and to those who frequently review performance data, such as QI committee members.

Type of Game

A demonstration with everyone participating.

Key Concepts

- The first thing to do to improve a process is to make it more stable and predictable.
- It is very important to understand what else you can try to improve a process, and by doing this you make the process less stable and predictable.
- Some management approaches can result in extremely unstable processes.

Source, History, and Resources for More Information

This game was developed by Kristin J. Arnold, president of Quality Process Consultants, Inc., in Fairfax, VA. Arnold based this game on W. Edwards Deming’s funnel experiment, and published her description of the game in the October 2001 issue of Quality Progress (page 115).

Materials

For this game, you will need:

- A room with enough empty floor space that four groups of 2-8 people can work without running into each other.
- Four sets of 12 playing cards each.
- Three tape measures.
- Four “targets” that stick to the floor (sticker colored dots work well).
- Twelve colored dots of a different color for Team B.
- One “rule card” for each team.
- A flip chart and markers to record the key points of the discussion.
If so, it will be better to work on the process as a whole. A better approach is to study the process to see if it works out. Most of the time, when something goes wrong in a place, it is so harmful. The game can then start a discussion of tampering looks like and will help the participants see why it is so harmful. The Deck of Cards Game provides a clear picture of what tampering and its results can be. Deming points out that the unwarranted changes involved in tampering make processes work less well because they introduce new components every time the process is run. When tampering occurs, the results are unpredictable and much harder to manage well.

Training and its results can be difficult concepts to convey. The Deck of Cards Game provides a clear picture of what tampering looks like and will help the participants see why it is so harmful. The game can then start a discussion of examples of tampering the participants have experienced, especially in their HIV programs.

Key points to explain to your audience:

- Familiarize yourself with the session’s structure and content.
- Prepare the room.
- Prepare the “rule cards” (samples are given in Attachment 1):
  - Prepare the room.
  - Place one colored dot on the floor for each of the primary components:
    - Prepare the “rule cards” (samples are given in Attachment 1): precise position, which is the best spot you aimed at (same distances, but opposite direction). Use a colored dot to mark the last targeted position.
    - Make sure each team understands its rule, and allow them to gather around one of the target dots on the floor.
    - Teams A and D will finish quickly, teams B and D also each get a tape measure, and team B gets a page of colored dots.
- Review the rules for each team and distribute the rule cards.
- Divide the participants into four teams. Tell each team the objective is to produce as many products as close to the target as possible, while following a particular rule. Hold up the first rule card for all to see.
- Explain that each team produces a product by marking up and dropping one playing card from shoulder height. The playing card should be held perpendicular to the target on the floor, NOT parallel to the floor. Demonstrate to each team the rule and distribute the rule cards.
- Give each team its stack of playing cards. Teams A, B, and D also each get a page of colored dots, and team B gives a page of colored dots.
- Make sure each team understands its rule, and allow each team to work collaboratively to produce 12 products. Teams A and D will finish quickly, teams B and C take longer.

Playing the Deck of Cards Game

Welcome and introduction:

- To begin the game, welcome participants and thank them for their participation. If necessary, ask individuals to introduce themselves to the group.

Learning objectives:

- Tell participants that by the end of the session they will:
  - Understand how making the wrong changes in a process can hinder the process.
  - Understand how making those types of changes can be devastating to the staff who work in the process.
- Begin to see how to apply these concepts in their HIV program.

Agenda:

- Provide a short description of the session’s primary components:
  1. Background to the Deck of Cards Game.
  2. The game itself.
  3. Debrief and discussion on what the game shows, and how we in HIV can apply it.
  4. Feedback and close.

Background to the Game

Deming’s note:

Deming developed his funnel experiment, on which Arnold based this game, to illustrate the concept he called “tampering.” Tampering is “making changes or adjustments in a process our instinct is to react to what we think is the immediate cause. We “tweak” the process and hope it works out. A more general description of tampering is “making changes or adjustments in a process when such changes are not warranted” (Paul Plsek).

To prepare for this session:

- Review the rules for each team and distribute the rule cards.
- Inform participants that by the end of the session they will:
  - Be able to explain the concepts of tampering and the results it produces are basically visible and predictable. If it is well, it is better to improve the process as a whole.
Debrief and Discussion

Review the distribution of cards with the entire group.

- Ask the team to share the rule it followed and its results and to speculate about what happened to the process.
- Team A: The cards will probably cluster around the target. The distribution is stable and shows minimal variation from the target. Even if you have a bad process, your results will be predictable and manageable.
- Team B: The cards will tend to drift because the distribution is unstable and moves away from the target. This is how most processes become over-adjusted from where the operation was during the last process run.
- Team C: The distribution of cards fans out and is unstable but symmetrical around the target. The team knows where the standard is, but adjusts it based on the last piece produced.
- Team D: The cards will tend to drift because the distribution is unstable and moves away from the target in one direction. This is how most processes become over-adjusted from where the operation was during the last process run.

- Have each team come up with an example of rules B, C, and D in their HIV program. Examples of C and D are most common.

- One clinic, for example, saw a few weeks of low visits and started scheduling lots more patients. The clinic quickly became overcrowded and so the staff decided that the number of scheduled visits needed to be reduced to comply with complaints about lack of access. This would be an example of actions like those taken by team C.
- Team D's experience shows what happens when, for example, you don't have a consistent training program for new employees. If one employee makes an error, and so on, the message will change over time as new performance standards are set. Ask the participants what has been the result of these types of changes?

Feedback and Close

- Ask your audience for feedback on whether this session met its objectives. Take note of their responses on a flip chart, and keep it for your use in the future.
- Schedule an informal follow-up session with any audience member who wants clarification or more information on the game or the concepts you discussed.
- Thank your audience and congratulate them on their hard work.

Deck of Cards Game

Objective: To produce as many products as close to the target as possible while following a particular rule.

TEAM A'S RULE
Drop every card over the target.

TEAM B'S RULE
- After your first drop, measure the distance from the target to the spot where the card landed. For example, your card may have landed 3" to the right of the target.
- See the new drop point over the point the same distance from the target, but in the opposite direction (e.g., 3" to the left of the target).
- Mark this drop point with a blue dot.
- Drop again. This time, measure the distance from your current target (i.e., the blue dot).
- See your new target at that distance, but in the opposite direction, from the blue dot.
- Mark this new target with another blue dot.
- Continue.

TEAM C'S RULE
- After your first drop, measure the distance from your current target (i.e., the blue dot).
- See your new target at that distance, but in the opposite direction, from the blue dot.
- Mark this new target with another blue dot.
- Continue.

TEAM D'S RULE
Set the next drop position right over the spot where the last card landed.

Attachment 1
Sample Rule Cards

Objective: To produce as many products as close to the target as possible while following a particular rule.

TEAM A'S RULE
Drop every card over the target.

TEAM B'S RULE
- After your first drop, measure the distance from the target to the spot where the card landed. For example, your card may have landed 3" to the right of the target.
- See the new drop point over the point the same distance from the target, but in the opposite direction (e.g., 3" to the left of the target).
- Mark this drop point with a blue dot.
- Drop again. This time, measure the distance from your current target (i.e., the blue dot).
- See your new target at that distance, but in the opposite direction, from the blue dot.
- Mark this new target with another blue dot.
- Continue.

TEAM C'S RULE
- After your first drop, measure the distance from your current target (i.e., the blue dot).
- See your new target at that distance, but in the opposite direction, from the blue dot.
- Mark this new target with another blue dot.
- Continue.

TEAM D'S RULE
Set the next drop position right over the spot where the last card landed.

TEAM E'S RULE

Paper Puppets Game

Why Use This Game
• To explain what a process is, a series of steps that turns a set of "inputs" into an "output.
• To show how to measure the different parts of a process.
• To introduce some of the tools used in analyzing data about a process.

Target Audience
Clinical and administrative staff and anyone who will be involved with measuring and evaluating your program’s quality of care.

Type of Game
Demonstration with volunteers participating (requires an audience member to participate plus volunteer timekeeper).

Key Concepts
• All work takes place in processes (a process is a series of steps that produces an output).
• The quality of a process can be measured at many points in the process.
• Simple tools can help you analyze data.

Source, History and Resources for More Information
This game is taken from a more complex version developed by Janelle Heineke of Boston University. Heineke uses her version as a first class for her students in her Operations Management course. See: Heineke, Janelle, "Enhancing Learning Using Classroom Games and Exercises," Quality Management Journal, 1997, 4:4, 32-42.

Materials
For this game, you will need:
• Colored paper, at least 25 sheets
• White paper, a few sheets
• Blue or black marker
• Red marker
• Scissors
• Ruler
• A flip chart and felt-tipped marker for displaying graphs and charts
• 5 task time sheets (Attachment 1)
• 5 throughput time sheets (Attachment 2)
• 1 quality control form (Attachment 3)

Preparation
To prepare for this session:
• Familiarize yourself with the session’s structure and content:
  - Read through the game instructions and key teaching points in their entirety.
  - Practice the game itself.
  - Practice presenting the key teaching points.
• Prepare the room:
  - Set up a long table at the front of the room with five chairs along one long side (one for each “workstation”).
  - Seats for the rest of the audience should be set up auditorium style or in a semi-circle.
  - Place the stacks of colored and white paper at the first workstation, the scissors at the second, the blue marker at the fourth, and the red marker at the fifth.
  - Also place a partially completed unit at each workstation to show each worker exactly what his or her output should look like.
  - Add a multi-chart to the chart and for the Quality Inspector.
  - Prepare a sample puppet to use as a model and demonstration.

Playing the Paper Puppets Game
Welcome and Introductions
To begin the game, welcome participants and thank them for their participation. If necessary, ask individuals to introduce themselves to the group.

Learning Objectives
Tell participants that by the end of the session they will:
• Understand what a process is and how the design of the process affects quality.
• Have experience using tools for measuring a process.
• Have experience analyzing data about a process.

Agenda
Provide a brief description of the session’s primary components:
1. Background to the Paper Puppets Game.
2. The game itself.
3. Debrief and discussion on what the game shows, and how to transfer the lesson to HIV care.
4. Feedback and close.
Background to the Game

Facilitator’s note

“Processes, not people” is one of the first concepts taught about quality improvement. Most people in health care will be familiar with this idea, and most people believe it. The purpose of this game is to give people a chance to see just how the structure of a process can affect quality, and to give them experience with measuring and analyzing the process’ features.

This version of the game features two data analysis tools: pareto diagrams and run charts. Pareto diagrams allow you to analyze causes by category, and run charts show the variation in data over time. By looking at cause-and-effect groups, you can make a data-driven decision about which part of a process to address, and by looking at variation over time you can begin to develop hypotheses about why a process may be working well. For example, you might look at age or sex of the client, and see that someone in a certain group is most likely to miss their appointment. These groups are likely to have young children, so perhaps your program could start offering support in this area. (More exercises exist to teach these tools more intensely; the purpose of this game is to illustrate how they might be useful.)

Key points to explain to your audience:

• Improvement comes from addressing the processes of work.
• One step in a process affects another; each step can’t be viewed in isolation.
• Developing and tracking good process measures is critical to being able to improve the process.
• Simple tools can help analyze what these measures show you.

The Game Itself

• Tell participants that their job is to produce a “complex toy product” and that their pay will be based on the number of products that they complete.

• Instruct workers in the 5 tasks of the production process:

- Task 1 worker folds the bottom of a piece of 8 1⁄2 x 11 paper to align with the right side to define a square.
- Task 2 is designed to be the bottleneck task. The worker must cut off the excess paper with a scissors, fold the second diagonal of the square, then fold each corner in to the center of the square to form a smaller square.
- Task 3 worker folds the small square over and draws a pair of eyes, one eye on each of 2 neighboring squares, with the black marker.
- Task 4 worker flips the square over again and draws in the tongue with the red marker.
- Task 5 requires the worker to flip the square over one more time and insert a finger under each of the four squares on this side and folding each side of the square together.

- After the tasks have been explained to the workers, give them a few sheets of the white paper to practice their tasks before the actual simulation.

- Ask for volunteers from the audience to act as timers. Five task timers measure, in seconds, how long it takes each worker to do one task (from the time a worker picks up a unit until he or she is finished with that unit). One throughput timer measures the time it takes to complete a single unit. Note: this can be difficult at bottlenecks since there can be long queues of units ready to be worked to.

- Ask for one more volunteer to be the quality inspector who reviews and accepts or rejects each finished puppet. Keep the criteria the inspector should use purposefully vague.

