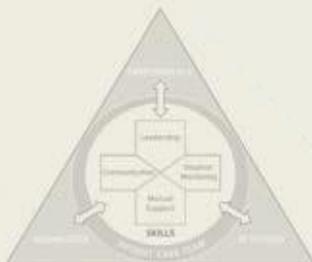# MEASUREMENT

**SUBSECTIONS**

- Measurement in TeamSTEPPS
- A Model of Training Evaluation
- Available Measures (Reactions, Learning, Behavior, Results)

**TIME:** 50 minutes

# INSTRUCTOR OUTLINE: MEASUREMENT

👁 **Instructor Note:** This module presents information about how to measure the impact of TeamSTEPPS and the tools that are available to support evaluation. It is important that participants learn how to assess the effects of their TeamSTEPPS implementation so they can determine whether TeamSTEPPS is working and producing the desired outcomes.

This module is primarily a lecture. It presents a well-established approach for conducting training evaluation and describes the available measures and their uses. There is an exercise at the end of the module for individuals to apply what they have learned.

The Measurement module includes the content provided in the outline below. Instructors should use the information below to plan how the module will be taught within the time available.

🕐 **MODULE TIME:**

50 minutes

📖 **MATERIALS:**

- Evaluating TeamSTEPPS Worksheet

|   | Content | Page # | Approx. Time |
|---|---------|--------|--------------|
| 1. | Introduction | 4 | 2 mins |
| 2. | Kirkpatrick's Training Evaluation Model | 5 - 6 | 8 mins |
| 3. | Available Measures | 7 - 19 | 30 mins |
| 4. | Evaluating TeamSTEPPS Exercise | 20 - 21 | 10 mins |

**Additional Resources:** Below are additional resources you may wish to use to obtain additional information:

- Kirkpatrick, D.L. (1967). Evaluation of training. In R.L. Craig (Ed.). *Training and development handbook: a guide to human resource development.* New York: McGraw-Hill.

- Salas, E., Almeida, S.A., Salisbury, M., et al. (2009). What are the critical success factors for team training in health care? *Jt Comm J Qual Pat Saf* 35, 398–405.

- Weaver, S.J., Salas, E., & King, H. (2011). Twelve best practices for team training evaluation in health care. *Jt Comm J Qual Pat Saf 37,* 341–9.
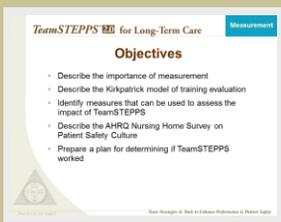
# OBJECTIVES



**Slide**

**SAY:**

Upon completion of this module, participants will be able to:

- Describe the importance of measurement;

- Describe the Kirkpatrick model of training evaluation;

- Identify measures that can be used to assess the impact of TeamSTEPPS;

- Describe the AHRQ Nursing Home Survey on Patient Safety Culture; and

- Prepare a plan for determining if TeamSTEPPS worked.

# MEASUREMENT IN TEAMSTEPPS

**SAY:**

Measuring the impact of your TeamSTEPPS implementation is critical. Measurement enables you to answer questions such as (1) Did TeamSTEPPS work?; (2) Did TeamSTEPPS produce the expected outcomes?; (3) Was TeamSTEPPS worth implementing in my unit, department, or work area?; and (4) If TeamSTEPPS did not work or did not produce the expected outcomes, why not? Not only should you and your colleagues—as you collectively lead the charge to implement TeamSTEPPS—care about the answers to these questions, but so should your nursing home's leadership.

As shown in the slide, measurement is important across all phases of the TeamSTEPPS implementation process. The results of measurement provide many benefits, including:

- Helping you identify where there are quality improvement needs;

- Providing you with data to help generate leadership, stakeholder, and/or staff buy-in of your efforts;

- Assessing training needs;

- Providing information to drive the plans for how you will use and implement TeamSTEPPS;

- Providing an evaluation of the effectiveness of TeamSTEPPS training;

- Assessing how TeamSTEPPS affects staff attitudes, resident perceptions, and organizational culture; and

- Demonstrating successes and areas for continued improvement, which is important for adapting implementation plans.

