PLAN | DO | STUDY | ACT

solving puzzling probation problems with **PDSA**

PARTICIPANT'S GUIDE

CREATED BY

Center for Advancing Correctional Excellence! | at
George Mason University

acknowledgements

People we'd like to thank

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a manual inspired by practitioners and built for practitioners

About this manual

This manual is a guide for staff in criminal justice agencies for solving the problems they face in their offices, both large and small. Specifically, the manual guides readers through the background and evidence supporting the use of Plan-Do-Study-Act (PDSA) and uses community corrections examples to translate ideas for the justice field. The manual directs readers through each step of the PDSA process, including how to specify problems, develop targeted solutions, implement them, study them, and ultimately make decisions about how to act based upon the analysis. In essence, YOU become the designer, implementer, and researcher in your office or unit, allowing you to solve problems that affect you and your staff.

How to use this manual

This manual is a step-by-step process through the PDSA quality improvement process. We recommend familiarizing yourself with the background and research supporting these techniques in order to build buy-in from staff who will take part in the solution and help sustain a culture of innovation in your office.

From time-to-time, you'll see icons in the manual to help elaborate on specific concepts from the research or showcase an example from the field. Be on the look out for these tips, definitions and case studies, as they are designed to help guide new thinking in your office.

HERE'S A TIP
These ideas came from witnessing the process in action. Consider these tidbits a little something "extra" as you work with your staff.

FROM THE IVORY TOWER
These are academic terms, concepts and processes translated and defined in easy to use ways.

BRIGHT IDEAS
These icons identify new ways to work or think that aren't directly linked to PDSA but may help trigger new processes in your offices for sustaining solutions.

CASE STUDY
These boxes feature the concept in action via an example developed from the agencies and supervising staff who helped inspire this manual.

The target audience

This manual is for all staff in criminal justice agencies—managers, line staff, directors—to facilitate changes to small problems in a localized way. Any staff member can engage in the PDSA process, and the manual is geared toward anyone who is motivated to solve problems in the workplace!

table of contents

QUALITY IMPROVEMENT MODELS

section 1

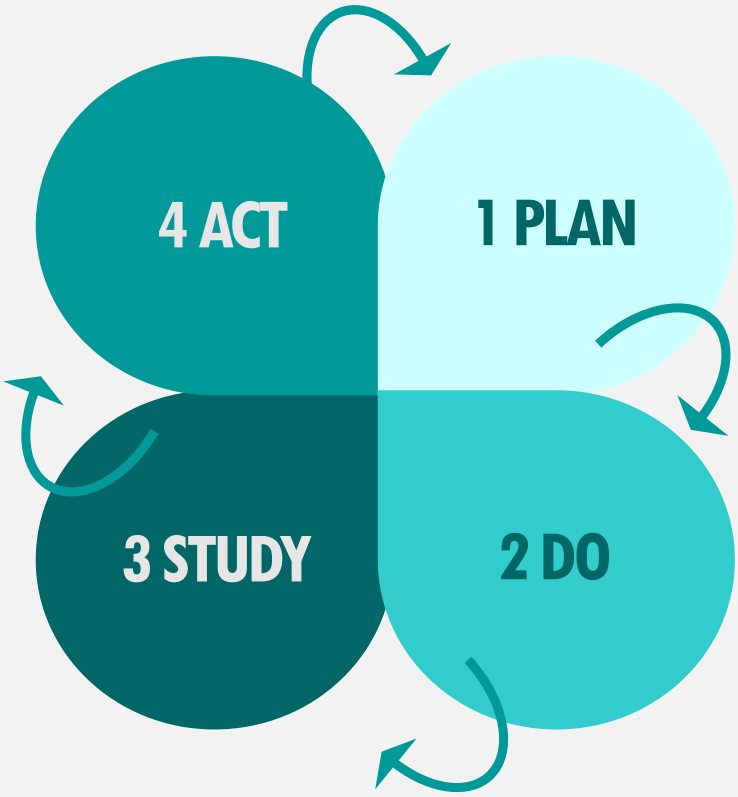
quality improvement models

Implementation Science often overlooks the importance of micro-processes in the work flow. Improving the quality of initiatives means offices must look at smaller units of cultures and processes to better understand *where exactly* problems occur and how the local level can best respond to them.

In the 1980s, while trying to keep pace with the American automotive field, Japanese automobile companies realized they, too, needed to make changes to legitimize themselves within the field. In particular, they were interested in improving the *quality* of production while also improving the *quality* of the workplace. They believed:

QUALITY IS NOT CONTROLLED AT THE END OF THE CAR PRODUCTION LINE, BUT RATHER THROUGHOUT THE ENTIRE WORK PROCESS.