- Let the system of production produce 20 items.

Debrief and Discussion

• Review results. Ask the participants, what did they observe? Major common responses are:

- Task 3 was the longest task.
- Task 4 (or sometimes 5) was the shortest task.
- The worker at task 2 was never idle.
- The workers at tasks 3, 4, and 5 were idle most of the time.
- The workers at tasks 3, 4, and 5 slowed down after a few units had been produced.
- The worker at task 1 ran out of space to send units to task 2.
- The worker at task 2 exhibited signs of frustration: flushing, rushing, making comments about being overworked.

- Some may give suggestions on how to improve the process: providing square paper to use, for example, or a template for the eyes and tongue or for the folds needed in the paper.
• Introduce the quantitative analysis.
  - Ask one group of participants to look at the quality inspector’s data and identify categories of defects. Have them draw a bar graph, with the types of defects on the horizontal axis and the number of occurrences of each defect on the vertical axis, with the highest number on the left hand bar and the rest in descending order (see Attachment 5 for an example). This is a rough Pareto diagram, designed to show the relative influence of different causes on a overall result (in this case, poor quality puppets). The diagram helps identify which part of the process should be looked at in order to provide puppets of higher quality.
  - Additional groups of participants can draw run charts – line graphs – based on the task time sheets and throughput time sheets. The horizontal axis is numbered for each unit, from 1-20. The vertical axis is labeled with “number of seconds” and the time each unit took is recorded, with the points for each unit connected with a line (see Attachment 5). Ask about the conclusions they can draw from the chart. Why does the throughput time increase? Which task takes the longest and increases the most? How does this relate to their initial response to the process?
  - Ask about processes in their HIV programs:
    - Which work well? Which seem to have bottlenecks?
    - Which do we measure now? Which should we measure? How?
    - If we measure process performance, how will we organize ourselves to act on the results?

Feedback and Close
• Ask your audience for feedback on whether the session met its objectives. Take note of their responses on a flip chart, and keep for your use in the future.
• Schedule an informal follow-up session with any members who need clarification or more information on the game or the concepts you discussed.
• Thank your audience and congratulate them on their hard work and success.

Attachment 1

Task Time Sheet

<table>
<thead>
<tr>
<th>Task</th>
<th>Time in Seconds</th>
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<tbody>
<tr>
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<td>Average</td>
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### Attachment 2

**Throughput Time Sheet**

Record the time from start of work on a unit at Task 1 to the completion of work on that unit at Task 5 to end of work on unit.

<table>
<thead>
<tr>
<th>UNIT</th>
<th>TIME IN SECONDS</th>
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<tbody>
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**Average**

### Attachment 3

**Quality Control Form**

<table>
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<tr>
<th>UNIT</th>
<th>ACCEPT OR REJECT?</th>
<th>COMMENTS</th>
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<tbody>
<tr>
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</table>

**Acceptance Rate**
### Attachment 4

**Sample Pareto Diagram and Sample Run Chart**

### Pareto Diagram: Reasons for Rejects

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<thead>
<tr>
<th>Reason</th>
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**Run Chart: Throughput Time**

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<th>Unit Number</th>
<th>Throughput Time (Seconds)</th>
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<td>50</td>
</tr>
<tr>
<td>2</td>
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<td>...</td>
</tr>
<tr>
<td>21</td>
<td>300</td>
</tr>
</tbody>
</table>

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### Who’s Here? Game

#### Why Use This Game
- To give teams experience in designing indicators and data collection methods.
- To show different ways of graphically displaying data.
- To start a discussion about data stratification, mean, and range.

#### Target Audience
Senior staff, team members, and anyone else who will be involved in collecting and analyzing data. This game works best if it is part of an introduction to data display tools.

#### Type of Game
A competition among teams.

#### Key Concepts
- Data should give rise to the answers to useful questions.
- Displaying these data graphically makes them easier to understand.
- A good data tool will also tell you about the distribution of the data you have collected.

#### Source, History, and Resources for More Information

#### Materials
- Flip chart and different colored marking pens for each team
- One instruction sheet for each team (see Attachment 1)

#### Preparation
- Familiarize yourself with the session’s structure and content:
  - Read through the game instructions and key teaching points in their entirety.
  - Practice the game itself.
  - Practice presenting the key teaching points.

- Prepare the room:
  - Arrange chairs around a table or tables, set up to make it easy for the participants to work in small groups.
  - Set up an additional flip chart in the front of the room so you can capture key points of the discussion after the game.
Playing the Who’s Here? Game

Welcome and Introduction
To begin the game, welcome participants and thank them for their participation. If necessary, ask individuals to introduce themselves to the group.

Learning Objectives
Tell participants that by the end of the session they will:
• Understand the relationship between collecting data and answering useful questions.
• Have experience creating data displays tools.
• Have experience analyzing data displayed in graphs and charts.

Facilitator’s note
The purpose of this game is to give participants experience in creating and using data displays. Unlike data display exercises that give you a data set and ask you to graph it, this game requires each participating team to: (1) guess the “unknowns” they tell them that, after the game, they will ask of their fellow participant and then display the results graphically. This game illustrates the data collection and analysis process, rather than the mechanics of a particular tool.

You may need to give the participants a quick refresher in creating and using charts, histograms, bar graphs, etc., although most people already have some familiarity with these. The authors of the game point out that although most people in health care settings have some familiarity with these, they often lack the skills necessary to use them effectively. Since data collection is an often-overlooked but crucial element of any program, this game can help make participants more aware of the importance of good data collection.

The Game Itself

• Ask participants to break up into groups of 4 to 6 with people they like themselves and no more than 6 groups total. If asked what you mean by “most like,” provide no more information.
• Give each group a copy of the instructions (Attachment 1).
• Each group gathers around its flip chart and gives itself a name, writing it on the flip chart.
• Each team computes a question it will ask of other participants to determine how the groups have been formed.
• After all teams have compiled questions, announce the participants who follow directions from all the participants, including their own team. Team members should record each person’s name and his/her answer.
• Each team then creates a graphical display of their information.
• Teams then quickly present their findings and show their chart/graph.
• The facilitator selects the winning team.

Debrief and Discussion
• Review results.
• Ask the teams to describe their work. How did each team decide on its question?
• Look at the graphs and analyze the data more deeply.
• What do these data tell you about the makeup of the group of participants?
• Can you identify the data that is useful to you? What conclusions can you draw about the nature of the participants in this game?
• How useful are these graphs? How could they be improved?
• Discuss the application of what they have learned to their own HIV program.
• Do the data you have access to provide answers to useful questions? What other data?
• Do they present these results in a graphical format?
• If so, are these graphs useful?
• If not, what would you like to see? How could you get access to such data?

• Ask your audience for feedback on whether this session met their objectives. Take notes of their impressions on a flip chart, and keep it for use in the future.
• Schedule an informal follow-up session with any audience members who need clarification or more information on the game or the concepts you discussed.
• Thank your audience and congratulate them on their hard work and success.

Feedback and Close

• Ask your audience for feedback on whether this session met their objectives. Take notes of their impressions on a flip chart, and keep it for use in the future.
• Schedule an informal follow-up session with any audience members who need clarification or more information on the game or the concepts you discussed.
• Thank your audience and congratulate them on their hard work and success.
Attachment 1

Who's Here? Team Instructions Sheet

• Work only within your group.
• Develop a single question that will be asked of each member of each team, including your own. The purpose of this question is to help your team determine how the other teams formed themselves.
  - The question must ask for information that can be displayed graphically — in a bar graph, line chart, histogram, pie chart or other graph or chart.
  - Use only your visual observation, the team names, and your existing knowledge of the people in the room in developing your question.
  - Do not ask a question that is too personal to be discussed in public.
  - Do not use the team names in your question.
• The purpose of your graphical presentation is to characterize how people decided to form groups “most like themselves.”

Sample questions:
• How tall are you in inches?
• How many miles do you drive to work each day?
• What department do you work for?
Peanut Butter and Jelly Game

Why Use This Game
• To teach that systems only work as well as they are designed.
• To teach the importance of error-proofing design.
• To show the importance of clearly documenting your process.

Target Audience
Senior staff, team members, and anyone else who will be involved in creating a new process or altering an existing process.

Type of Game
A demonstration with everyone participating.

Key Concepts
• Each system is perfectly designed to achieve the results it gets.
• Clear instructions to one person may not be clear instructions to another.
• Steps early in a process may have an unforeseen impact later in that process or system.

Source, History and Resources for More Information
Information about this game comes from Qualis Health, the QIO for Washington State, and its Performance Improvement Support Center.

Materials
For this game, you will need:
• Ingredients for a peanut butter and jelly sandwich (bread, peanut butter, jelly, knife)
• A pad of paper and pens for each team
• Flip chart and markers to record the key points of the discussion

Preparation
To prepare for this session:
• Familiarize yourself with the session's structure and content:
  - Read through the game instructions and key teaching points in their entirety.
  - Practice the game itself.
  - Practice presenting the key teaching points.
• Prepare the room:
  - Arrange chairs around a table or tables, set up to make it easy for the participants to work in small groups.
  - Set up a small desk or table in the front of the room and place the sandwich ingredients on the table.
  - Set up the flip chart so you can capture key points of the discussion after the game.

SESSION AT-A-GLANCE

<table>
<thead>
<tr>
<th>SESSION</th>
<th>WHAT</th>
<th>HOW LONG</th>
</tr>
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<tbody>
<tr>
<td>Introduction</td>
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</tr>
<tr>
<td>The Game</td>
<td>Facilitator Audience</td>
<td>25 minutes</td>
</tr>
<tr>
<td>Debrief and Discussion</td>
<td>Facilitator Audience</td>
<td>15 minutes</td>
</tr>
</tbody>
</table>

Peanut Butter and Jelly Game

Playing the Peanut Butter and Jelly Game

Welcome and Introductions
To begin the game, welcome participants and thank them for their participation. If necessary, ask individuals to introduce themselves to the group.

Learning Objectives
Tell participants that by the end of the session they will:
• Understand that systems and processes only work as well as they are designed.
• Understand what is involved in error-proofing a design.
• Appreciate the importance of clear documentation of process steps.

Agenda
Provide a brief description of the session's primary components:
1. Background to the Peanut Butter and Jelly Game
2. The game itself
3. Debrief and discussion on what the game shows, and how it relates to the session
4. Feedback and close

Background to the Game

Facilitator's note
“A system is defined as a collection of interdependent elements that interact to achieve a common purpose.” It is the interaction of systems that makes them tricky to manage—something that affects one part of a system may have an unforeseen impact on another part of the system. In thinking about making improvement, we have to understand that each system is perfectly set up to achieve the result it gets. If we want to change the results, we need to change the system. For example, the number of women getting gynecology consults will not improve unless you do something to change the links between the processes in your program and those in the gynecology service.

The purpose of the game is to teach the link between design and results, and to teach that decisions that make sense when taken in isolation (like how to put peanut butter and jelly on bread) can have an unforeseen impact on the result. As you play your role, work coaches or to the instructions on the game and “play up” the result. Participants will quickly grasp the relationship between clear documentation of the process and the resulting sandwich, but may need help from you to make the link to thinking about health care systems.

Key points to explain in your audience:
• Explain the definition of “process” and “system.” A process is a series of steps that turns an input into an output. A system is a group of processes with a common aim. A patient visit is a process. Treating HIV is a system.
• Mention that improving one process in a system may have an unforeseen impact on another process in the system. Most people will understand this readily if you have time, but some examples of this that you see participants have encountered.
• Explain that this game will help illustrate some of the interrelated components of processes and systems.
The Game Itself

- Divide the participants into small groups. Aim for 3 to 4 groups.
- Tell each group to prepare, write down and submit the process for making a peanut butter and jelly sandwich. 
- Reconvene as a large group. Tell the groups to demonstrate their process for making the sandwich. Follow their process exactly as written - (for example, if the instructions do not tell you to use the brand name brand of peanut butter, give them the brand name.)
- Ask the group: do we adopt, adapt or abandon this process? Discuss why.
- If time permits, try one round of adaptation of the instructions. 