The measures we will cover in this module will help you assess your TeamSTEPPS implementation across the TeamSTEPPS phases.



**Slide**

# A MODEL OF TRAINING EVALUATION
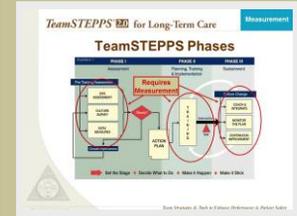


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**SAY:**

Kirkpatrick (1967) defined a multilevel model for evaluating the impact of training programs. This model continues to be widely used and regarded as a practical approach to training evaluation. When determining the effectiveness of any training intervention, Kirkpatrick advocated examining four different outcomes of training:

1. <u>Level I – Reactions</u> – Reactions are defined as participants' perceptions of the training. There are two types: (1) *affective* reactions, which are related to whether participants "liked" the training; and (2) *instrumentality* reactions, which are related to whether participants found the training "useful."

2. <u>Level II – Learning</u> – Learning is defined at three levels: (1) attitudes (feel), (2) knowledge (know), and (3) skills (do). Regarding attitudes, the basic question to be answered is, "Do participants feel differently as a result of training?" Regarding knowledge, the basic question to be answered is, "Do participants know something new as a result of training?" Regarding skills, the question is, "Can participants do something differently/new as a result of training?"

3. <u>Level III – Behavior</u> – Behavior is defined as to whether the new attitudes, knowledge, and/or skills are transferred to the job. In other words, it measures whether participants use what they learned in training on the job and whether that produces improved job performance.

4. <u>Level IV – Results</u> – Results are defined as organizational benefits that are produced from training. In the case of TeamSTEPPS, results include resident outcomes, such as the number of pressure ulcers and resident perceptions of care, and clinical process outcomes, such as the number of structured handoffs used and timeliness of medication administration. The types of results depend on what the TeamSTEPPS intervention targeted.

# AVAILABLE MEASURES

**SAY:**

TeamSTEPPS provides a number of useful measures for evaluating the impact of TeamSTEPPS. These measures are aligned with the Kirkpatrick model of training evaluation.

- **Reactions** - TeamSTEPPS for Long-Term Care Course Evaluation Form.

- **Learning** – TeamSTEPPS Teamwork Attitudes Questionnaire (T-TAQ) for Long-Term Care (Attitudes), TeamSTEPPS Learning Benchmarks for Long-Term Care (Knowledge), Team Performance Observation Tool for Long-Term Care (Skills), and TeamSTEPPS Teamwork Perceptions Questionnaire (T-TPQ) for Long-Term Care (Skills).

- **Behavior** - Team Performance Observation Tool for Long-Term Care, TeamSTEPPS Teamwork Perceptions Questionnaire (T-TPQ) for Long-Term Care, and AHRQ Nursing Home Survey on Patient Safety Culture tools.

- **Results** – Resident outcomes and clinical process measures, including the AHRQ Nursing Home Survey on Patient Safety Culture tools and AHRQ Patient Safety Indicators.

We will review these measures in more detail and provide information about where to access them.

# REACTIONS: TEAMSTEPPS COURSE EVALUATION FORM
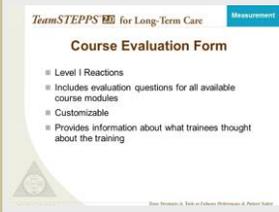
**Slide**

**SAY:**

Participant reactions tell you whether participants liked the course, the facilities, and the instructor, among other things. These types of reactions are referred to as *affective reactions*. In addition, participant reactions can tell you whether participants found TeamSTEPPS useful and if they believe they can apply the information they have learned in their units, departments, or work areas. These types of reactions are referred to as *instrumentality reactions*. Research has shown that participants who find training useful and report that they will use it on their jobs are more likely to do so. Participant reactions also provide information regarding:

- What participants will say about the course to others who may attend in the future; and

- Where the course could be improved in terms of what is taught and how it's taught.

