SPECTRUM HEALTH

MEASURING CHANGE IN CME

CME Office

2017

New requirements from the Accreditation Council of Continuing Medical Education (ACCME) are to obtain and analyze changes in learners' • competence (knowledge & abilities), • performance (what is done in practice), and/or • patient outcomes, resulting from participation in individual CME-accredited educational activities. To achieve this, the Spectrum Health CME Committee has outlined the models below, in accordance with the Accreditation Council for CME (ACCME) Accreditation Criteria. This booklet also contains examples of change measurement tools/evaluations.

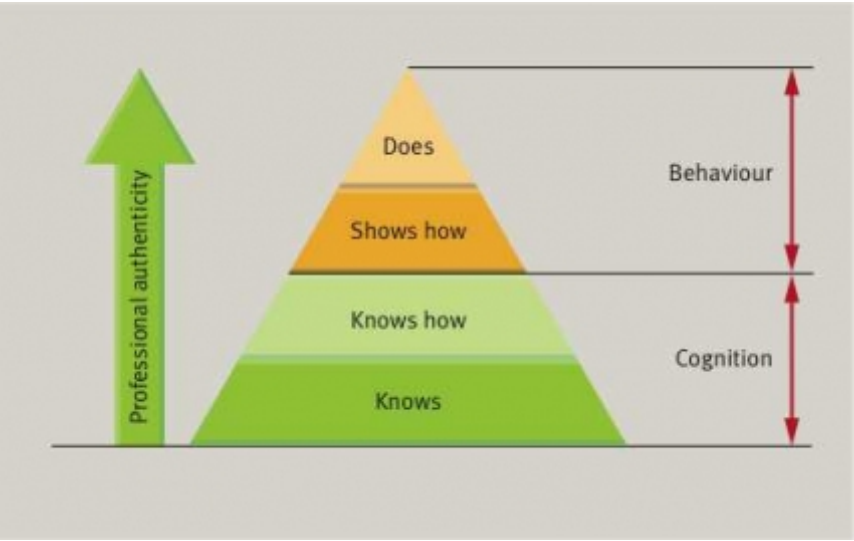
It is the expectation that each activity organizer and physician responsible will develop measurable objectives for their educational activities. In addition, you will need to measure the change using at least one data source from Levels 3 – 7 from the chart on page 3. You may use Level 2 if you are only assessing a change in attitude or perception and add appropriate questions to the immediate post-activity survey. You must then provide the data about reflecting your change measurement to the CME Office.

Models:

Donald E. Moore Jr., PhD from Vanderbilt University School of Medicine has outlined a framework for the assessment of continuous learning and traditionally this has been presented as a pyramid consisting of 6 different levels:

1. Participation
2. Satisfaction
3. Learning
4. Performance
5. Patient health
6. Population health

Miller's Pyramid of Assessment:



The CME committee recognizes that flexibility is needed to accommodate the diversity of CME planning groups, organizers and joint/direct sponsors in exploring outcomes of their learning activities. Additional strategies beyond those listed here for compiling and analyzing changes in learner competence, performance, or patient outcomes are encouraged.

When you create objectives for the activity, have the end in mind. How are you going to measure change that has occurred because of this activity?

The chart on the following page outlines how you can measure change, depending on what your objectives are. For example, if your objectives are to influence medical knowledge (Level 3 A or B) then you could use a short pre and post- test for your activity to measure change. If you want to improve some type of specific patient outcome (Level 6) then you could use hospital quality data to measure your outcome.

Pages 4 through 12 offer you examples of each type of tool you could use to measure change.