Debrief and Discussion

- Review results.
- Ask the group to describe what happened:
  - Ask the group to describe the instructions that they followed.
  - Ask the group to share what they learned from the experience.
  - Ask the group to describe any changes they would make to the process.
  - Ask the group to describe any problems they encountered.
- Discuss the implications of what they have learned to their own work.
- What do you think of the process that was used to make the sandwich?
- What did you learn from the experience?
- What do you think of the process that was used to make the sandwich?
- Discuss the implications of what you have learned to your own work.
- What do you think of the process that was used to make the sandwich?
- What did you learn from the experience?
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- Discuss the implications of what you have learned to your own work.
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- What do you think of the process that was used to make the sandwich?
- What did you learn from the experience?
Playing the Butterfly Effect Game

Welcome and Introductions
To begin the game, welcome participants and thank them for their participation. If necessary, ask individuals to move closer to the group.

Learning Objectives
Tell participants that by the end of the session they will:
- Understand that systems are complex.
- Appreciate how the parts of a system are interrelated.
- Understand the importance of pilot-testing planned changes in a process or system.

Agenda
Provide a brief description of the session’s primary components:
1. Background to the Butterfly Effect Game.
2. The game itself.
3. Debrief and discussion on what the game shows, and how its lessons can be applied to HIV care.
4. Feedback and close.

Background to the Game
Facilitator’s note
“A system is defined as a collection of interdependent elements that interact to achieve a common purpose.” It is the interaction of systems that makes them tricky to manage – something that affects one part of a system may have an unforeseen impact later on another part of the system.

In many cases, people can understand this concept intuitively. Sometimes, however, it helps to demonstrate the concept in an unmistakable way. That is what this game is designed to do – the simple change of the facilitator taking one or two steps causes the whole design of people in the room to change. Making change can be powerful, but not always in easily predictable ways.

Key points to explain to your audience:
- Explain the definition of “process” and “systems.” A process is a series of steps that turns an input into an output. A system is a group of processes with a common aim. A patient visit is a process. Treating HIV is a system.
- Mention that making changes in one part of a system may have an unforeseen impact on another part of the system. Explain that this game will help illustrate this characteristic of systems in a visual way.

The Game Itself
- Ask all participants to stand in the center of the room.
- Tell each participant to choose two other people in the room, but keep the names of those two people to themselves.
- Tell participants that they must now stay equidistant between the two people they have chosen.
- As facilitator, move slowly through the room. Many of the participants will have chosen you as one of their people, and will need to move as you do. As the room moves, others will need to move, and the configuration of the room will keep changing.
- The facilitator may also move in stops and starts to clarify the effect.
- Keep up to speed and people should laugh as reactions increase.

Debrief and Discussion
- Possibilities for a large group and constructive results.
- Use this opportunity to discuss what happened.
- You can jump start the discussion by asking one person to identify their two chosen people, and to tell how and why they moved around. This works best if you can identify one of the people who chose you.
- Ask whether the movements of people in the room were a system, and ask participants to see that it was a system.
- Discuss the implications of what they have learned in their own HIV programs.
- What are the key components of their HIV care system?
- Which parts of the system affect other parts of the system? This could be a very rich discussion. Have participants to think about the carefully and to share their conclusions.

What has happened when changes have been made to their system? Did they “ripple through” the system? What other effects? Often, focusing on one part of the care process (improving PPD testing rates, for example) can pull attention from another part – other types of referrals, perhaps. Has this happened in your program?
- Could that “ripple” have been prevented? What might they do differently? This can be a great way to bring up the concept of PDCA: testing changes on a small scale can reveal other problems early.

Feedback and Close
- Ask your audience for feedback on whether this session met its objectives. Take note of their responses on a flip chart, and keep it for your use in the future.
- Schedule a follow-up session with any audience members who missed clarification or other information on the game or the concepts you discussed.
- Thank your audience and congratulate them on their hard work and success.
Win as Much as You Can Game

Why Use This Game
- To give teams experience in designing indicators and data collection methods.
- To show different ways of graphically displaying data.
- To start a discussion about data visualization, mean and range.

Target Audience
Senior staff, team members, and anyone else who will be involved in collecting and analyzing data. This game works best if it is part of an introduction to data display tools.

Type of Game
A competition among teams.

Key Concepts
- Data should give you the answers to useful questions.
- Displaying these data graphically makes them easier to understand.
- A good data tool will also tell you about the distribution of the data you collect.

Preparation
To prepare for this session:
- Familiarize yourself with the session’s structure and content:
  - Read through the game instructions and key teaching points in their entirety.
  - Practice the game itself.
  - Practice presenting the key teaching points.
- Prepare the room:
  - Arrange chairs around a table or tables, set up to make it easy for the participants to work in small groups.
  - Set up an additional flip chart in the front of the room so you can capture key points of the discussion after the game.

Playing the Win as Much As You Can Game

Welcome and Introductions
To begin the game, welcome participants and thank them for their participation. If necessary, ask individuals to introduce themselves to the group.

Learning Objectives
Tell participants that by the end of the session they will:
- Understand the relationship between collecting data and answering useful questions.
- Have experience creating data display tools.
- Have experience analyzing data displayed in graphs and charts.

Agenda
Provides a brief description of the session’s primary components:
1. Background to the Win as Much As You Can Game
2. The game itself
3. Debrief and discussion on what the game shows, and how its lessons can be applied to HIV care
4. Feedback and close.
Background to the Game

Facilitator’s note

The purpose of this game is to give participants experience in creating and using data displays. Unlike data display exercises that give you a dataset and ask you to graph it, this game requires each participating team to, first, create the “indicator” they will use (that is, the question they will ask of their fellow participants), then display the results graphically. This game illustrates the data collection and analysis process, rather than the mechanics of a particular tool.

Because we need to give the participants quick refreshers in creating and using pie charts, histograms, line graphs, etc., although most people in health care settings have some familiarity with these, the authors of the game point out that some teams may need help to structure a question that will give them data that can then be put in a graph.

The discussion at the end of the game can lead to concrete plans to make data more available in the clinic or program. Most programs have data reporting requirements and some collect additional data that interests the management or staff. Consider making a plan to graph and distribute dental referral rates, for example, if your program is not already doing so.

Key points to explain to your audience:

- Discuss the purpose of collecting data. Remind them that randomly collecting lots of numbers is useless. You want data that lead to information, that give you answers to your questions. Any good data collection activity should begin with the questions you want to answer.
- Review the basic data display tools:
  - Line graphs, showing data change over time.
  - Histograms (frequency distributions) or bar charts that show how many units have a particular characteristic.
  - Pie charts, that show the percentage of each contribution to the whole.
  - Scatter diagrams, that show the relationship of one variable to another.
- Review the concept of stratification: will we want to know if the answer to our question varies due to a specific element: day of the week, season of the year, age or sex of the participant, etc.? Talk about how teams should consider how to design their data collection strategy so these questions can be answered, if they are important.

Win as Much as You Can Game

PAYOFF SCHEDULE

- Lose $1.00 each
- Win $2.00 each
- Lose $2.00 each
- Win $3.00
- Lose $1.00 each
- Win $1.00 each

Confer with your partner in each round and make a joint decision and mark the scorecard accordingly. After each round, track the group’s choices and the payoff.

Attachment 1

Win As Much As You Can Tally Sheet

Instructions: For 6 consecutive rounds you and your partner will choose either an X or a Y, and each of the other partnerships in your group will make the same choice. The payoff for each round depends on the patterns of choices made by your group.

<table>
<thead>
<tr>
<th>PAYOFF SCHEDULE</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Xs</td>
</tr>
<tr>
<td>5 Xs</td>
</tr>
<tr>
<td>4 Xs</td>
</tr>
<tr>
<td>2 Xs</td>
</tr>
<tr>
<td>2 Ys</td>
</tr>
<tr>
<td>1 X</td>
</tr>
<tr>
<td>3 Ys</td>
</tr>
<tr>
<td>4 Ys</td>
</tr>
</tbody>
</table>

Confer with your partner on each round and make a joint decision and mark the scorecard accordingly. After each round, track the group’s choices and the payoff.

<table>
<thead>
<tr>
<th>ROUND</th>
<th>YOUR CHOICE</th>
<th>GROUP'S CHOICE</th>
<th>PAYOFF</th>
<th>BALANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>X</td>
<td>Y</td>
<td></td>
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<td>2</td>
<td>X</td>
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<td>6</td>
<td>X</td>
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</table>
The Game Itself

- Ask participants to divide up into groups of 2 to 6 people most like themselves and no more than 6 groups total. If asked what you mean by “most like themselves,” provide no more information.
- Give each group a copy of the instructions (Attachment 1).
- Each group gathers around the flip chart and gives itself a name, writing it on the flip chart.
- Each team composes a question it will ask each of the other participants to determine how the groups have been formed.
- After all teams have composed questions, instruct the participants to gather data from all the participants, including their own team. Teams should record each person’s name and his/her answer.
- Each team then creates a graphical display of their information.
- Teams then quickly present their findings and show their charts.
- The facilitator selects the winning team.

Debrief and Discussion

- Review results.
- Ask the teams to describe their work—how did each team decide on its questions?
- Look at the graphs and analyze the data more deeply:
  - What do the charts show about the make-up of the group of participants?
  - Can you read the data in a useful way?
  - What about the mean of the data and the range?
  - What can drawn can you draw about the nature of the participants in the game?
  - How useful are these graphs? How could they be improved?
- Discuss the application of what they have learned to their own HIV program:
  - Do the data they have access to provide answers to useful questions? Why or why not?
  - Do they get any data in graphical format?
  - If so, are these graphs useful?
  - If not, what would they like to see? How could they get these graphs?
- Discuss the application of what they have learned to their own HIV program:
  - Do the data they have access to provide answers to useful questions? Why or why not?
  - Do they get any data in graphical format?
  - If so, are these graphs useful?
  - If not, what would they like to see? How could they get these graphs?

Feedback and Close

- Ask your audience for feedback on whether this session met its objectives. Take notes on their responses on a flip chart and bring it to the next session.
- Schedule an informal follow-up session with any audience members who want clarification or more information on the game or the concepts discussed.
- Thank your audience and congratulate them on their hard work and success.

Games to Teach Skills in Developing Changes

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- Look at the graphs and analyze the data more deeply:
  - What do the charts show about the make-up of the group of participants?
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  - Do they get any data in graphical format?
  - If so, are these graphs useful?
  - If not, what would they like to see? How could they get these graphs?
Think Inside the Box Game

Why Use This Game

- To teach the importance of going beyond the most obvious results.
- To show that thinking creatively can be hard, but it can be done.
- To teach that teams working together can develop more creative solutions than individuals alone.

Target Audience

Senior staff, team members, and anyone else who will be involved in creating or adapting processes.

Type of Game

A competition among teams.

Key Concepts

- It is easy to get stuck in our thinking about any problem with which we are confronted. That’s because our minds are programmed to think in a logical, linear fashion.
- Getting “unstuck” in our thinking is not easy, but we can learn to be better at it.
- Working in teams is one way to help get unstuck.

Source, History and Resources for More Information

Information about this game comes from Qualis Health, the QIO for Washington State, and its Performance Improvement Support Center. For more information about creative thinking and quality improvement, see Plsek, Paul E., Creativity, Innovation and Quality, Milwaukee, ASQ Press, 1997.

Materials

For this game, you will need:

- A pad of paper and pens for each team (it helps to have pens of different colors for each team)
- Flip chart and markers to demonstrate the game and to record the key points of the discussion

Playing the Think Inside the Box Game

Welcome and Introductions

- To begin the game, welcome participants and thank them for their participation. If necessary, ask individuals to introduce themselves to the group.

Learning Objectives

Tell participants that by the end of the session they will:

- Understand that developing innovative solutions can be difficult.
- Understand what is involved in getting better at being innovative.
- Appreciate the importance of teamwork in promoting creativity.

Agenda

- Background of the Think Inside the Box Game
- The game itself
- Debrief and discussion on what the game shows, and how its lessons can be applied to HIV care
- Feedback and closing
Background to the Game

By definition:

Most people, most of the time, practice what creativity expert Edward de Bono calls “vertical thinking” - sequential, analytic reasoning based on established patterns of thought. This ability to build on what we already know makes humans able to handle situations of amazing complexity but because we are always building on these established patterns of thought, vertical thinking is not very good for designing innovative solutions to problems.

For example, most HIV clinics have problems with no-show rates. Almost every clinic that works on this problem decides to address it by making reminder calls: our minds are set in this vertical pattern that people don’t show for appointments because they forget, and this often masks our ability to address the problem more effectively.

To be better innovators we need to expand our ability to practice de Bono’s “lateral thinking” - where we can take an image from one setting and pair it with an image from a completely different setting to create a new tool (Paul Plsek points out that the Ziploc storage bag resulted from lateral thinking. It combines two entirely different concepts – food storage and fastening of clothes – into one new creative idea that was a leap forward in the keeping of leftovers).