This emphasis on establishing a culture of quality in look *and* feel, where managers defined the characteristics of how the process *should* operate, drove companies to rely on a systematic approach that could assess the context surrounding change in order to understand *where* and *how* to improve quality. This approach is known as the Quality Improvement (QI) Model.



introducing:

PLAN DO STUDY ACT

PDSA stands for Plan-Do-Study-Act and was first introduced by Edward Deming in 1986. PDSA is a small scale, **rapid cycle** approach to improving the quality of procedures and practices. PDSA is also **localized**, allowing the context of the location to drive problem-solving decisions. The concepts surrounding PDSA seem pretty straightforward, but what strengthens the technique is the use of **data** and a **systematic process** to problem solving.

Although, DO, STUDY and ACT are 75% of the PDSA pie, the PLANNING stage involves a substantial amount of coordination and consideration. Most of this manual will break down this stage, ensuring success for your quality improvement projects.

FEATURES INCLUDE

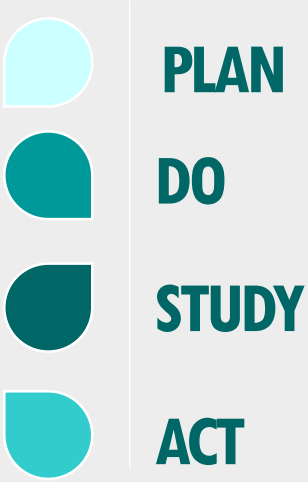
DATA-DRIVEN

SMALL SCALE

LOCALIZED

RAPID CYCLES

PLAN DO STUDY ACT


PLAN
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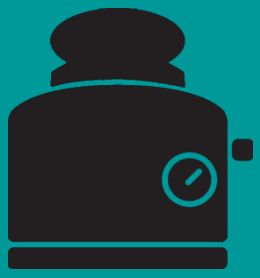
THE MEAT & POTATOES OF THIS MANUAL

section 2

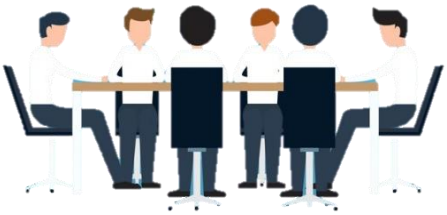


MAKING TOAST

The goal of this activity is to help staff understand that everything – even simple tasks or those considered second nature – is a process. By detailing the process of making toast, staff are engaged with some of the hidden assumptions of simple tasks (such as starting points or accessibility to necessary materials). Also, by working in teams, we learn to expand our vision about the process.

p is for planning

PLAN DO STUDY ACT



PART 1

Brainstorming the Problem
Narrowing the Problem
Documenting Data

PART 2

Brainstorming Solutions
Outcome Measures

PART 3

Developing the Solution

- Process Measures
- Materials
- Tasks & Roles
- Timeline

p is for planning

PART Ia: BRAINSTORMING PROBLEMS

List a few problems you see in your office, according to your data:

PART Ib: NARROWING PROBLEMS

Decide with your team one of these big problems to tackle. Rewrite the overarching problem your team identified, and then list some of the inner/outer setting factors contributing to this problem.

ORIGINAL PROBLEM: _____

INNER SETTING ISSUES	OUTER SETTING ISSUES
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Which of these inner setting issues do you believe is most contributing to the problem?

case study

ORIGINAL PROBLEM

Officers don't know how to develop meaningful case plans

Staff being unable to develop meaningful case plans for probationers may represent a training or resource issue in the building foundation domain. However, as it is currently written, an argument could be made that this problem is indicative of many factors.

narrowing

INNER SETTING ISSUES

The value of a case plan is not clear

Officers do not have the resources necessary to create a case plan

Needs are not prioritized for/with clients

OUTER SETTING ISSUES

Treatment providers are unresponsive to officer requests

Officer turnover creates inconsistency in plans

Agency does not measure 'meaningfulness'

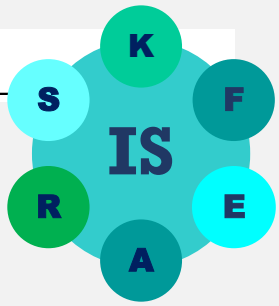
ORIGINAL PROBLEM: _____

INNER SETTING ISSUES

narrowing

OUTER SETTING ISSUES

NARROW PROBLEM: _____



Pick a domain for the narrow problem you selected from the inner setting issues.