If you plan to use a course evaluation form for continuing education credit purposes, please check with your continuing education provider to ensure that the form meets the specific requirements of the respective accreditation organization.

A customizable TeamSTEPPS for Long-Term Care Course Evaluation Form for assessing participant reactions can be found with the course materials at https://www.ahrq.gov/teamstepps/longtermcare/index.html. This form captures both affective and instrumentality reactions.

# LEARNING: TEAMSTEPPS TEAMWORK ATTITUDES QUESTIONNAIRE (T-TAQ)
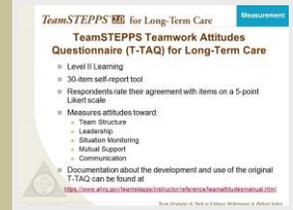
**Slide**

**SAY:**

As noted, the evaluation of learning accomplished through training can be in the form of assessing attitudes, knowledge, and skills.

One indication that training is effective is that participants' attitudes about the importance of teamwork change as a result of attending TeamSTEPPS training. To identify changes in attitudes, participant attitudes should be measured both before and after TeamSTEPPS training, with the expectation that participants' scores will be higher after training. This would be an indication of improved attitudes toward teamwork as a result of TeamSTEPPS training.

The TeamSTEPPS Teamwork Attitudes Questionnaire, or T-TAQ, for Long-Term Care was designed to measure participant attitudes about the teamwork skills and behaviors taught in TeamSTEPPS. The long-term care instrument is a customized version of the original T-TAQ, which has been tested on numerous health care professionals. A guide documenting the original T-TAQ's development, use, and interpretation can be found online at: https://www.ahrq.gov/teamstepps/instructor/reference/teamattitudesmanual.html.

It is very **important** to note that, with the explosion of the resident safety movement and growing acceptance of the importance of teamwork in the delivery of safe care, health care professionals are likely to report positive attitudes toward teamwork regardless of having attended TeamSTEPPS training. Therefore, TeamSTEPPS recommends that you do not rely solely on measuring participant attitudes as an indication of learning.

# LEARNING: TEAMSTEPPS LEARNING BENCHMARKS
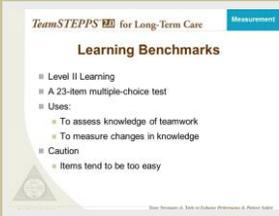


**Slide**

**SAY:**

Another indication that training was effective is that participants know something new after participating in training. Similar to measuring attitude changes, measurement of participant knowledge would take place both before and after TeamSTEPPS training, using a knowledge test. The expectation would be that participants would score higher on the test after training.

The Learning Benchmarks for Long-Term Care knowledge test can be used for this purpose. The test is a short, multiple choice assessment that measures participant knowledge of the teamwork principles taught in TeamSTEPPS.

It is **important** to note that, just as attitude measures pose challenges, so do knowledge measures. TeamSTEPPS has found that despite careful construction of the Learning Benchmarks, these items tend to be easy, and individuals are often able to answer the items correctly without participating in TeamSTEPPS training.

# LEARNING: TEAM PERFORMANCE OBSERVATION TOOL

**SAY:**

The third indication that training was effective in terms of participant learning is that participants can do something new after participating in training. Similar to measuring attitudes and knowledge, you would expect that if you observed participant behavior in a simulation after TeamSTEPPS training, participants would behave quite differently. For example, if you trained and implemented SBAR and check-back as part of the medication ordering procedure, you might test the resident care team by developing a simulation to determine if learning occurred. Observing the nursing staff placing orders to the pharmacy or reconciling resident medication orders with the pharmacy on the job could also be an indication of learning; but under the Kirkpatrick hierarchy this is considered a measure of behavior—learning transferred to the actual job.

The Team Performance Observation Tool for Long-Term Care is a customizable tool that is available with the course materials at https://www.ahrq.gov/teamstepps/longtermcare/sitetools/tools.html.

This tool can be used as a guide when observing team performance.

The Team Performance Observation Tool for Long-Term Care included in TeamSTEPPS is generic, meaning it is not designed to focus on any particular unit, department, or work area. Therefore, TeamSTEPPS recommends that individuals:

• Customize the observation form to the unit, department, or work area of interest.