This game helps to introduce the concepts of vertical and lateral thinking, by presenting a puzzle that looks simple on the surface but quickly gets much more difficult. Participants work on the puzzle in teams, helping each other to think more “lateral” and finally agree on the solution.

The Game Itself

• Divide the participants into teams. Aim for 3 or 4 teams.
• Tell each team to copy what you do as you:
  - Draw a square on the flip chart.
  - Divide it into 4 quadrants.
  - Divide each quadrant into 4 quadrants.
• Tell each team to work together to count the number of squares that result.

Think Inside the Box Game

1 box that is 4x4
4 boxes that are 3x3
9 boxes that are 2x2
16 boxes that are 1x1
Total = 30

How on Earth are there 30 Squares?

1 box that is 4x4
6 boxes that are 3x3
9 boxes that are 2x2
16 boxes that are 1x1
Total = 30

Attachment 1

How on Earth are there 30 Squares?
Debrief and Discussion

- Review results.
- Ask the team that is presenting to describe their team process:
  - How did they come to their solution?
  - How about bringing others on the team along?
- Ask your audience to describe their experiences and the ease or difficulty they had with the problem.
- Discuss the application of what they have learned to their own HIV program:
  - What problems keep coming up again and again in the program?
  - What solutions have they tried? How were these solutions innovative?
- How could they develop more creative solutions?
- You may want to suggest some answers here. Plsek’s book includes lots of tools to promote creative thinking capabilities. See the Reversals Game on pages 68-71 for one suggestion. But even something as simple as benchmarking from another industry can help promote lateral thinking.

Feedback and Close

- Ask your audience for feedback on whether the session met its objectives. Take notes on their responses on a flip chart, and keep it on your desk to refer to in the future.
- Schedule an informal follow-up session with any members who need clarification or more information on the game or the concepts you discussed.
- Thank your audience and encourage them in their hard work and success.

Sudoku Game

Why Use This Game

- To explain what a change concept is.
- To show how change concepts can be used.
- To help leaders understand why they need to provide change concepts to improvement teams.

Target Audience

Senior staff who are leading improvement efforts in their organizations.

Type of Game

A demonstration with everyone participating.

Key Concepts

- There is a growing body of information about the types of changes that will result in improvement in the delivery of health care services.
- From this information we can develop general notions or approaches to improvement – that is, change concepts – that can be very helpful to teams trying to make changes that result in improvement.
- It is leadership’s responsibility to provide these change concepts to teams.

Source, History and Resources for More Information


Materials

For this game, you will need:
- The Sudoku Puzzle, one copy for each participant (see Attachment 1)
- Flip chart and markers to record the key points of the discussion

Preparation

To prepare for this session:
- Familiarize yourself with the session’s structure and content:
  - Read through the game instructions and key teaching points in their entirety.
  - Practice the game itself.
  - Practice presenting the key teaching points.
- Prepare the room:
  - Arrange chairs around three tables. It is best if the tables are not too close to each other.
Playing the Sudoku Game

Background to the Game

The third question of The Improvement Model is “What change concept(s) can we make to work in this improvement?” The field of operations research has provided much information on how to answer this question for each process’s current bottlenecks. For example, one might always improve work flow. “Streamlining workflow” is therefore a change concept; what Langley and his colleagues call “a general notion or approach that has been found to be useful in developing specific ideas for change that could be implemented.” In most improvement work, teams play a dual role: conceptual change concepts are being developed. Using patient registries, for example, has become recognized as a change concept for chronic illness care. “Set and document self-management goals collaboratively with patients” is a change concept for HIV care.

In organizations committed to improvement, senior leaders recognize their role in identifying and providing change concepts that are then used by their improvement teams. The purpose of the game is to help senior leaders understand what change concepts are, and then to initiate a discussion among leaders about where to use change concepts.

At the beginning of the game provide a brief description of the game’s primary components:

1. Background to the Sudoku Game
2. The game rules
3. Debrief and discussion on what the game shows, and how its lessons can be applied to daily work
4. Feedback and close

Agenda

Provide a brief description of the session’s primary components:

1. Background to the Sudoku Game
2. The game rules
3. Debrief and discussion on what the game shows, and how its lessons can be applied to daily work
4. Feedback and close

Welcome and Introductions

To begin the game, welcome participants and thank them for their participation. If necessary, ask individuals to introduce themselves to the group.

Learning Objectives

Tell participants that by the end of the session they will:

• Appreciate senior leadership’s role in providing change concepts to improvement teams.
• Understand how change concepts can be used to improve workflow.
• Understand what a change concept is.

Tell participants that by the end of the session they will:

• Appreciate senior leadership’s role in providing change concepts to improvement teams.
• Understand how change concepts can be used to improve workflow.
• Understand what a change concept is.

Key points to explain to your audience:

• Introduce the idea of change concepts. Use the definitions and examples above. It can also be helpful to think up change concepts that would apply to recreational activities or hobbies. “Keep your eye on the ball” is a change concept that applies to most sports, for example.

• Explain that this game will help them see how change concepts can be used to improve daily work.

Debrief and Discussion

After another 15 minutes, call time.

7. Hand a note to one team member of Team 3. Try and remember the details. The note should read: “Read to do with starting with the 3 x 3 squares, but I can’t remember the details.”

8. After another 15 minutes, call time.

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Postgame notes

The third question of The Improvement Model is “What change concept(s) can we make to work in this improvement?” The field of operations research has provided much information on how to answer this question for each process’s current bottlenecks. For example, one might always improve work flow. “Streamlining workflow” is therefore a change concept; what Langley and his colleagues call “a general notion or approach that has been found to be useful in developing specific ideas for change that could be implemented.” In most improvement work, teams play a dual role: conceptual change concepts are being developed. Using patient registries, for example, has become recognized as a change concept for chronic illness care. “Set and document self-management goals collaboratively with patients” is a change concept for HIV care.

In organizations committed to improvement, senior leaders recognize their role in identifying and providing change concepts that are then used by their improvement teams. The purpose of the game is to help senior leaders understand what change concepts are, and then to initiate a discussion among leaders about where to use change concepts.

Key points to explain to your audience:

• Introduce the idea of change concepts. Use the definitions and examples above. It can also be helpful to think up change concepts that would apply to recreational activities or hobbies. “Keep your eye on the ball” is a change concept that applies to most sports, for example.

• Explain that this game will help them see how change concepts can be used to improve daily work.

Feedback and close

To begin the game, welcome participants and thank them for their participation. If necessary, ask individuals to introduce themselves to the group.

Learning Objectives

Tell participants that by the end of the session they will:

• Appreciate senior leadership’s role in providing change concepts to improvement teams.
• Understand how change concepts can be used to improve workflow.
• Understand what a change concept is.

Tell participants that by the end of the session they will:

• Appreciate senior leadership’s role in providing change concepts to improvement teams.
• Understand how change concepts can be used to improve workflow.
• Understand what a change concept is.
Egg Ship Game

Why Use This Game

• To help teams get used to working together.
• To give teams practice in problem-solving.
• To focus teams on the importance of meeting customer needs.

Target Audience

Teams members and others who will be developing and running PDSA cycles, or working on any sort of complex team project.

Type of Game

A competition among teams.

Key Concepts

• Keeping focused on customer needs helps teams solve problems more smoothly.
• Teams get better at working together over time.

Materials

For this game, you will need:

• For each team participating:
  - One raw egg (hard-boiled may be substituted to help with the clean-up if any breaks)
  - A roll of sticky tape
  - A handful of drinking straws
  - Marking pens
  - One copy of the Briefing Sheet (Attachment 1)
• A flip chart and markers to record the key points of the discussion
• A small ladder or step stool for the 10-foot test flight

Preparation

To prepare for this session:

• Familiarize yourself with the session’s structure and content:
  - Read through the game instructions and key teaching points in their entirety.
  - Practice the game itself.
  - Practice presenting the key teaching points.
• Prepare the room:
  - Remove tables; teams will need space to work.
  - Have the equipment ready to distribute to teams.
  - Set up the flip chart so you can give the instructions and record key points of the discussion after the game.

Source, History and Resources for More Information

This game comes from “101 More Training Games,” by Gary Kroehnert, McGraw-Hill Book Company, Australia, Sydney, copyright 1999 (pp. 28-29). Mr. Kroehnert includes permission to reproduce his games for educational purposes or training activities.
Playing the Egg Ship Game

Welcome and Introductions
To begin the game, welcome participants and thank them for their participation. If necessary, ask individuals to introduce themselves in the group.

Learning Objectives
Tell participants that by the end of the session they will:
• Know their teammates better.
• Know how they and their teammates work together to solve a problem.
• Have experience collaborating to deliver customer needs.

Agenda
Provide a brief description of the session's primary components:
1. Background to the Egg Ship Game.
2. The game itself.
3. Debrief and discussion on what the game shows, and how its lessons can be applied to HIV care.
4. Feedback and close.

Background to the Game
Facilitator's note
One of the first things people learn about quality improvement is that it is supposed to focus on the needs of the consumer. When an organization faces a decision point, it must consider what it wants to achieve in order to ensure that the needs of the consumer are met. The game is fun and lighthearted but contains important lessons. Take the time at the end to work through the discussion questions.

Key points to explain to your audience:
• If the participants have not been exposed to the concepts of customer and customer needs, spend some time discussing these with them. Some in health care can be uncomfortable with the commercial connotation of “customer” – stress that for us, customer is designed as the person who receives and uses the service or product you produce.
• Acknowledge that this is a difficult task and encourage participants to help each other and be creative.
• Make sure everyone understands the goal: to create a spacecraft suitable for the successful transportation of eggs.

The Game Itself
• Divide the participants into teams of 5-7 people each.
• Tell the groups that they represent companies that produce various spacecraft. These companies will be competing for a lucrative contract to construct a particular type of craft.
• Each group then starts the task of designing, constructing, and evaluating a spacecraft suitable for the transportation of raw eggs. Give each team 45 minutes to design and construct their Egg Ship using the materials supplied.
• At the end of this time, begin the two-part evaluation. Each evaluation consists of a test flight, one from 4 feet and the other from 10 feet. Should the eggs break during either test flight, the company will be sued for damages.
• Conduct the first part of the evaluation by holding the Egg Ship 4 feet above ground level and dropping them to the floor. The egg must not break.
• Egg Ships that survive the 4 foot test move on to the second part. Hold each Egg Ship 10 feet above the floor and drop it. Again, the egg must not break.

Debrief and Discussion
• Review results. Identify the teams that successfully completed both parts of the evaluation.
• Ask the teams about how they did their work?
• Did they approach the task? Did they break down the work?
• How about brainstorming on the teams along? Add your own observations.
• Did any group ask the customer for more specific details, such as the required color, placement of a company logo, etc? Why or why not?
• Did any group get the customer involved in the process?
• Discuss the potential application of what they have learned to their own HIV program.
• How did you involve customers in your problem solving?
• Does your use of teamwork help or hinder your problem solving?
• What might you do differently to improve?

Feedback and Close
• Ask your audience for feedback on whether this session met its objectives. Take notes of their responses and use it to improve future sessions.
• Schedule an informal follow-up session with any audience member who wants clarification or more information on the game or the concepts discussed.
• Thank your audience and congratulate them on their hard work and success.
Your team represents a company that designs, builds and flies custom-built spacecraft. You will be competing for a lucrative contract to design and construct Egg Ships for the next decade.

For this exercise you will have 45 minutes to design your Egg Ship. On completion of the design and construction your Egg Ship will be evaluated and put through two separate test flights. Should the egg break during either test flight the company will be sued for damages.

The first test flight will be from the height of 4 feet. The Egg Ship must be held 4 feet above ground level and dropped to the floor. The egg must not break during this flight.

The second test flight will be a 10-foot flight. The Egg Ship will be located 10 feet above ground level and dropped to the floor. Again, the egg must not break.

All of the raw material (pun definitely intended) will be distributed by your customer.

Good luck!

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Reversals Game

Why Use This Game

• To teach groups a tool they can use to help them generate innovative ideas about how to solve a problem.
• To help groups understand how to “un-stick” their thinking.

Target Audience

Team members and others who will be involved in creating a new process or altering an existing process.

Type of Game

A demonstration with everyone participating. The game works best with a group of no more than 8-10 people.