DEVELOPING KNOWLEDGE

Selecting this domain suggests your problem is about understanding or translating the reasons why the program is designed as is it and/or the evidence surrounding its effectiveness.

BUILDING FOUNDATION

Selecting this domain means your problem may suggest a need for additional booster training or coaching sessions, examination of resource accessibility issues and/or the need for procedures/ protocols to be put in place.

SETTING EXPECTATIONS

Selecting this domain suggests the factor is a result of ambiguity or lack of clarity about what is expected. Additionally, selecting this domain may indicate the way information is shared is not the preferred method and suggest the need for a feedback loop regarding staff concerns.

ALIGNING PRACTICES

Selecting this domain suggest there is unclear information about the evidence of the program, how the program supports other initiatives and the office/org goals, its ability to improve officer effectiveness as a change agent and/or how to fit the program into day-to-day routines.

RENOVATING & FIT

Selecting this domain suggests small tweaks within the process itself must be made to fit the office context and informal rules. Be careful not to adjust the process so much so as to disrupt the core components of the program that make it work.

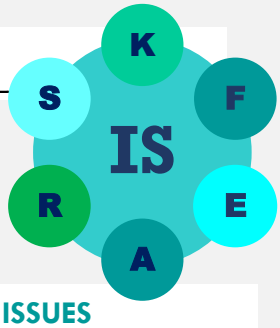
SUSTAINABILITY

Selecting this domain suggests staff are not adhering to the practice as intended and the issue surrounds how *well* staff are performing the process.

ORIGINAL PROBLEM: _____

INNER SETTING ISSUES narrowing **OUTER SETTING ISSUES**

NARROW PROBLEM: _____



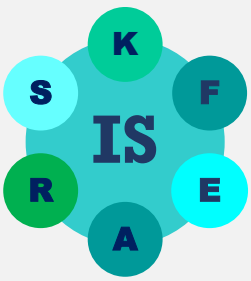
Now, list some of the inner setting factors contributing to this new narrow problem.

INNER SETTING ISSUES	INNER SETTING ISSUES
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Which of these inner setting issues do you believe is most contributing to the problem?

narrowing

NARROWER PROBLEM: _____



Pick a domain for the narrower problem you selected from the inner setting issues.

p is for planning

PART Ic: CONFIRMING THE PROBLEM WITH DATA

One issue with problem identification is that many people rely on anecdotal evidence to confirm the existence of the problem. To combat this, the PDSA process requires data to confirm the problem and avoid misdirected problem solving. What a waste of time!

When thinking about your narrow problem as is, consider what you believe it *should look like*. What questions would you need to ask if you were trying to assess whether your staff are doing 'it' the way you believe they should?

Asking questions of your staff's work can confirm the problem, **and** these answers will serve as baseline data.

Together, your staff will be able to understand both the extent of the problem and how their performance/understanding will be measured post-solution.

FROM THE IVORY TOWER

Baseline Measure: Information collected at the beginning of your study so you can tell whether change occurred. Also known as the "before" measure.

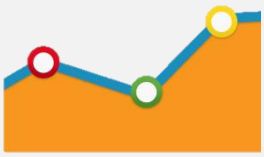
...continued

But where can you find data?

THE USUAL SUSPECTS...

Spreadsheets & Administrative Data

Draw upon data provided to you from your data management systems or document how many times something is occurring through a spreadsheet.



Time Series Measurements

Checking multiple individuals' work at different points in time can help assess whether the problem is a trend or a rare event.

Surveys & Interviews of Staff

Ask all staff! Compose a list of answers and see where there is agreement on the nature of a problem.

DIRECT SYSTEMATIC OBSERVTION

Observe the potential problem in action. This not only gives you information about its occurrence but also the nature of it. It is important to document certain information so you can see how patterns emerge. For example, you might observe the intake procedures in your office to identify or confirm whether particular problem exists. But to understand the nature of the problem, you must detect whether it exists across most instances or only under certain conditions. To do this, you need to plan observations of different people at different times in order to conclude the pervasiveness of the problem.

Direct systematic observation is a widely used methodology for collecting data, particularly in school and behavioral fields.

FROM THE IVORY TOWER

Despite its fancy name, the translation is really quite simple: "SEEING IS BELIEVING."