• Practice using the tool prior to conducting observations. It is important that anyone acting as an observer use the tool in the same way so observations are accurate.

• Revise the observation tool as necessary so that information is clear to all observers.
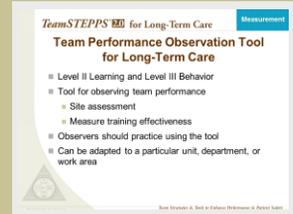


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# LEARNING: TEAMSTEPPS TEAMWORK PERCEPTIONS QUESTIONNAIRE (T-TPQ)
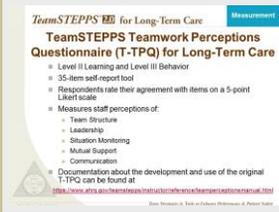


**Slide**

**SAY:**

The TeamSTEPPS Teamwork Perceptions Questionnaire, or T-TPQ, for Long-Term Care can also be used to measure the learning of skills by training participants. The long-term care instrument is a customized version of the original T-TPQ, which has been tested on numerous health care professionals.

The T-TPQ is completed by individual members of the team. In this measure, individuals report their perceptions regarding the effectiveness of the teamwork within the unit, department, or work area in which they work. A copy of the T-TPQ for Long-Term Care is available with the course materials at https://www.ahrq.gov/teamstepps/longtermcare/sitetools/tools.html.

A detailed guide for using and interpreting the original T-TPQ is available on AHRQ's website at https://www.ahrq.gov/teamstepps/instructor/reference/teamperceptions manual.html.

# BEHAVIOR

**SAY:**

It is important to measure whether the information learned during training is transferred to the job. Two important environmental factors for producing transfer are:

1. Whether there is an opportunity to use the new TeamSTEPPS tools or strategies on the job; and

2. Whether use of the TeamSTEPPS tools and strategies is valued and reinforced.

Let's consider an example.

***Example:***

As part of implementing TeamSTEPPS to improve teamwork within the nursing home, all nurses are trained on the use of SBAR for presenting resident information. However, physicians are not invited to the training and receive no information about the planned use of SBAR. Shortly after implementing the SBAR strategy, a nurse calls a resident's primary care physician about a change in the resident's health status. She begins to present the resident's situation and background, but before she can complete her SBAR report, the physician jumps in and says, "I'm not sure why you are presenting all of this background information; can you just tell me what is wrong with Mrs. Smith?"
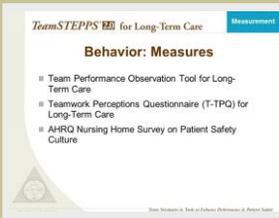
## 💬 DISCUSSION

• Was the use of SBAR valued and reinforced?

• What do you think the nurse should do?

• Will the nurse use SBAR in the future?

• What other factors can you think of that are important for ensuring that skills learned in TeamSTEPPS training transfer to the job?

  - Aligning training objectives with nursing home goals

  - Providing support for the training initiative

  - Ensuring that frontline care leaders are on board

  - Educating the residents' care providers about SBAR and its use within the nursing home

  - Using measurement to determine the effectiveness of the program in terms of whether skills are being used on the job

**Slide**

TeamSTEPPS for Long-Term Care | Measurement

Level III: Behavior

- Measure whether information learned during training is transferred to the job
- Two important factors in transfer are:
  - Whether there is an *opportunity to use* the new TeamSTEPPS tools or strategies on the job
  - Whether use of the TeamSTEPPS tools and strategies is *valued and reinforced*

# BEHAVIOR: MEASURES

**Slide**

**SAY:**

There are tools available for assessing the transfer of participants' learning to their jobs. These include:

• The Team Performance Observation Tool for Long-Term Care;

• The TeamSTEPPS Teamwork Perceptions Questionnaire (T-TPQ) for Long-Term Care; and

• AHRQ Nursing Home Survey on Patient Safety Culture.