Methods for Measuring Outcomes

Moore's Expanded Outcomes Framework for Assessing Learners and Evaluating Instructional Activities

Moore's Outcomes Framework	Miller's Framework	Description	Sources of Data
Level 1 Participation		Number of learners who participate in the educational activity	*Attendance records *Online database
Level 2 Participant Satisfaction		The degree to which expectations of participants were met regarding the setting and delivery of the educational activity	Subjective measurement: Post activity evaluation
Level 3A Learning: Declarative Knowledge (includes Medical Knowledge Competence)	Knows	The degree to which participants state what the educational activity intended them to know	Objective measurement: *Pre & Post tests of knowledge
Level 3B Learning: Procedural Knowledge (includes Medical Knowledge Competence)	Knows How	The degree to which participants state ***how*** to do what the educational activity intended them to know how to do	Objective measurement: *Pre & Post tests of knowledge
Level 4 Competence (Clinical)	Show How	The degree to which participants ***show*** in an educational setting how to do what the educational activity intended them to be able to do	**Objective measurement:** Observation in educational setting (e.g. checklists, assessment) **Subjective measurement:** Self- reported competence
Level 5 Performance	Does	The degree to which participants do what the educational activity intended them to be able to do in their practice	**Objective measurement:** Observed performance in clinical setting, patient records, administrative data bases, chart audits **Subjective measurement:** Self- reported performance
Level 6 Patient Health Outcomes		The degree to which the health status of patients improves due to changes in practice behaviors of participants as a result of educational activity	**Objective measurement:** Administrative Data Bases (e.g. Quality indicators, Joint Commission Core Measures, Chart audits) **Subjective measurement:** Patient Surveys
Level 7 Community Health		The degree to which the health status of a community of patients changes due to changes in the practice behavior of participants	**Objective measurement:** Epidemiological data and reports **Subjective measurement:** Community Self Reports

Example of Change Measurement Tools/Evaluation

Level 2 – Participant Satisfaction

Immediate Post Activity Evaluation:

Please answer the following:							
The speaker's affiliations were disclosed, or it was disclosed that the speaker has no affiliations with commercial companies	Yes		No				
Please rate the following:							
Organization of material	Excellent		Good		Fair		Poor
Quality of Instruction	Excellent		Good		Fair		Poor
Practical value of material	Excellent		Good		Fair		Poor
This activity met its stated educational objectives	Excellent		Good		Fair		Poor
On a scale of 1 to 5, with 5 being the highest rating, please circle the number that best describes your reaction:							
I would rate the instruction over all as…	Low	1	2	3	4	5	High
I would rate the activity over all as…	Low	1	2	3	4	5	High

If your objective is to change the participants' attitude or perception based on the presentation, you could add questions to the immediate post activity evaluation asking a question(s) about attitude/perception change.

Example of Change Measurement Tools/Evaluations

Level 3A –Declarative Knowledge

Knows

OBJECTIVE MEASUREMENT

Pre & Post Tests: Short test of the same questions given before and after the educational activity and measuring the difference.

Example Multiple Choice Question:

The physiologic hypervolemia of pregnancy has clinical significance in the management of the severely injured, gravid woman by:

a. Reducing the need for blood transfusion
b. Increasing the risk of pulmonary edema
c. Complicating the management of closed head injury
d. Reducing the volume of crystalloid required for resuscitation
e. Increasing the volume of blood loss to produce maternal hypotension

SUBJECTIVE MEASUREMENT

For each objective, please rate your knowledge level before today's session and after today's session on a scale of 1–5.

Objectives	Knowledge **BEFORE** Today's Session					Knowledge **AFTER** Today's Session				
	No Knowledge	Very Limited Knowledge	Some Knowledge	Moderate Knowledge	Significant Knowledge	No Knowledge	Very Limited Knowledge	Some Knowledge	Moderate Knowledge	Significant Knowledge
Able to work as a leader or team member in common ACLS scenarios	1	2	3	4	5	1	2	3	4	5
Identify EKG rhythms quickly	1	2	3	4	5	1	2	3	4	5
Demonstrate effective team dynamics	1	2	3	4	5	1	2	3	4	5

Example of Change Measurement Tools/Evaluation

Level 3B - Procedural Knowledge

Knows How

Pre & Post Tests: Short test of the same questions given before and after the educational activity and measuring the difference.

Sample multiple-choice question to assess "knows how":

1. What is the appropriate fluid bolus to administer for a child with hypovolemic shock with adequate myocardial function?

