



# Butterfly Effect Game

## Why Use This Game

- To show how a change in one part of a system can “ripple through” other parts of the system.

## 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

- Systems are complex and their parts are interrelated.
- Changes in one part of a system affect other parts of the system.
- It's important to make changes carefully so these unexpected consequences can be accounted for.

## 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; the Ohio QIO provided information about this game to Qualis Health.

## Materials

- 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 in a circle around the outside of the room. You will need a large open space for people to walk around in.

## 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 introduce themselves 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 Health 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.

One simple change – 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 "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 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 select two other people in the room, but keep the names of these 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 they move, others will need to move, and the configuration of the room will keep changing.
- The facilitator can also move in stops and starts to clarify the effect.
- Keep it up until people dissolve in laughter or express frustration.

## Debrief and Discussion

- Reconvene as a large group and review results.
- Ask the group to describe 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 movement of people in the room was a system (try to get participants to see that it was a system).
- Discuss the application of what they have learned to their own facilities.
  - What are the key components of their care system?
  - Which parts of the system affect other parts of the system? This could be a very rich discussion. Press participants to think about this carefully and to share their conclusions.
  - What has happened when changes have been made in their system?
    - Did they "ripple through" the system?
    - When and why?
    - Often, focusing on one part of the care process can pull attention from another part
    - Has this happened in your program?
  - Could this "rippling" have been prevented? What might they do differently? (This can be a place to bring up the concept of PDSA: testing changes on a small scale can reveal these problems early.)

## Feedback and Close

- Ask your audience for feedback on whether this session met its objectives. Take notes of their response 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 and success.