We have already discussed the Team Performance Observation Tool and the T-TPQ, as these can also be used to measure the learning of new teamwork skills. The AHRQ Nursing Home Survey on Patient Safety Culture can be used to assess both behaviors and results. We will first discuss a few other results measures, and then focus our attention on a more detailed discussion of the surveys.

# RESULTS: MEASURES



**Slide**

**SAY:**

The final level of training evaluation in the Kirkpatrick hierarchy is results. As we discussed earlier, this level of evaluation provides an assessment of the organizational benefits produced from training.

It is important to note that this level of evaluation is difficult to assess, in that any number of organizational changes, initiatives, and/or interventions could contribute to organizational results. However, for evaluating TeamSTEPPS, selecting measures that align with the teamwork issue being addressed by TeamSTEPPS will help ensure that the results can be linked to the training intervention.

Results measures include:

- **Resident outcome measures**, such as pressure ulcers, falls, pain, measurable medication errors, and the like, as well as resident experience measures, such as the Consumer Assessment of Healthcare Providers and Systems (CAHPS) Nursing Home Surveys.

- **Clinical process measures**, such as length of resident wait time, medication administration delays, compliance with infection control practices, compliance with treatment protocols, and staff perceptions of safety as measured by the AHRQ Nursing Home Survey on Patient Safety Culture.

It should be noted that health care facilities already routinely collect many clinical quality and safety measures that can be used to measure organizational results. These include, for example, the CMS Quality Measures.

# NURSING HOME SURVEY ON PATIENT SAFETY CULTURE



**Slide**

**SAY:**

In response to nursing homes' interest in a survey that focuses on patient safety culture in their context, AHRQ sponsored the development of the Nursing Home Survey on Patient Safety Culture. This survey is designed specifically for nursing home providers and staff and asks for their opinions about the culture of patient safety and health care quality in their nursing homes. It is not designed for use in assisted living facilities, community care facilities, or independent living facilities.

Many nursing homes using the AHRQ Nursing Home Survey on Patient Safety Culture have expressed interest in comparing their results with other nursing homes. In response, AHRQ has established the Nursing Home Survey on Patient Safety Culture Comparative Database. This database is a central repository for survey data from nursing homes that have administered the AHRQ nursing home culture survey instrument.

The survey is available on the AHRQ Web site at: http://www.ahrq.gov/professionals/quality-patient-safety/patientsafetyculture/nursing-home/index.html.

💬 **DISCUSSION**

• Have any of you used the Nursing Home Survey on Patient Safety Culture?

• Can you describe how you used the survey results?

• Do you have any lessons learned you would like to share?

Continued…

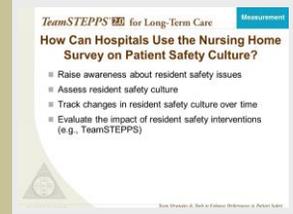# NURSING HOME SURVEY ON PATIENT SAFETY CULTURE (Continued)



**Slide**

**SAY:**

The Nursing Home Survey on Patient Safety Culture has a number of uses, including:

- Raising awareness about nursing home safety issues;

- Assessing resident safety culture;

- Tracking changes in resident safety culture over time; and

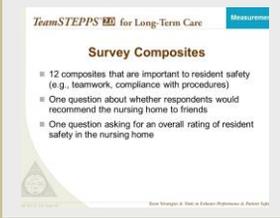- Evaluating the impact of resident safety interventions.

The nursing home survey can be used to assess whether TeamSTEPPS has a positive impact on the nursing home's resident safety culture. If TeamSTEPPS is effective, survey scores should increase after TeamSTEPPS tools and strategies have been implemented. Such a result would be considered an organizational outcome or result of the training (i.e., Level IV in the Kirkpatrick hierarchy).

Continued…

**Slide**

**SAY:**

The nursing home survey includes 42 items that represent 12 composites that are important to resident safety, such as teamwork, compliance with procedures, handoffs, and communication openness.

In addition, the survey asks whether respondents would tell their friends this is a safe nursing home and asks for an overall rating of resident safety in the nursing home.