A. 10 mL/kg normal saline
B. 20 mL/kg of 5% dextrose and 0.2% sodium chloride
C. 20 mL/kg normal saline
D. 10 mL/kg Lactated Ringers

Example of Change Measurement Tools/Evaluation

Level 4 – Competence

Shows How

Example Checklist (only partial list shown):

SPECTRUM HEALTH

Adult Indwelling Urinary Bladder Catheterization Competency Checklist					
Name:				**Institution: (**Check one)	
Title:				☐ 1. GRMEP	
Evaluator:				☐ 2. GVSU	
Date:		Time:		☐ 3. MSU CHM	
		Completed on: ☐ Male ☐ Female		☐ 4. Spectrum Health	
		Key: * Indicates essential steps that must be completed ** Indicates sterile technique required	Done	Done incorrectly	Not done
	1	Assess for presence of order			
*	2	Perform hand hygiene			
*	3	Don clean gloves			
*	4	Identify patient using two patient identifier			
*	5	Check for latex and betadine allergy			
*	6	Explain procedure			
	7	Ensure patient privacy			
	8	Position patient			
	9	Place kit on clean table, between the legs or at the foot of the bed as appropriate			
*	10	Using proper aseptic technique open 3 corners of outer kit			
	11	Place underpad beneath patient, shiny side down			
*	12	Complete perineal hygiene using provided packet of castile soap wipes			
*	13	Remove gloves and perform hand hygiene			
*	14	Don sterile gloves**			
	15	Position fenestrated drape on patient keeping gloves sterile**			
*	16	Prepare the supplies using proper sterile technique**			
*	a	Deposit lubricant into tray top compartment			
*	b	Attach the water filled syringe to the inflation port. Note: It is not necessary to pre-test the catheter balloon			
*	c	Remove catheter from wrap and lubricate catheter (1-2" for female, 5-7" for male)			

Example of Change Measurement Tools/Evaluation

Level 5 – Performance

Does

Observation Tool:

TeamSTEPPS™

Team Performance Observation Tool

Date:
Unit:
Team:

Rating Scale 1 = Very Poor **(circle 1)** 2 = Poor *Please comment* 3 = Acceptable *if 1 or 2* 4 = Good **Shift**: 5 = Excellent

1. Team Structure	**Rating**
a. Assembles a team	
b. Establishes a leader	
c. Identifies team goals and vision	
d. Assigns roles and responsibilities	
e. Holds team members accountable	
f. Actively shares information among team members	
Comments: **Overall Rating – Team Structure**	
2. Leadership	**Rating**
a. Utilizes resources efficiently to maximize team performance	
b. Balances workload within the team	
c. Delegates tasks or assignments, as appropriate	
d. Conducts briefs, huddles, and debriefs	
e. Empowers team members to speak freely and ask questions	
Comments: **Overall Rating – Leadership**	
3. Situation Monitoring	**Rating**
a. Includes patient/family in communication	
b. Cross monitors fellow team members	
c. Applies the STEP process when monitoring the situation	
d. Fosters communication to ensure team members have a shared mental model	
Comments: **Overall Rating – Situation Monitoring**	
4. Mutual Support	**Rating**
a. Provides task-related support	
b. Provides timely and constructive feedback to team members	
c. Effectively advocates for the patient	
d. Uses the Two-Challenge rule, CUS, and DESC script to resolve conflict	
e. Collaborates with team members	
Comments: **Overall Rating – Mutual Support**	
5. Communication	**Rating**
a. Coaching feedback routinely provided to team members, when appropriate	
b. Provides brief, clear, specific and timely information to team members	
c. Seeks information from all available sources	
d. Verifies information that is communicated	
e. Uses SBAR, call-outs, check-backs and handoff techniques to communicate effectively with team members	
Comments: **Overall Rating – Communication**	
TEAM PERFORMANCE RATING	

Commitment to Change
Post-Activity Survey ("fax-back" survey)

The GRMEP immediate post activity evaluation asks the participant if he/she will make a change because of the session (Level 4). Jocelyn Lockyer and her associates have found that a commitment to change (CTC) predicts actual change in practice.
Post activity surveys go further in measuring change by venturing into performance based change – the Level 5 outcome. For this change measurement, within one to three months of the CME activity, the activity organizer will fax or email the CME activity participants and ask them if they have fully implemented, partially implemented or were unable to implement the changes they intended to make.