Key Concepts

• It is easy to get stuck in our thinking about any problem with which we are confronted. That’s because our minds are programmed to think in a logical, linear fashion.
• Getting “unstuck” in our thinking is not easy, but we can learn to be better at it.
• Specific tools exist to help us get unstuck.

Source, History and Resources for More Information


Materials

For this game, you will need:
• Flip chart and markers to record the key points of the discussion.
• Paper and markers to record the key points of the discussion.

Preparation

To prepare for this session:
• Familiarize yourself with the session’s structure and content:
  • Read through the game instructions and key teaching points in their entirety.
  • Practice the game itself.
  • Practice presenting the key teaching points.
• Prepare the room:
  • Arrange chairs in a circle or U-shape.
  • Set up the flip chart so you can:
    • Record the results of the game.
    • Capture key points of the discussion after the game.
Playing the Reversals Game

To begin the game, welcome participants and thank them for their participation. If necessary, ask individuals to introduce themselves to the group.

Learning Objectives
Tell participants that by the end of the session they will:
• Realize that they need consciously to break out of their established ways of thinking about problems.
• Know how to use a tool to help do this.
• Have experience applying the tool in HIV care.

Agenda
Provide a brief description of the session’s primary components:
1. Background to the Reversals Game
2. The game itself
3. Debrief and discussion on what the game shows, and how to use it can be applied in HIV care
4. Feedback and close

Background to the Game

Facilitator’s note
As we discussed in our introduction to the “Think Inside the Box” Game, most people, most of the time, practice what creativity expert Edward de Bono calls “vertical thinking” – sequential, analytic reasoning based on established patterns of thought. This ability to build on what we already know makes humans able to handle situations of amazing complexity; because we are always building on these established patterns of thought, however, vertical thinking is not very good for designing innovative solutions to problems. Innovation requires more skill with lateral thinking, a technique that can be learned. (See the Facilitator’s note for the “Think Inside the Box” Game for more information).

A number of tools have been developed to help people practice and become better at lateral thinking. Many of these are designed to help us escape from the way we usually think of things by forcing us to think patterns to get to a different direction. One commonly-used tool is called a “reversal” – you take something, and then ask what would it look like if the opposite of that situation existed. For example, what would it look like of our patients were responsible for improving our health? What would it look like if we wanted to raise costs and decrease client satisfaction? When presented with questions like this, people laugh and come up with silly answers. Often, these silly answers contain a germ of an idea that can lead to a truly innovative approach to an existing problem.

This game teaches the reversal tool by applying it to a general situation – how activity can serve as an introduction to a hands-on application of the tool in our own HIV program. Use the game to get people warmed up, relaxed, and comfortable with the tool. In the debriefing session, instead of discussing what happened during the game, use the tool and the group to develop possible solutions to your own program, perhaps to work on that intractable problem that you can’t seem to fix.

As the facilitator, you should introduce the concepts (below) and explain the reversals tool. Get the participants to brainstorm rapidly for a few minutes about what this “absurd” situation would look like. Make this discussion as free-wheeling as you can: silly ideas are likely to be the ones with the most potential. Capture the ideas on the flip chart as they come up. After 5 or 10 minutes, review the list and guide the group in “harvesting” – seeing in the silly ideas core concepts that might actually be adapted and put to use. The harvesting will be more difficult in the abstract game and easier with the real-life situation.

The Game Itself

Key points to explain to your audience:
• Introduce, if you have not already, the concepts of vertical thinking – our logical way we usually approach problems, and lateral thinking – what we do when we are being creative.
• Explain that this game demonstrates a tool that can help promote lateral thinking. Describe the tool.
• Tell participants that “anything goes” at the beginning, and encourage absurd suggestions. Do not mention that you’ll get serious after a bit and move on to the suggestions for developing solutions to actually try.

Tell the group that you are going to work on the problem of (choose one from the following list, or make up your own):
- Global warming
- Childhood obesity
- The unappealing quality of local take-out pizza

Present the reversal: what would it look like if:
- Our goal was to melt more of the polar ice cap, more quickly?
- We wanted to get children to eat more junk food and exercise less?
- We wanted to get local pizza shops to increase the greasiness of their products?

Encourage brainstorming – no criticism – and outrageous ideas. Capture them on the flip chart.

After a few minutes, stop and review the list. Tell the group it’s time to move on to reality. Go through the ideas and look for any that might actually be useful, or contain a useful concept. Have the group expand on an idea that has promise for fixing the problem.
Debrief and Discussion

- Work together and apply the tool to your HIV program:
  - What problem keeps coming up again and again in the program? (Referrals to other programs: ophthalmology, gynecology, dental, often are perennial problems.)
  - What solutions have they tried? Have any of these truly been innovative?
  - What would be a good "reverse" of this problem? (The opposite of developing a referral to dental rather than how to reduce the problem, done in reverse. "What if we mandated patients to keep their appointments?"")
  - Brainstorm answers to the reversed question.
  - Stop after 10 minutes and "harvest" the ideas for concepts that could lead to suggestions you might try.
  - Make a plan to do a pilot test of one or more suggestions.

Feedback and Close

- Ask your audience for feedback on whether the session met its objectives. Take note of their responses on a flip chart, and keep it for your use in the future.
- Schedule an informal follow-up session with any audience members who need clarification or more information on the game or the concepts you discussed.
- Thank your audience and congratulate them on their hard work and success.

Games to Teach Skills in Testing and Making Changes
Peg Game

Why Use This Game

• To teach how to develop and test a hypothesis.
• To teach that multiple cycles of hypothesis development and testing are part of successful problem solving.
• To teach how to develop better knowledge as you go through these multiple cycles.

Target Audience

Team members and others who will be developing and using PDSA cycles. Some teachers find the game works best with senior staff, others have found it successful for all participants.

Type of Game

A competition among teams.

Key Concepts

• Developing theories is essential to learning and improvement.
• "Tests of change" need to be planned and carefully evaluated.
• Data collection and documentation are important.

Preparation

To prepare for this session:

• Familiarize yourself with the session’s structure and content:
  - Read through the game instructions and key teaching points in their entirety.
  - Practice the game itself (see Attachment 6 for the answer key.)
  - Practice presenting the key teaching points.
• Prepare the room:
  - Arrange chairs around a table or tables. A U-shaped table works well.
  - Set up a small desk, table or podium in the front of the room.
  - Set up the equipment (e.g., flip chart and overhead projector or LCD projector) you will use to introduce the game and record the results. Test the equipment to make sure it works.
• Prepare the flip chart or overhead transparency with the "Team Results Summary" (Attachment 3.)

Playing the Peg Game

Welcome and Introductions

To begin the game, welcome participants and thank them for their participation. If necessary, ask individuals to introduce themselves to the group.

Learning Objectives

Tell participants that by the end of the session they will:

• Know how to develop theories of change and how to design tests of these theories.
• Understand how to use the results of these tests to design new tests that reflect what they have learned.
• Appreciate the role that ongoing data collection and documentation play in carrying out PDSA cycles.
• Begin to see how to apply these concepts to their HIV program.

Agenda

Provide a brief description of the session’s primary components:

1. Background to the Peg Game.
2. The Game itself.
3. Debrief and discussion on what the game shows, and how its lessons can be applied to HIV care.
4. Feedback from Three...
Background to the Game

Facilitator's note:
As teams work to make improvements in their HIV programs, they should be thinking “no, this change will make things better because it will...”. If they do this, teams will have a way to assess whether the change was successful. Thinking about why a change might work involves developing a theory, and many are often blind to this. Be sure to make sure teams keep reminding them of the real point of the game unless you keep reminding them.

The challenge in running this game is to make sure your teams develop hypotheses before each cycle. Participants may get excited about trying to find the solution and miss the real point of the game unless you keep reminding them. Make sure you are using the scorecards, and help them to see it.

Key points to explain to your audience:
- Describe the components of a PDSA cycle. Use (and project) Attachment 4 to help you. Reinforce the importance of thoughtful planning before each test and careful measurement of the results. Randomized trials.
- Review what is meant by “plan,” “do,” “study,” and “act.” Use (and project) Attachment 2 to help you. Reinforce that the purpose of the game is to teach how to run a PDSA cycle.
- Ask participants how the “same theory” with different plans and results caused different outcomes. Discuss why.
- Ask participants where might they use PDSA in their current work.
- Ask participants how the PDSA approach differed from their current work.
- Ask participants about improvements they have tried to make in order to improve PDSA cycles.
- Ask participants whether they think using PDSA cycles would have made their efforts more successful.
- Ask participants whether they use PDSA in their current work.

The Game Itself

(The description is adapted from the manual for the Institute for Healthcare Improvement’s Breakthrough Series College.)

1. Give each person a game board (Attachment 1) and markers. Each person completes his game.
2. Each participant covers each number on the game board with a marker, leaving one number blank.
3. Each participant writes a theory and plan to the others. The doctor writes the “best” approach and then team repeats as a group.
4. Tally results. Reconvene as a large group. Review results.
5. Each team then completes a full PDSA cycle. Discuss/Reinforce Attachment 2 and make sure each team records in the approach and a plan for recording what was done (you may provide a hint to the groups that they should record both before and after, e.g., 6, 4, 6).
6. Each team completes a second cycle (you can repeat the same as it is the “same theory” with different plans and results caused different outcomes. Discuss why.
7. Complete additional cycles as time permits.
8. Record each team’s best result on the flip chart or overhead. (depending on the size of your group).
9. Reconvene as a large group. Review results.

Debrief and Discussion

Reconvene as large group. Review results.
• Ask the room which has results or theories that are the same theory and plans to the others.
• Discuss, work through diamon (Attachment G).
• Ask participants how the PDSA approach differed from their current approach to the problem. Discuss what value using PDSA might be.
• Ask participants about improvements they have tried to make in order to improve PDSA cycles.
• Ask participants whether they think using PDSA cycles would have made their efforts more successful.
• Ask participants whether they use PDSA in their current work.

Feedback and Close

• Ask your audience for feedback on whether this session met your expectations. Take notes of their responses as a flip chart, and keep it by your seat to use in the future.
• Schedule an informal follow-up session with any audience member who wants clarification or more information on the game or the concepts you discussed.
• Thank your audience and congratulate them on their hard work and success.
Attachment 1

Trig Game: The Game Board

Attachment 2

Score Sheet: Theories and Results

<table>
<thead>
<tr>
<th>CYCLE</th>
<th>THEORY TESTED</th>
<th>PLAN</th>
<th>RESULT</th>
</tr>
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<tbody>
<tr>
<td>1</td>
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<tr>
<td>6</td>
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Attachment 3

Team Results Summary

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<thead>
<tr>
<th>TEAM</th>
<th>NUMBER OF CYCLES</th>
<th>BEST RESULT</th>
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</thead>
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<tr>
<td>9</td>
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</tbody>
</table>

Attachment 4

PDSA for the Peg Game

STEP 1: PLAN
Objective: Test another approach. Predictions: Will we leave fewer pegs?
What, When, Where, Speech notes.

STEP 2: DO
Carry out the plan. Record moves.

STEP 3: STUDY
Compare data vs. predictions. Summarize what was learned. Update the team's theory (approach).

STEP 4: ACT
Does our approach leave 1 peg? What new ideas should we test on the next cycle?
Attachment 5
To Be Considered a PDSA Cycle

**To Be Considered a PDSA Cycle:**

- The test or observation was planned (including a plan for collecting data).
- The plan was attempted.
- Time was set aside to analyze the data and study the results.
- Actions were rationally based on what was learned.

Attachment 5

**Peg Game Answer Key**

1. Leave F 6 blank.

2. Complete the sequence of jumps in this order:
   - 1 \(\rightarrow\) 6
   - 10 \(\rightarrow\) 3
   - 13 \(\rightarrow\) 6
   - 3 \(\rightarrow\) 10
   - 2 \(\rightarrow\) 9
   - 15 \(\rightarrow\) 6
   - 11 \(\rightarrow\) 13
   - 14 \(\rightarrow\) 12
   - 6 \(\rightarrow\) 13
   - 12 \(\rightarrow\) 5
   - 7 \(\rightarrow\) 2
   - 2 \(\rightarrow\) 9
   - 3 \(\rightarrow\) 6
**SESSION AT-A-GLANCE**

<table>
<thead>
<tr>
<th>STEP</th>
<th>DESCRIPTIVE</th>
<th>DURATION</th>
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<tr>
<td>Introduction</td>
<td>Facilitator</td>
<td>10 minutes</td>
</tr>
<tr>
<td>The Game</td>
<td>Facilitator, audience</td>
<td>20 minutes</td>
</tr>
<tr>
<td>Debrief and Discussion</td>
<td>Facilitator, audience</td>
<td>15 minutes</td>
</tr>
</tbody>
</table>

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**Tennis Ball Game**

**Why Use This Game**

- To teach how to approach improving a process.
- To teach how to build on knowledge gained from one test to design a new test.
- To teach how multiple testing cycles lead to improvement.
- To teach the concept of “breakthrough” improvement.