Direct systematic observation is about observing a phenomenon [the thing you think is happening] in an ordered manner [systematically] to increase reliability [so you can say it's a problem] and reduce bias [so someone doesn't accuse you of it being anecdotal or only from your perspective].

p is for planning

PART IIa: BRAINSTORMING SOLUTIONS

Recall the narrower problem you and your group defined earlier.
Rewrite your action statement below for reference.

ACTION STATEMENT: _____

With your small group, brainstorm solutions to the narrower problem you defined earlier.
Then, rank order your solutions.

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

You can rank your solutions using any metric: easiest to do, most likely to work, fewest resources. Come to a consensus and select a solution!

p is for planning

PART IIb: DEVELOPING OUTCOME MEASURES

Now that you've selected your solution, it's time to consider how you will measure your own success. Although it seems premature to consider outcome measures, you'll need these measures to inform *how* you will design the solution.

Good news! You have baseline data from your narrower problem and baseline data from your original problem. The ways you measured each of these problems can serve as outcome measures.

Using both of these measures are powerful in helping you draw more meaningful conclusions following the end of your PDSA cycle. For example, you might see positive changes in outcome measure 1 (the narrow problem measure), but no change in outcome measure 2 (the original problem measure). That might suggest that the more narrow problem selected is not the most influential factor contributing to the problem, despite the success of your PDSA.

case study

Measure 1 NARROW PROBLEM
PRE/POST TEST

Post-test solution knowledge score

Measure 2 NARROW PROBLEM
SYSTEMATIC OBSERVATION

Uses translatable language to redefine *needs* to client (measured Y/N)
Connects *needs* to how it might influence behavior (measured Y/N)

Measure 3 ORIGINAL PROBLEM
CONTENT ANALYSIS

FROM OFFICER CASE PLANS:
Identified *needs* (measured Y/N)
Prioritized *needs* (measured Y/N)
Set small goals (measured Y/N)
Number of small goals defined

p is for planning

PART IIb: DEVELOPING OUTCOME MEASURES

Now that you've confirmed both the narrow problem and the original problem with data, write these as "OUTCOME MEAUSRES" or, how you will measure success. Write these for both your narrow problem and your original problem. You may or may not have multiple measures for each.

NARROW PROBLEM:

_____

CONFIRMING THE PROBLEM WITH BASELINE DATA

LIST MEASURE(S):

_____

_____

ORIGINAL PROBLEM:

_____

CONFIRMING THE PROBLEM WITH BASELINE DATA

LIST MEASURE(S):

_____

_____

p is for planning

PART III: DEVELOPING THE SOLUTION

Whew! You're doing great – there are just a few more steps of the planning process. Last is designing the solution, developing process measures, listing materials, creating and delegating tasks and designing a timeline for the PDSA cycle.

Spend a few minutes with your team to articulate what the solution will look like.

PART IIIa: PROCESS MEASURES

List the each step of your solution (like the *Toast* exercise) and then consider how you will measure if that step was completed as intended or not.

SOLUTION STEPS	PROCESS MEASURES

p is for planning

PART IIIb: MATERIALS

Based upon each of the steps, list the materials needed… even if they seem small or trivial. Then determine whether you have ready access to these materials within your office. If not, list where you can go to get access. This is important because you'll need to assign someone to get them.

materials

LIST THE MATERIALS YOU'LL NEED	NO? WHERE CAN YOU GET THEM?

DO YOU HAVE ACCESS TO THESE MATERIALS?
YES! Cool.

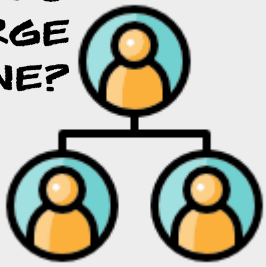
PART IIIc: TASKS & ROLES

tasks & roles

List the tasks that need to be completed prior to implementing the solution (such as acquiring materials outside of the office).

List who will be responsible specifically for the task. If it is a task everyone will be completing, then you can list the position or title (e.g., “All Officers”).

GREAT! NOW, WHO'S GONNA BE IN CHARGE OF GETTING IT DONE?