The limitation of this data is that it is self-reported. However, in the absence of actual observation of a physician's performance in practice, this information serves as a surrogate marker that, according to Lockyer's research, is indicative of actual change.

Example of Change Measurement Tools/ Evaluation

Level 6 - Patient Health

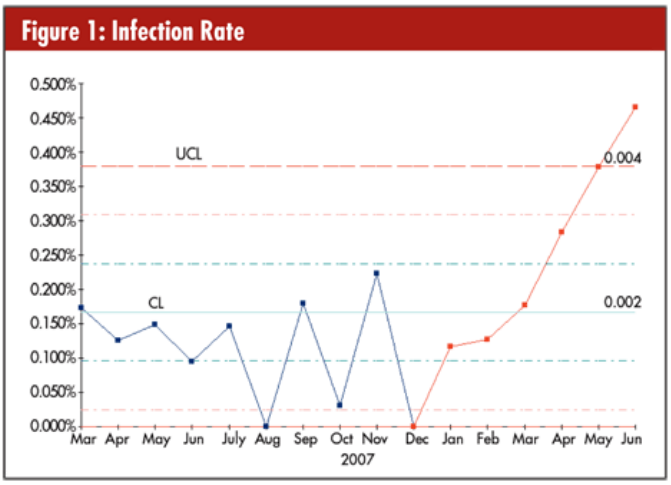
Objective Measurement:

Check with your Quality Improvement Department for Quality Indicators & Data

Run Chart:

Run charts are running records of processes over time. They are a simple analytical tool that may be used to understand variation in health care processes, such as hand washing. They may also be used to demonstrate changes in health, such as diabetes control for individual patients or for groups of patients.

Below is a sample run chart. The X-axis (horizontal) measures time or a sequence of when data are collected, and the Y axis (vertical) measures the item of interest, such as variations in infection rates.



Dashboard:

A Quality Dashboard is a graphic representation of essential information that highlights an organization's performance in a range of designated areas of quality. It visualizes performance data and critical quality parameters in a single screen or document to simplify quality management analysis and reporting.

100	100%	76%	100%	33%	100%	100%	100%	100%	96%
0	1.2	0.42	0.45		0	0.5	0.06	0.17	0.32
100%	89%	98%	99%		99%	94%	98%	95%	95%

Example of Change Measurement Tools/ Evaluation

Level 6 - Patient Health

Subjective Measurement- Patient Surveys:

Below is a sample of questions on the QualityMetric's SF-12v2™ Health Survey, used to measure functional health and well-being from the patient's point of view. For more information go to: https://www.amihealthy.com.

-SAMPLE-

This survey asks for your views about your health. This information will help you keep track of how you feel and how well you are able to do your usual activities. *Thank you for completing this survey!*

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1) In general, would you say your health is:

Excellent	Very Good	Good	Fair	Poor
O	O	O	O	O

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2) The following questions are about activates you might do during a typical day. Does your health now limit you in these activities? If so, how much?

	Yes Limited a lot	Yes limited a little	No, not limited at all
a. Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	O	O	O
b. Climbing several flights of stairs	O	O	O