The survey takes approximately 10-15 minutes to complete. Most of the items use Agree/Disagree or Never/Always response categories, making them easy to answer. Room for written comments is provided at the end of the survey.

# NURSING HOME SURVEY ON PATIENT SAFETY CULTURE (Continued)

**SAY:**

The Nursing Home Survey on Patient Safety Culture has an accompanying toolkit that contains the following materials:
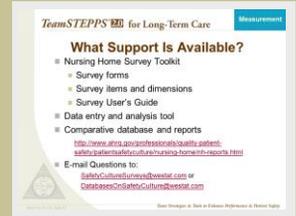
- Survey forms;

- Survey items and dimensions; and

- A *Survey User's Guide* that provides step-by-step instructions on how to select a sample, administer the survey, and analyze and report results.

In addition, there is a *data entry and analysis tool* that works with Microsoft® Excel and makes it easy to input your individual-level data from the survey. The tool then automatically creates tables and graphs to display your survey results.

*To request the tool, email:*
DatabasesOnSafetyCulture@westat.com.

If you have questions about the Surveys on Patient Safety Culture or need technical assistance, you can request help by email to SafetyCultureSurveys@westat.com *or* DatabasesOnSafetyCulture@westat.com.



**Slide**

# EXERCISE: EVALUATING TEAMSTEPPS

**Slide**

**Slide**

🕐 **TIME:**

10 minutes

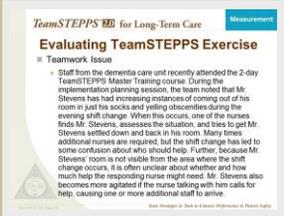📄 **MATERIALS:**

• Evaluating TeamSTEPPS Worksheet

**SAY:**

Now that we have reviewed the four levels of the Kirkpatrick model of training evaluation and discussed available measures for each, we will use a scenario to apply what you've learned. Our scenario follows:

> Staff from the dementia care unit recently attended the 2-day TeamSTEPPS Master Training course. During the implementation planning session, the team noted that Mr. Stevens has had increasing instances of coming out of his room in just his socks and yelling obscenities during the evening shift change. When this occurs, one of the nurses finds Mr. Stevens, assesses the situation, and tries to get Mr. Stevens settled down and back in his room. Many times additional nurses are required, but the shift change has led to some confusion about who should help. Further, because Mr. Stevens' room is not visible from the area where the shift change occurs, it is often unclear about whether the responding nurse needs help and how much. Mr. Stevens also becomes more agitated if the nurse talking with him calls for help, causing one or more additional staff to arrive.

> To help keep Mr. Stevens calm while ensuring that the responding nurse has support when needed, the team decides to use CUS as a signal to call for additional help with Mr. Stevens. Because they can hear what is going on in his room from the area where the evening shift change briefing occurs, they agree that if they hear a staff person using CUS with Mr. Stevens, it will result in two additional staff going to provide assistance with Mr. Stevens. They also agree that prior to conducting the shift change briefing, the staff will discuss Mr. Stevens, identify who will initially respond to any disruption, and determine who will provide additional assistance if needed.

Break into small groups and identify (1) one or two measures you can use to assess whether your TeamSTEPPS intervention, CUS, transfers to the dementia unit; and (2) one or two measures to determine if the use of CUS affects resident outcomes.
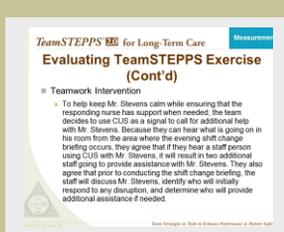
# EXERCISE: EVALUATING TEAMSTEPPS (Continued)

**DO:**

After a few minutes, reconvene the participants and ask some groups to report on their identified measures, using the questions presented on the following page.

**DISCUSSION:**

- Which measure or measures did you identify for assessing whether instruction about CUS transfers to the dementia unit's work environment?

- Why did you choose the identified measures?

- What organizational barriers might interfere with successful training transfer and how can these barriers be addressed?

- Which measure or measures did you identify for determining whether CUS affects resident outcomes?

- Why did you choose the identified measures?