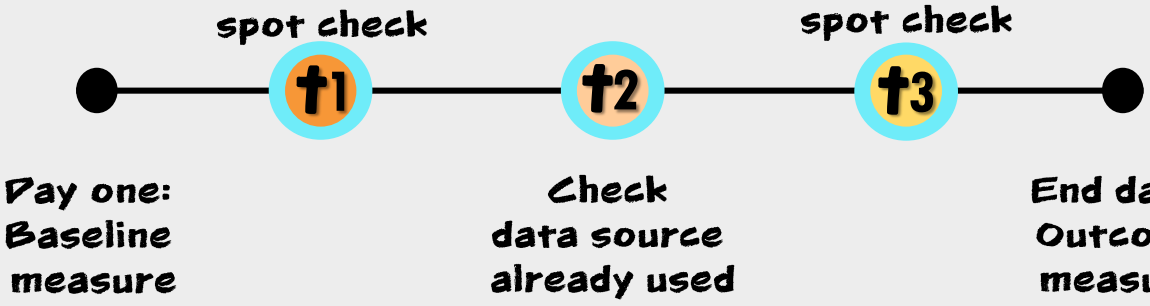


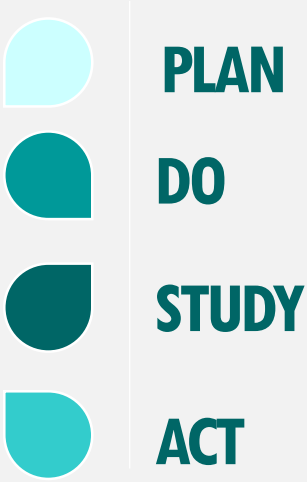
PART IIId: FIDELITY CHECKS & TIMELINE

fidelity checks & timeline

Throughout the PDSA cycle, you'll need to assess the process measures you created to determine whether the office is having difficulty implementing the solution in practice. You can also check-in with team members to elicit their voice in the feedback process prior to a formal analysis in order to make appropriate and necessary corrections during the process.

You might already collect data as part of your daily job responsibilities. Think about what you already have in place and construct a timeline with a formal audit aligning with this system. For example, do you already complete bi-monthly audits? If so, maybe your timeline should reflect a formal audit check on the second month. As you build your timeline, also consider the rapid cycle nature of a PDSA: it should last three to six months. As you become more familiar with the process, the timeline should get shorter: one to three months. Keep things short since there's no sense continuing with ineffective solutions. Toss them out! Then find that initial solution list and start again!




PLAN
DO
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[do]

STUDY

& ACT

section 3

the MARSH MALLOW CHALLENGE

The goal of this activity is to help staff understand the hidden assumptions in processes and reiterate the importance of the rapid cycle design.

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s is for study

The third part of a PDSA cycle is **studying** the effects of your solution to the problem. Studying overlaps the Do since you collect data on how the solution is going while you're doing it. In the Study phase, you will analyze your data and summarize your results.

In this section, we discuss the types of questions you should be asking of your measures and process in order to **analyze** your solution.

...continued

What did you expect to happen?

This is your hypothesis. Your outcome and goals identified during the Planning phase will inform the hypothesis.

What are your results? What do your process & outcome measures say?

What do your data tell you?

How do your results compare to your expectations?

Results can tell a very complex story about the issues going on. It's possible that during your PDSA you aimed to address one problem and uncovered other problems unaddressed by the solution.

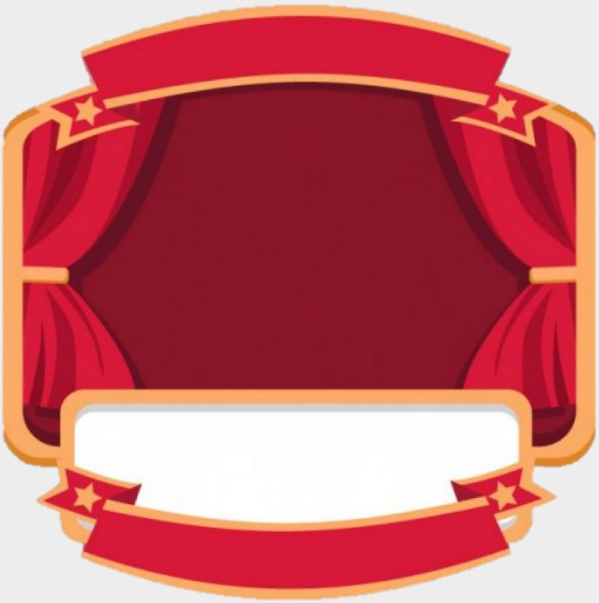
What issues arose during implementation?

During the Do phase, you collected information on the process of implementing a solution. This information can be compiled and analyzed in what is termed **process evaluation**.

What have you learned?

Consider PDSA cycles as not only a way to improve things in your offices but also as a way to learn about the initiative, your staff and yourself. It's also important to report the results of the PDSA cycle to your staff, not only to encourage more innovation, but also to increase buy-in for the solution and future solutions.

a is for act



Decision Time

The final step in a PDSA cycle is Act. In this step, you will decide what course of action to take based on your experience, your data and the input of your staff.