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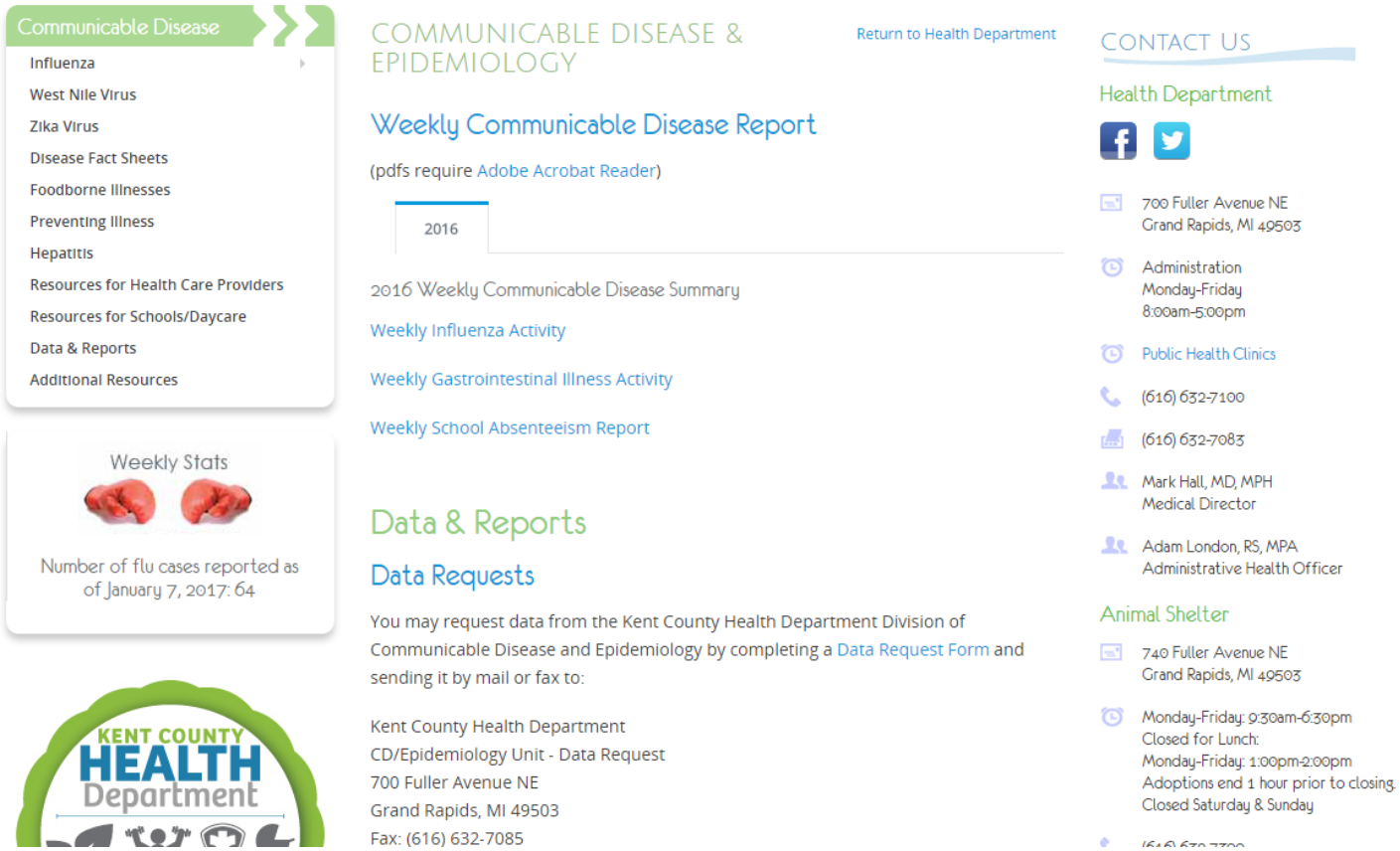
3) During the past 4 weeks, how much of the time have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
a. Accomplished less than you would like to	O	O	O	O	O
b. Were limited in the kind of work or other activities	O	O	O	O	O

Example of Change Measurement Tools/ Evaluation

Level 7 - Community Health

County Data Bases:



Resources:

https://www.accesskent.com/Health/CommDisease/reports.htm

https://www.ahrq.gov/teamstepps/longtermcare/sitetools/tmpot.html

http://www.bumc.bu.edu/cme/activity-planning/outcomes/

Lockyer, J, Fidler, H, Hogan, D, Pereles, L, Wright, B, Lebus, C, Gerritsen, C. Assessing Outcomes Through Congruence of Course Objectives in Reflective Work. *JCHEP* 2005; 25: 76-86

https://pedialink.aap.org/File%20Library/About%20AAP%20CME/AAP-CME-Outcomes-Project.pdf

https://www.yourcesource.org/files/content/docs/Outcomes_Measurement_Levels.pdf