**Target Audience**

Team members and others who will be developing and running PDSA cycles.

**Type of Game**

A competition among teams.

**Key Concepts**

- Processes can be improved by changing the steps that constitute them.
- The results of one test can help a team identify additional changes to make.
- More tests lead to more knowledge about a process, and to better improvements.
- Setting “stretch goals” can push teams to make substantial improvements.

**Source, History and Resources for More Information**

This game is used at the Institute for Healthcare Improvement’s Breakthrough Series College and has been used by a number of improvement collaboratives. Additional information about the game comes from Qualis Health, the QIO for Washington State, and its Performance Improvement Support Center.

**Materials**

- A tennis ball or bean bag for each team
- A way of timing how long it takes each team to complete their process: a stopwatch or a clock with a second hand
- A flip chart and markers to record the results of the discussion

---

**Background to the Game**

Excellence in Care

This game is a simple introduction to the concept of PDSA done in a big way. The many steps here work improvement teams are in a “breakthrough” mode of thinking. As this game is very physical, it is also useful right after lunch when participants energy is lagging.

This game illustrates the “accelerating improvement” component of PDSA, as shown in the diagram in Attachment I. The idea is that hunches and ideas, when tested, lead to new knowledge that leads to improved processes. Each testing cycle adds more knowledge, and many cycles lead to real improvements.

If your audience is not familiar with the idea of improving quality by improving processes, this game can help introduce this concept. Walking through the steps of a standard patient’s visit. Discuss what can complicate each step and how each complication can affect the quality of care you provide.

**Preparation**

To prepare for this session:

- Familiarize yourself with the session’s structure and content:
  - Read through the game instructions and key teaching points in their entirety.
  - Practice the game itself.
  - Practice presenting the key teaching points.

---

**Playing the Tennis Ball Game**

Welcome and introductions

To begin the game welcome participants and thank them for their participation. If necessary, ask individuals to introduce themselves to the group.

Learning Objectives

- Tell participants that by the end of the session they will:
  - Know how to design changes to a process.
  - Know how to test those changes and build on them to design subsequent changes.
  - Appreciate how having a clear, ambitious goal can energize a team to make improvements.

Agenda

Provide a brief description of the session’s primary components:

1. Background to the Tennis Ball Game
2. The Game itself
3. Debrief and discussion on what the game showed, and how to look at care can be applied in day-to-day care
4. Feedback and close
Key points to explain to your audience:

• Describe the components of a PDSA cycle. The attachments to the Peg Game, also in this guide, can be adapted to help in explaining PDSA.

• Stress the idea that many PDSA cycles will accelerate the rate of improvement. Use the diagram in Attachment 1 to illustrate this concept. One key point to stress is that each PDSA cycle creates new knowledge about the process, so focusing on running many cycles—carefully but inexpensively—will increase what you are able to learn about your process and the improvements you plan.

The Game Itself

1. If they haven’t already, ask participants to form groups of 6-7 people. One person becomes the quality officer, the others will represent steps in the patient visit process.

2. The people representing the steps in the patient visit process stand in a circle or sit around a circular table. The quality officer stands outside the circle but is able to see the process.

3. Begin the design of the patient visit process. One person in the process passes the tennis ball to the person across from him/her (remembering to whom you threw it). Then the second person in each process, remembering who each time. This last person passes it to the person that started.

4. Instruct the quality officer to make sure:
   - no one drops the ball.
   - the sequence of steps (i.e., people) is the same on each patient visit.
   - the ball starts and ends with the same person.

5. The quality officer records the time from the start to the end of the process.

6. Practice once to establish the order of the steps.

7. Carry out the process twice. The team must start over if anyone drops the ball or missteps the order of the steps.

8. Complete a PDSA cycle to test some ideas to improve the visit time of the process.

   • Plan: Decide what change to make. Why do you predict this change will result in a shorter time? Who will make the change, when and how?

   • Do: Execute the Plan—run the process with the changes in place. Check how effective the change was.

   • Study: Document what you learned from this test. Be prepared to share your data with other teams.

   • Act: Make a decision about the change. What did you learn about the PDSA cycle?

9. The facilitator can at this point ask each team to share its best time. Review results.

10. Run at least one more PDSA cycle. If you have time, run several.

Debrief and Discussion

Reconvene as a large group. Review results.

• Ask participants how they improved. Did their times get better? How about from the second to third cycles? Did the second round of improvements build on the first?

• If you used the optional Step 9, explain why you did so. Explain benchmarking and breakthrough improvement.

• Ask about the impact your comment had on their teams’ work and its results.

• If you want to try some benchmarking yourself the NQC website at NationalQualityCenter.org has information about improvements other programs have made in their HIV care.

• Ask participants about improvements they have tried to make in their HIV care.

• Ask participants about improvements they have tried to make in their HIV care.

• Ask participants how improvements they have tried to make in their HIV programs:
   - Did they use a PDSA approach?
   - How did it work? How might they have used PDSA more effectively?

• Ask participants when might they use PDSA in their current work.

Feedback and Close

• Ask your audience for feedback on whether this session met its objectives. Take note of their responses on a flip chart, and keep it for use as you reflect.

• Schedule an informal follow-up session with any audience member who wants clarification or more information on the game or the concepts just discussed.

• Thank your audience and congratulate them on their hard work and success.
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Building Knowledge


Attachment 1

Accelerating Improvement Diagram

Changes that result in improvement

APSD

APSD

APSD

APSD

Hunches

Theories

Ideas

SESSION AT-A-GLANCE

<table>
<thead>
<tr>
<th>SESSION AT-A-GLANCE</th>
<th>WHAT?</th>
<th>KEY LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>Facilitate</td>
<td>10 minutes</td>
</tr>
<tr>
<td>The Game</td>
<td>Facilitate, audience</td>
<td>25 minutes</td>
</tr>
<tr>
<td>Debrief and Discussion</td>
<td>Facilitate, audience</td>
<td>25 minutes</td>
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</tbody>
</table>

The Zin Obelisk Game

Why Use This Game

- To teach how to work as a team to develop hypotheses, test solutions and solve problems.
- To show how to develop better knowledge as you go through multiple cycles of hypothesis development and testing.
- To help teams understand leadership, communication and conflict issues in team problem solving.

Target Audience

Team members and leaders who will be developing and running PDSA cycles, as well as organizational leaders who will be overseeing and evaluating the work of these teams.

Type of Game

A competition among teams.

Key Concepts

- Teams need to be able to share information and listen to each other in order to work well.
- In trying to solve a complex problem, some structure is helpful. The approach of developing and testing a hypothesis (in scientific method) can provide this structure.
- Each team will have its own strengths, weaknesses and conflicts. As teams work together, they will learn how to manage these unique traits.

Source, History and Resources for More Information


Materials

For this game, you will need:
- A copy of the Zin Obelisk Group Instruction Sheet (Attachment 1) for each participant
- Blank paper and a pencil for each participant
- A set of Zin Obelisk Information Cards for each group (thirty three cards per set—see Attachment 2 for the text of the cards)
- A copy of the Zin Obelisk Review Sheet (Attachment 3) for the Facilitator
Background to the Game

Preparation

To prepare for this session:
- Familiarize yourself with the scenario's introduction and context.
- Read through the game instructions and key marking points in their entirety.
- Practice the game itself.
- Practice walking through the key marking points.

• Prepare the room:
  - Set up circles of chairs for each team that will participate in the game.
  - Set up a flip chart so you can capture key points of the discussion after the game.

Playing the Zin Obelisk Game

Welcome and Introductions

To begin the game, welcome participants and thank them for their participation. If necessary, ask individuals to introduce themselves to the group.

Learning Objectives

Tell participants that by the end of the session they will:
- Understand the structure and mechanics of their team as it works to solve a difficult problem.
- See how to apply the scientific method: developing and testing a hypothesis; to their problem-solving approach.
- Begin to develop strategies for better listening and cooperation within their team.
- See how to apply these concepts to their HIV programs.

Agenda

Provide a brief description of the session's primary components:
1. Background to the Zin Obelisk Game.
2. The game itself.
3. Debrief and discussion on what the game shows, and how its lessons can be applied to HIV care.
4. Feedback and close.

The Game Itself

- Divide your group into teams of 5 to 8 participants.
- Distribute to each team member a copy of the Zin Obelisk Information Cards and a pencil.
- Familiarize yourself with the session's structure and content:
  - Set up the flip chart so you can capture key points of the discussion after the game.

Playing the Zin Obelisk Game

Welcome and Introductions

To begin the game, welcome participants and thank them for their participation. If necessary, ask individuals to introduce themselves to the group.

Learning Objectives

Tell participants that by the end of the session they will:
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Agenda

Provide a brief description of the session's primary components:
1. Background to the Zin Obelisk Game.
2. The game itself.
3. Debrief and discussion on what the game shows, and how its lessons can be applied to HIV care.
4. Feedback and close.

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- Distribute to each team member a copy of the Zin Obelisk Information Cards and a pencil.
- Familiarize yourself with the session's structure and content:
  - Set up the flip chart so you can capture key points of the discussion after the game.

Playing the Zin Obelisk Game

Welcome and Introductions

To begin the game, welcome participants and thank them for their participation. If necessary, ask individuals to introduce themselves to the group.

Learning Objectives

Tell participants that by the end of the session they will:
- Understand the structure and mechanics of their team as it works to solve a difficult problem.
- See how to apply the scientific method: developing and testing a hypothesis; to their problem-solving approach.
- Begin to develop strategies for better listening and cooperation within their team.
- See how to apply these concepts to their HIV programs.

Agenda

Provide a brief description of the session's primary components:
1. Background to the Zin Obelisk Game.
2. The game itself.
3. Debrief and discussion on what the game shows, and how its lessons can be applied to HIV care.
4. Feedback and close.

The Game Itself

- Divide your group into teams of 5 to 8 participants.
- Distribute to each team member a copy of the Zin Obelisk Information Cards and a pencil.
- Familiarize yourself with the session's structure and content:
  - Set up the flip chart so you can capture key points of the discussion after the game.

Playing the Zin Obelisk Game

Welcome and Introductions

To begin the game, welcome participants and thank them for their participation. If necessary, ask individuals to introduce themselves to the group.

Learning Objectives

Tell participants that by the end of the session they will:
- Understand the structure and mechanics of their team as it works to solve a difficult problem.
- See how to apply the scientific method: developing and testing a hypothesis; to their problem-solving approach.
- Begin to develop strategies for better listening and cooperation within their team.
- See how to apply these concepts to their HIV programs.

Agenda

Provide a brief description of the session's primary components:
1. Background to the Zin Obelisk Game.
2. The game itself.
3. Debrief and discussion on what the game shows, and how its lessons can be applied to HIV care.
4. Feedback and close.
In the ancient city of Atlantis, a solid, rectangular obelisk, called a zin, was built in honor of the goddess Tina. The structure took less than two weeks to complete.

The task of your team is to determine on which day of the week the obelisk was completed. You have twenty-five minutes for this task. Do not choose a formal leader.

You will be given cards containing information related to the task. You may share this information orally, but you may not show your cards to other participants.

Make a set of thirty-three cards by typing each of the following sentences on a 3"x5" index card:

1. The basic measurement of time in Atlantis is a day.
2. An Atlantian day is divided into schlibs and ponks.
3. The length of the zin is 50 feet.
4. The height of the zin is 100 feet.
5. The width of the zin is 10 feet.
6. The zin is made of stone blocks.
7. Each block is 1 cubic foot.
8. Day 1 in the Atlantian week is called Aguaday.
9. Day 2 in the Atlantian week is called Neptiminus.
10. Day 3 in the Atlantian week is called Sharkday.
11. Day 4 in the Atlantian week is called Mermaidday.
12. Day 5 in the Atlantian week is called Daydoldrum.
13. There are five days in an Atlantian week.
14. Ther working day has 9 schlibs.
15. Each worker takes rest periods during the working day totaling 16 ponks.
16. There are 8 ponks in a schlib.
17. Each worker lays 150 blocks per schlib.
18. At any time when work is taking place there is a gang of 9 people on site.
19. One member of each gang has religious duties and does not lay blocks.
20. No work takes place on Daydoldrum.
21. What is a cubitt?
22. A cubitt is a cube, all sides of which measure 1 megalithic yard.
23. There are 3 1/2 feet in a megalithic yard.
24. Does work take place on Sunday?
25. What is a zin?
26. Which way up does the zin stand?
27. The zin is made up of green blocks.
28. Green has special religious significance on Mermaidday.
29. Each gang includes two women.
30. Work starts at daybreak on Aguaday.
31. Only one gang is working on the construction of the zin.
32. There are eight gold scales in a gold fin.
33. Each block costs 2 gold fins.
The answer is Neptiminus.

