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Model for Improvement

The Model for Improvement,* developed by Associates in Process Improvement, is a simple yet powerful tool for accelerating improvement. The model is intended to accelerate improvement. This model has been used very successfully by hundreds of health care organizations in many countries to improve many different health care processes and outcomes.

The model has two parts:

- Three fundamental questions, which can be addressed in any order.
- The Plan-Do-Study-Act (PDSA) cycle** to test and implement changes in real work settings. The PDSA cycle guides the test of a change to determine if the change is an improvement.

CL, Provost LP. The Improvement Guide: A Practical Approach to Enhancing Organizational Performance.

**The Plan-Do-Study-Act (PDSA) cycle was originally developed by Walter A. Shewhart as the Plan-Do-Check-Act (PDCA) cycle. W. Edwards Deming modified Shewhart's cycle to PDSA, replacing "Check" with "Study."
What are we trying to Accomplish?

Setting Goals
Improvement requires setting goals. Your goals should be time-specific and measurable.

State the goal clearly Agreeing on the goal of a project is necessary for progress. Teams with very specific goals make better progress. Make sure your goal describes what is to be improved and states and how you plan to do accomplish it.

Include numerical goals Setting numerical goals focuses changes by helping team members think about what their measures of improvement will be.

Set stretch goals A "stretch" goal is one to reach for within a certain time to make it clear that you must look for ways to overcome barriers and achieve the goal not just by tweaking the existing system.
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**How do we know that a change is an improvement?**

Measurement

Measurement is a critical part of testing and implementing changes; measures tell you whether the changes you are making actually lead to improvement. Measurement for improvement should not be confused with measurement for research. This difference is outlined in this chart:

<table>
<thead>
<tr>
<th></th>
<th>Measurement for Research</th>
<th>Measurement for Learning and Process Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose</strong></td>
<td>To discover new knowledge</td>
<td>To bring new knowledge into daily practice</td>
</tr>
<tr>
<td><strong>Tests</strong></td>
<td>One large &quot;blind&quot; test</td>
<td>Many sequential, observable tests</td>
</tr>
<tr>
<td><strong>Biases</strong></td>
<td>Control for as many biases as possible</td>
<td>Stabilize the biases from test to test</td>
</tr>
<tr>
<td><strong>Data</strong></td>
<td>Gather as much data as possible, &quot;just in case&quot;</td>
<td>Gather &quot;just enough&quot; data to learn and complete another cycle</td>
</tr>
<tr>
<td><strong>Duration</strong></td>
<td>Can take long periods of time to obtain results</td>
<td>&quot;Small tests of significant changes&quot; accelerates the rate of improvement</td>
</tr>
</tbody>
</table>

**Tips for effective measurement**

1. **Plot data over time.** Much information about improvement can be obtained by plotting data over time and then observing trends and patterns. Tracking a few key measures over time is the single most powerful tool a team can use.
2. **Seek usefulness, not perfection.** Remember, measurement is not the goal; improvement is the goal. In order to move forward to the next step, you need just enough data to know whether changes are leading to improvement.
3. **Use sampling.** Sampling is a simple, efficient way to help you understand what is happening. Sampling can save time and resources while accurately tracking performance.
4. **Integrate measurement into the daily routine.** Use simple data collection methods and make collecting the data part of someone’s job.
5. **Use qualitative and quantitative data.** In addition to collecting quantitative data, be sure to collect qualitative data, which often are easier to access and highly informative.
What changes can we make that will result in improvement?

Identifying and Selecting Changes

While all changes do not lead to improvement, all improvement requires change. A change concept is a general notion or approach that may be found useful and lead to improvement. Creatively combining concepts with knowledge about specific subjects can help generate ideas for tests of change.

Plan-Do-Study-Act (PDSA) cycles

Once you have identified a goal and identified measures to determine whether a change leads to an improvement, the next step is to test the change. The Plan-Do-Study-Act (PDSA) cycle is shorthand for testing a change — by planning it, trying it, observing the results, and acting on what is learned. This is the scientific method, used for action-oriented learning.

Reasons to Test Changes

- To increase your belief that the change will result in improvement.
- To decide which of several proposed changes will lead to the desired improvement.
- To evaluate how much improvement can be expected from the change.
- To decide whether the proposed change will work in the actual environment of interest.
- To decide which combinations of changes will have the desired effects on the important measures of quality.
- To evaluate costs, social impact, and side effects from a proposed change.
- To minimize resistance upon implementation.

Step 1: Plan
Plan the test or observation-who, what, when, where, how, what data needs to be collected, length

Step 2: Do
Try out the test on a small scale.

Step 3: Study
Set aside time to study the results- compare to what you thought might happen to what did happen.
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Step 4: Act
Refine the change, based on what was learned from the test.

Tips for testing changes

1. **Stay ahead**- When thinking about a test, imagine at the start what the subsequent test or two might be, given various possible findings in the "Study" phase of the Plan-Do-Study-Act cycle.

2. **Scale down the scope of tests**- Dimensions of the tests that can be scaled down include the number of patients, doctors, and others involved in the test.

3. **Pick willing volunteers**- Work with those who want to work with you. ("I know Dr. Jones will help us" instead of "How can we convince Dr. Smith to buy in?")

4. **Avoid the need for consensus, buy-in, or political solutions**- When possible, choose changes that do not require a long process of approval, especially during the early testing phase.

5. **Don’t reinvent the wheel**- Instead, replicate changes made elsewhere.

6. **Pick easy changes to try**- Look for the concepts that seem most feasible and will have the greatest impact.

7. **Reflect on the results of every change**. After making a change, you should ask: What did we expect to happen? What did happen? Were there unintended consequences? What was the best thing about this change? The worst? What might we do next? Too often, people avoid reflecting on failure.

8. **Be prepared to end the test of a change**- If the test shows that a change is not leading to improvement, the test should be stopped. Note: "Failed" tests of change are a natural part of the improvement process. If you do not experience a few failed tests of change, you might not be pushing the boundaries of innovation very far.

Implementing Changes
After testing a change on a small scale, learning from each test, and refining the change through several PDSA cycles, the change is ready for implementation on a broader scale.