ADOPT

The solution improved things such that you want to Adopt it as a new practice or procedure in your office. Congrats!

ADAPT

This is where most solutions fall. During the PDSA cycle, you will have gathered a lot of information and likely come up with more ideas about how to make your solution better. Here, you may refine the problem, modify the solution, consider new data and outcomes, and then try again. This is the nature of the PDSA cycle!

ABANDON

Many times, things do not go as intended. That's okay!! Failure is the best educator, and seeing a solution fail can be incredibly informative. If you decide to abandon your problem or solution or both, consider all the reasons it may have failed.

REASONS A PDSA CYCLE MAY HAVE FAILED:

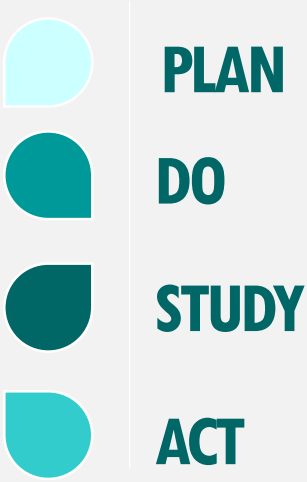
The problem was not specific enough

The solution was misaligned from the problem

Outcome measures did not adequately measure the solution

Staff buy-in was low

Other initiatives may have come online at the same time, interfering with the cycle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ODDS & ENDS

section 4

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glossary

Baseline Measure: Information collected at the beginning of your study so you can tell if change has occurred; Also known as the “before” measure

Cost-Benefit Analysis: A method of project evaluation that compares the potential benefits with the anticipated costs

Data: Facts or information usually used to calculate, analyze, or plan something

Direct Measure: A reference standard or sample used for the quantitative comparison of properties

Direct Systematic Observation: Observing the phenomena in an ordered manner to increase reliability and reduce bias; Observing the same situation/behavior in numerous instances and times and people

Fidelity: The degree to which something matches or copies something else

Implementation Science: The study of methods to promote the integration of research findings and evidence into healthcare policy and practice: It seeks to understand the behavior of healthcare professionals and other stakeholders as a key variable in the sustainable uptake, adoption and implementation of evidence-based interventions

Inner Setting: Issues related to constraints or barriers within the agency and office, including (but not limited to) leadership, engagement, culture and climate

Issue-selling: The process by which individuals affect others’ attention to and understanding events, developments and trends that have implications for organizational performance

Outcome Evaluation: Assesses the effectiveness of a program toward producing change

Outcome Measure: The standard against which the end result of the intervention is assessed

glossary

Outer Setting: Issues relating to constraints or barriers outside the agency, including (but not limited to) resources, political concerns and social issues

Pre-Post Test: Comparing groups and/or measuring change resulting from experimental treatments

Process Evaluation: Helps stakeholders see *how* a program outcome or impact was achieved

Proxy Measure: An indirect measure of the desired outcome which is itself strongly correlated to that outcome; It is commonly used when direct measures of the outcome are unobservable and/or unavailable

Quality Improvement Models: Systematic and continuous actions that lead to measurable improvement in practices

Randomized Control Trial: A study in which the subjects are randomly distributed into groups which are either subjected to the experimental procedure (such as use of a drug) or serve as controls

Rapid Cycle: Used to achieve continuous improvement where changes are made and tested over periods of three or months or less, rather than the standard eight to twelve months

Scientific Method: Principles and procedures for the systematic pursuit of knowledge involving the recognition and formulation of a problem, the collection of data through observation and experiment and the formulation and testing of hypotheses

Time-Series: Research design in which periodic measurements are made on a defined group of individuals, both before and after implementation of an intervention

Vertical Slice: A top-to-bottom representation of important stakeholders at all levels of an organization

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WANT TO KNOW MORE?

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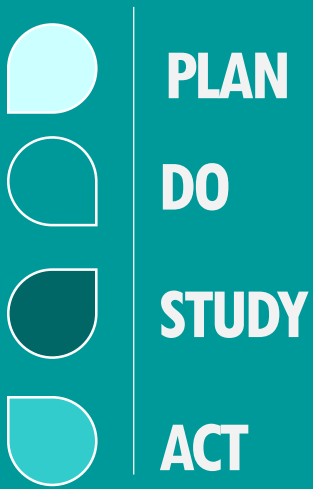
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