Rationale:
1. The dimensions of the atr indicate that it contains 50,000 cubic feet of stone blocks.
2. Each block is 1 cubic foot; therefore 50,000 blocks are required.
3. Each worker works 7 schlibs in a day (2 schlibs are devoted to rest).
4. Each worker lays 150 blocks per schlib, therefore each worker lays 1,050 blocks per day.
5. There are 8 workers per day, therefore 8,400 blocks are laid per working day.
6. The 50,000th block would then be laid on the sixth working day.
7. Since work does not take place on Dredolution, the sixth working day is Neptiminus.

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### Paper Airplane Game

**Why Use This Game**

- To show how incremental change can, when repeated and expanded over time, lead to improvements.
- To teach the importance of planning cycles of change and building on the knowledge learned in the previous cycles.
- To show how to develop better knowledge as you go through these multiple cycles.

**Target Audience**

Team members and others who will be developing and running PDSA cycles. Also, leaders who will be overseeing these teams, to help them understand the concept of small-cycle tests of change.

**Type of Game**

A competition among teams.

**Key Concepts**

- Great changes start small.
- Base your next change on what you learned from its predecessor, whether in a real or simulated cycle, and the impact of your change—will you correct your mistake?
- Improvement comes from repeating these cycles over time.

**Source, History and Resources for More Information**

Information about this game comes from Qualis Health, the QIO for Washington State, and its Performance Improvement Support Centers.

**Materials**

- For this game, you will need:
  - Five tables, one labeled “plan,” one “do,” one “study,” one “act,” one “act”
  - Space for people to try to fly their airplanes
  - Materials to make paper airplanes—stacks of construction paper, clips, scissors, glue
  - A yardstick or long tape measure for each team
  - A small prize for the winning team
Preparation

To prepare for this session:

- Familiarize yourself with the session's primary components.
- Review the game instructions and key teaching points for your audience.
- Practice the game itself (including different airplane-making strategies).
- Practice presenting the key teaching points.

Key points to explain to your audience:

- Stress that using PDSA cycles means starting small. That is why you have four stations, one at which teams "plan" their airplanes, one at which they "do" the test flight (make sure you have plenty of space to fly the airplanes), one at which they "study" their results, and one at which they "fly the airplanes that will fly the farthest.
- Explain then that the second cycle builds on the first and is repeated as necessary. Ask participants where they might use small cycle tests in their HIV programs. They need to become comfortable with the idea of starting out with a small-scale pilot test of change that they will build upon, and enlarge, over time.

As teams work to make improvements in their HIV programs, they need to become comfortable with the idea of starting out with a small-scale pilot test of change that they will build upon, and enlarge, over time.

Debrief and Discussion

Reconvene as a large group. Review results:

- Ask this question: "Did you make adjustments to your airplane designs? What did those changes from each test cycle achieve? How did you change the airplane each time?"
- Did they have a process? Ask other teams to describe their approach. Did they think it was a small approach to improvement work? Why or why not?
- Ask participants about improvements they have tried to make in their HIV programs. Did they start with a small test of change? Why or why not? How might they have used PDSA cycles even more effectively? If not, do they think using PDSA cycles would have made the effort more successful? Why or why not?
- Ask participants whose airplane was the longest distance. If so, did it work? How might they have used PDSA cycles even more effectively? If not, do they think using PDSA cycles would have made the effort more successful? Why or why not? If not, do they think using PDSA cycles would have made the effort more successful? Why or why not?
- Ask participants whose airplane was the fastest? Why or why not? How might they have used PDSA cycles even more effectively? If not, do they think using PDSA cycles would have made the effort more successful? Why or why not?
Playing the Selling Spread Game

Welcome and Introduction
To begin the game, welcome participants and thank them for their participation. It may be necessary to introduce themselves to the group.

Learning Objective
Tell participants that by the end of the session they will:
• Have a sense of how to present a change so more people will adopt it.
• Understand some of the challenges in implementing a change.
• Be able to introduce each attribute as follows:
  1. Relative advantage of the proposed change: “the degree to which an innovation is perceived as better than the older or present alternative.”
  2. Compatibility with the current system: “the degree to which an innovation is perceived as relatively difficult, simple, or easy to understand and use.”
  3. Observability: “the degree to which the results of an innovation are visible to others.”
  4. Trialability/Testability: “the degree to which an innovation is perceived as being better than or similar to an old idea it supersedes.”
  5. “Testability” of the change.
• Ability to observe the change and its impact.

Source, History, and Resources for More Information
Sarah Fraser, a scholar on spreading good practices in health care, led the demonstration at a learning session sponsored by the Institute for Healthcare Improvement, which made the description available to us.

Materials
• Flip chart and markers to record the key points of the discussion.

Preparation
To prepare for the session:
• Familiarize yourself with the session’s structure and content.
• Be prepared to introduce each attribute as follows:
  1. Relative advantage of the proposed change: “the degree to which an innovation is perceived as being better than the older or present alternative.”
  2. Compatibility with the current system: “the degree to which an innovation is perceived as relatively difficult, simple, or easy to understand and use.”
  3. Observability: “the degree to which the results of an innovation are visible to others.”
  4. Trialability/Testability: “the degree to which an innovation is perceived as being better than or similar to an old idea it supersedes.”
  5. “Testability” of the change.
• Practice presenting the key teaching points.

To prepare for this session:
• Tell participants that by the end of the session they will:
  • Have a sense of how to present a change so more people will adopt it.
  • Understand some of the challenges in implementing a change.

Key Concepts
A demonstration with everyone participating.

Key Concepts
• People need time to adopt a change at different rates.
• People usually want to adopt a change which category their peers fall into (i.e., early adopter, early majority, late majority, and laggard).
• The distribution of these groups in a population roughly imitates the bell curve, with most falling into the early majority or late majority categories.

As the game is designed to show, many factors about a change affect which category a person will fall into at any given point in time. Rogers has identified five attributes of change that may affect how people respond to change. He explains these briefly to your audience, primarily to help you “sell” the change and its benefits to your audience. He identifies five attributes of change that may affect how people respond to change. He explains these briefly to your audience, primarily to help you “sell” the change and its benefits to your audience.

1. Relative advantage of the proposed change: “the degree to which an innovation is perceived as being better than the older or present alternative.”
2. Compatibility with the current system: “the degree to which an innovation is perceived as relatively difficult, simple, or easy to understand and use.”
3. Observability: “the degree to which the results of an innovation are visible to others.”
4. Trialability/Testability: “the degree to which an innovation is perceived as being better than or similar to an old idea it supersedes.”
5. “Testability” of the change.

Research also shows that those in the “early adopter” category are more open to change than those in other categories. As the game is designed to show, many factors about a change affect which category a person will fall into. As the game is designed to show, many factors about a change affect which category a person will fall into. As the game is designed to show, many factors about a change affect which category a person will fall into.
The Game Itself

1. In a group of 30-40 people, ask for two volunteers to come up and "pitch" their idea to the audience. It should be a topic they think is good, but might be a little tough to sell to the group. The idea can be on any subject—something related to an HIV program or not.

2. Instruct the two people giving the "pitch" to use Rogers' Model (Kichen Utensil Game) to illustrate the change in what they do.

3. One of these two goes first and pitches their idea in front of the crowd in one minute. The group up front is asked to sort themselves from left (innovators/early adopters) to right (late adopters/historians). People who are left (innovators/early adopters) are asked what it would take for them to adopt the idea. The second "seller" then gets up and pitches his or her idea for one minute, and the group up front is asked to sort itself again for adoption of the new idea. Expect resistance to change.

4. Th e remaining people listening are asked to group in the middle of the distribution and range themselves in the middle of the room. (Expect a roughly bell-shaped curve.)

5. Have people at each end of the distribution explain why they did or did not "buy" the change. People who are ranged themselves in the middle of the distribution can be asked what it would take for them to adopt the idea.

6. The second "seller" then goes up and pitches his or her idea for one minute, and the group up front is asked to sort itself again for adoption of the new idea. Expect resistance to change.

Debrief and Discussion

Resume as a large group. Direct the meeting to:

- Ask participants what they think happened. Key points to start from the discussion include:
  - Different changes are easier or harder to sell than others. You may need to tailor your communications about the change accordingly.
  - Not everyone will adopt a change quickly. For an "early adopter," expect more of a bell-shaped curve. Some people are more likely to accept one type of change versus another. Some are innovative or logistically dependent on the different types of ideas or changes proposed. It's important not to stereotype people as always being innovative or risk.
  - Ask participants how they might apply what they learned from this game to their HIV programs.
  - What does this way of thinking about change tell us about how to make change happen in our programs? How can we better address Rogers' attributes of change that you did or did not "buy" the change?
  - What does this way of thinking about change tell us about how to make change happen in our programs?

Feedback and Close

- Ask your audience for feedback on whether this session met its objectives. Take each of these points on a flip chart and keep them for your use in the future.

Model Kitchen Utensil Game

Why Use This Game

- To teach about people's reactions to dealing with change.
- To help groups develop strategies for making change more palatable.

Target Audience

Of team members who will be involved in testing changes with their colleagues. You may also include the people who will be testing the changes, as well as those in leadership from a dimension of what it's like to deal with change.

Type of Game

A competition among teams.

Key Concepts

- People don't like to deal with change.
- Some innovations will make it more likely that the change you propose will be accepted.

Source, History and Resources for More Information

Playing the Model Kitchen Utensils Game

Rationale and Introductions

To begin the game, welcome participants and thank them for their participation. If necessary, ask individuals to introduce themselves to the group.

Learning Objectives

- Tell participants that by the end of the session they will:
  1. Understand how people may react to dealing with change.
  2. Develop ideas about how to present changes so people feel more willing to try them.

Agenda

- Provide a brief description of the session’s primary components:
  1. Background to the Model Kitchen Utensils Game.
  2. The game itself.
  3. Debrief and discussion on what the game shows, and how its lessons can be applied to HIV care.
  4. Feedback and close.

Background to the Game

Facilitator’s note

The purpose of this game is to expose the participants to a situation where they will have to deal with an unexpected change in “the rules of the game.” When they have finished the game, you can then lead a discussion about how it was to cope with the unexpected change, and draw lessons out that the participants might apply as they begin to test the changes for improvement they have developed.

A commonly used saying about change is that “people don’t object to change, they object to being changed.” This game seeks to show how to keep your change effort from being one where people feel they are “being changed.” Some effective strategies to include:

- Clear, consistent explanations of what the change involves.
- Clear statement of the purpose of the change.
- Use of the PDSA cycle: start small!
- Helping people see how an earlier trial of the change has worked – don’t just tell them about it.
- Focus on applications of the new rules.
- An opportunity to participate in designing the change (PDSA helps here, too).
- Communicating that you understood that making change is hard.

This game should be adaptable to many different scenarios. You could have the teams construct paper hats, for example. Chen & Roth suggest having the teams make paper animals. Building anything that is somewhat elaborate and that lends itself to changing criteria in the middle of the game can serve as the purpose of the team exercise.

Key points to explain to your audience:

- People embrace change at different rates.
- How they feel about change may vary depending on the specific innovation being proposed.
- Careful explanations around key attributes can help people become more open to change.

The Game Itself

1. The participants should work in groups of 6-8 people.
2. Explain the rules:
   - The teams should use the materials provided to build a replica of any common kitchen utensil.
   - They may use only the materials provided.
   - There will be a prize at the end for the team with the utensil that:
     1. Looks the most like the utensil it is supposed to be, in, for example, size, shape and color.
     2. Is the most elaborately shaped toward using boards, for example, would not score high on a criterion.
   - Tell the participants they have 25 minutes to complete the task.
   - Tell the teams there will be a vote among participants at the end to determine the winner.
   - The team begins work.
   - After 10 minutes, get the participants’ attention. Tell them the “rules” have changed. The utensils will also be judged on how functional they are: whether they can be used to make the对象 they are intended to (a bowl really hold liquids? Will the spatula really flip a pancake?)
   - After 15 minutes, stop the teams. Have each team present their utensil. Note for the minute by minute of hands and present the prize to the winners.

Debrief and Discussion

Reconvene as a large group. Review results.

- Ask for a report from each group in turn:
  - How did they work together as a group? Were decisions made well? Were they able to be creative?
  - Were they pleased with their product? Why or why not?

- Then begin a general discussion of people’s reactions to the change in instructions:
  - What did they think?
  - How did their team react?
  - Did the new instruction make their final product better or worse?
  - What would they have done differently if they’d known the criterion from the beginning?
  - Have changes been made? Have you had any problem in handling the task?

- Ask participants how they might apply what they learned from the game to their HIV programs.
  - Have changes been made in the past? What has worked, and what hasn’t?
  - Should we do our next largest task now or change?
  - How can we help our colleagues deal with the changes we will make?

- Develop a simple work plan to make sure the suggestions get implemented.
Feedback and Close

- Ask your audience for feedback on whether the session met its objectives. Take note of their responses on a flip chart, and keep it for future use in the future.
- Schedule an informal follow-up session with any audience members who need clarification or more information on the game or the concepts you discussed.
- Thank your audience and congratulate them on their hard work and success.

Games to Teach
Cooperation Skills
Many Questions Game

Why Use This Game

- To teach the idea of team synergy, that each member of a team brings valuable skills and experience to a task and that together, a team can produce a better result than any one individual.

Target Audience

Senior staff and team members, especially newcomers to QI work and teams that are just forming.

Type of Game

A competition among teams.

Key Concepts

- Joint problem solving and idea generating methods are valuable.

Source, History and Resources for More Information

This game comes from "101 More Training Games," by Gary Kroehnert, McGraw-Hill Book Company, Australia, Sydney, copyright 1999 (pp. 44-45). Mr. Kroehnert includes permission to reproduce his games for educational purposes or training sessions.

Many others have developed games similar to this one. The most famous may be the well-known Lost at Sea simulation, which can be purchased from the publisher Jossey-Bass or large online booksellers. Joseph G. Van Matre and Donna J. Nowak published a version of the Many Questions game that uses a wide variety of music selections rather than trivia questions (Quality Management Journal vol. 7, no. 2, 2000).

Materials

For this game, you will need:

- A list of varied trivia questions (see Attachment 1, or any list of trivia questions on a wide variety of topics will work): make enough copies of this list for each participant
- Pens for each participant
- A flip chart and markers to demonstrate the game and to record the key points of the discussion

SESSION AT-A-GLANCE

<table>
<thead>
<tr>
<th>WHO? HOW LONG?</th>
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<tbody>
<tr>
<td>Introduction</td>
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<tr>
<td>The Game</td>
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<tr>
<td>Debrief and Discussion</td>
</tr>
</tbody>
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Preparation

To prepare for this session:

- Familiarize yourself with the session’s structure and content.
- Read through the game instructions and key teaching points in their entirety.
- Practice the game itself.
- Practice presenting the key teaching points.
- Prepare the room:
  - Arrange chairs around a table or tables, set up to make it easy for the participants to work in small groups.
  - Distribute paper and pens for each participant.
  - Set up the flip chart so you can give the instructions and capture key points of the discussion after the game.

Playing the Many Questions Game

Welcome and Introductions:

To begin the game, welcome participants and thank them for their participation. If necessary, ask individuals to introduce themselves to the group.

Learning Objectives:

Tell participants that by the end of the session they will:

- Understand the value of working in teams to solve problems and develop solutions.

Agenda:

Provide a brief description of the session’s primary components:

1. Background to the Many Questions Game.
2. The game itself.
3. Debrief and discussion on what the game shows, and how its lessons can be applied to QI work.
4. Feedback and class.
Background to the Game

Facilitator’s note
This game works best without a lot of introduction. It is
meant to be a quick exercise to show the benefits of team-
work and collaboration.

The Game Itself (From Kroehnert, p. 44)
• Advise the group that they are going to be given a quick
quiz to complete.
• Give each participant a copy of the question sheet and
tell them they are to answer as many questions as
possible by themselves in the next 2 minutes.
• After the 2 minutes have passed, get the group to form
smaller groups of 5-7 people. Give these subgroups
5 minutes to arrive at a set of answers on which
everyone agrees.
• The subgroups now give their answers to all of the
questions. Keep the pace up during the phase. Give the
answers to any questions that the groups have not been
able to answer correctly.
• You can summarize the exercise simply by saying “If
everyone participates in the upcoming improvement
work, you can see from this exercise that we will achieve
far better results.” Alternatively, a discussion may be led
into problem solving strategies or synergy.

Debrief and Discussion
• Review results.
• Ask the participants why the group scores were higher
than the original scores.
• Discuss the application of what they have learned
to their own HIV program.
• Do we have the right people involved in our
HIV improvement work? Do we need to add a
different perspective?
• Have we seen joint problem solving methods in our
quality improvement work?
• In what other ways would joint problem solving
methods help our HIV program?

Feedback and Follow-Up
• Ask your audience for feedback on whether the session
met its objectives. Take note of their responses on a flip
chart, and keep it for your use in the future.
• Schedule an informal follow-up session with any audi-
ce members who want clarification or more informa-
tion on the game or the concepts you discussed.
• Thank your audience and congratulate them on their
hard work and success.

Many Questions Game

1. What right does the 2nd Amendment to the U.S. Constitution give?
2. Which color jersey is traditionally worn by the overall leader in a multistage bicycle road race?
3. Which major league ballplayer currently holds the record for the most consecutive games in which he had a hit?
4. Who painted The Night Watch?
5. Who won the first round of Survivor?
6. Who was prime minister of the U.K. in 1981?
7. How do you say the number “one” in Japanese?
8. Which Greek philosopher lived from 470 – 399 B.C.?
9. In what city and state did Britney Spears first wedding take place?
   a. (extra credit: how long did this marriage last?)
10. What is nephrolepsis?
Attachment 2

Answer Sheet

1. The right to bear arms
2. Yellow
3. Joe DiMaggio
4. Rembrandt
5. Richard Hatch
6. Margaret Thatcher
7. Ichi
8. Socrates
9. Las Vegas a. less than 55 hours
10. A fern

SESSION AT-A-GLANCE

<table>
<thead>
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<th>SESSION</th>
<th>AT-A-GLANCE</th>
<th>WRT</th>
<th>DFLN</th>
<th>LANGUAGE</th>
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<td>Game</td>
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<td>30 minutes</td>
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<tr>
<td>Debrief</td>
<td>Facilitator, audience</td>
<td>15 minutes</td>
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Scavenger Hunt Game

Why Use This Game

- To introduce team members to each other
- To help people understand their own team working styles
- To show how teams function most effectively

Target Audience

People who are about to join a project/working team.

Type of Game

A competition among teams.

Key Concepts

- Having a clearly understood goal is critical to team performance.
- Teams work best when tasks are divided among members.
- Creativity can help solve problems.

Source, History and Resources for More Information

Playing the Scavenger Hunt Game

Welcome and Introduction
To begin the game, welcome participants and thank them for their participation. It may be necessary to introduce themselves to the group.

Learning Objectives
Tell participants that by the end of the session they will:
- Know their future teammates better.
- Understand the importance to teams of having a clear goal.
- Understand how teams work most effectively.

Agenda
Provide a brief description of the session's primary components:
1. Background to the Scavenger Hunt.
2. The game itself.
3. Debrief and discussion on what the game shows, and how its lessons can be applied to HIV care.
4. Feedback and close.

Background to the Game

Facilitator's note
Teams that work well are like sports teams. The best teams have members with different skills and strengths, and coordinate those skills and strengths to pursue a common goal. Groups of people who are forming as teams will have difficulty coordinating their efforts. They will not know the skills of their colleagues and may not trust that they can contribute to the task. This game gives a new team experience in working as a team, and through this experience will help give the team confidence in their ability to succeed in the upcoming quality improvement work in their HIV program.

Your job as facilitator is to observe how the teams go about the scavenger hunt. Does everyone on the team search for every item together? Does one person go off on his or her own to try to do all the work without consulting others? Chances are, the most successful team will be the one that diverts up the tasks, and you should be prepared to point this out and lead a discussion about effective teamwork.

In creating the list of items each team has to find, aim for some that will be easy and some that will be hard. Try to include items that will require collaboration to locate. Encourage teams to be creative (that's where the fun comes in) but clarify that you will be the judge of whether a "creative" item meets the requirements of the hunt (hint: use this option to reward examples of good collaboration and teamwork). The teams are likely to get very competitive!

Scavenger Hunt Game

Key points to explain to your audience:
- Explain that working as a team can be a different experience, even for people who previously have worked together in a clinic or other setting.
- Highlight that the first step in forming as a team involves getting to know each other; the game is designed to give participants a chance to begin to work together and to have fun.
- Explain that the game will also help illustrate some of the issues involved in working as teams.

The Game Itself

- Convene at least three new teams to participate in the Scavenger Hunt.
- Give each team the list of items they must find (see Attachment 1 for an example). Mention the prize that will go to the winning team.
- Clarify the instructions and ground rules:
  - Time limits.
  - Can't leave the site.
  - Can't sabotage another team.
  - Creativity and teamwork are encouraged (but you are the judge).
- Ask for any questions, and when all questions are answered, begin the hunt.

Debrief and Discussion

- Ask each team to describe its method: how did that team go about carrying out the task?
- On reflection, did this method work well?
- If the results suggest it didn't, ask the teams that didn't win what went wrong and why.

Feedback and Close

- Ask your audience for feedback on whether this session met its objectives. Take note of their suggestions for improvement.
- Schedule an informal follow-up session with any audience member whose comment or question remains unresolved, and bring the game or the concepts you discussed.
- Thank your audience and congratulate them on their hard work and success.
Sample Scavenger List and Team Instructions

Instructions:
Work as a team to find as many of the items on this list as you can. A prize will be given to the team(s) that can find the most items.

Time Limit:
30 Minutes. You will be given the exact time you must return to the main meeting room.

Ground Rules:
• You may not leave the building with the sole exception of going to the parking lot to get one or more items out of a team member’s car.
• You may not negatively influence or affect the work of any other team.
• Creativity and teamwork are encouraged.

The List:
• A "state" quarter from one of the original 13 states.
• A copy of the "Home" section from today’s New York Times.
• A box of Tic-Tacs (at least partially full).
• A roll of toilet paper.
• A deck of cards.
• A photograph of a pet.
• A tube of Colgate Total toothpaste.
• A copy of a medical or hospital-related professional journal (e.g., New England Journal of Medicine, Modern Healthcare, Joint Commission Perspectives, nursing or social work journal).
• A pair of white socks.
• A set of jumper cables.
• Any memorabilia (hat, t-shirt, key chain, socks, etc.) from the New York Mets or New York Yankees.
• A jar or bottle of cream or lotion containing alpha-hydroxyl acids.

Good Luck!!!
Playing the Headliners Game

Welcome and Introduction
To begin the game, welcome participants and thank them for their attendance.

Learning Objectives
Tell participants that by the end of the session they will have:
• Celebrated their team's work.
• Learned what others have done.

Agenda
Provide a brief description of the session’s primary components:
1. Introduction to the session and the Headliners Game.
2. The game itself, with presentation of the results.
3. Formal recognition of each team's work.

Background to the Game

Facilitator’s note
Your quality improvement projects will make changes that will improve the quality of care and services provided by your organization. This is your primary goal. But each project has a secondary goal: to teach everyone in your organization that change can happen and that teams can be successful in their improvement work. You can only achieve this secondary goal if you broadcast and brag about what QI teams do. The teams work hard and sometimes try risky things. They need a chance to show pride in what they have accomplished.

The Game Itself

• Welcome everyone to the event.
• Ask them, as a first step, to work in their teams to create a newspaper headline.
  - The headline should capture the work that the team has done this year.
  - What has been accomplished?
  - What has working on the project inspired the team?
  - Give them 10 minutes to write the headlines.
  - They should be creative!
• Have each team post and present its headline (creativity in the presentation is also encouraged).
• Formally recognize each team's work; distribute certificates.

Debrief and Discussion

• Ask if there are any questions for the teams; facilitate the discussion, if any arise.
• Ask for ideas from participants for future quality improvement work.
• Serve refreshments, relax, and celebrate!
Notes