

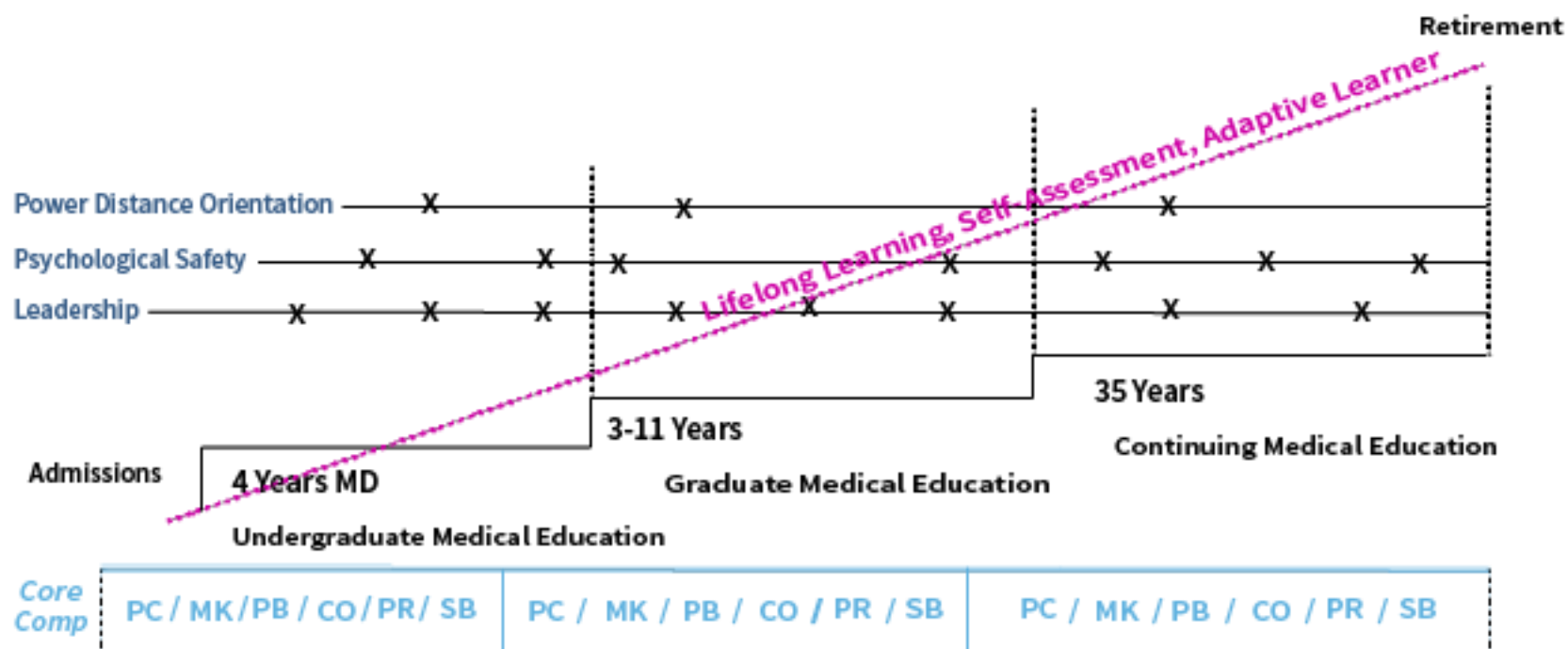
Who benefits from the CPD design?
How do they benefit?
What is the cost?

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Exploring a Business Case for High-Value
Continuing Professional Development

A Workshop of the Global Forum on Innovation in
Health Professional Education
April 6-7, 2017

$$\text{Value} = \frac{\text{Outcomes} + \text{Quality}}{\text{Cost}}$$

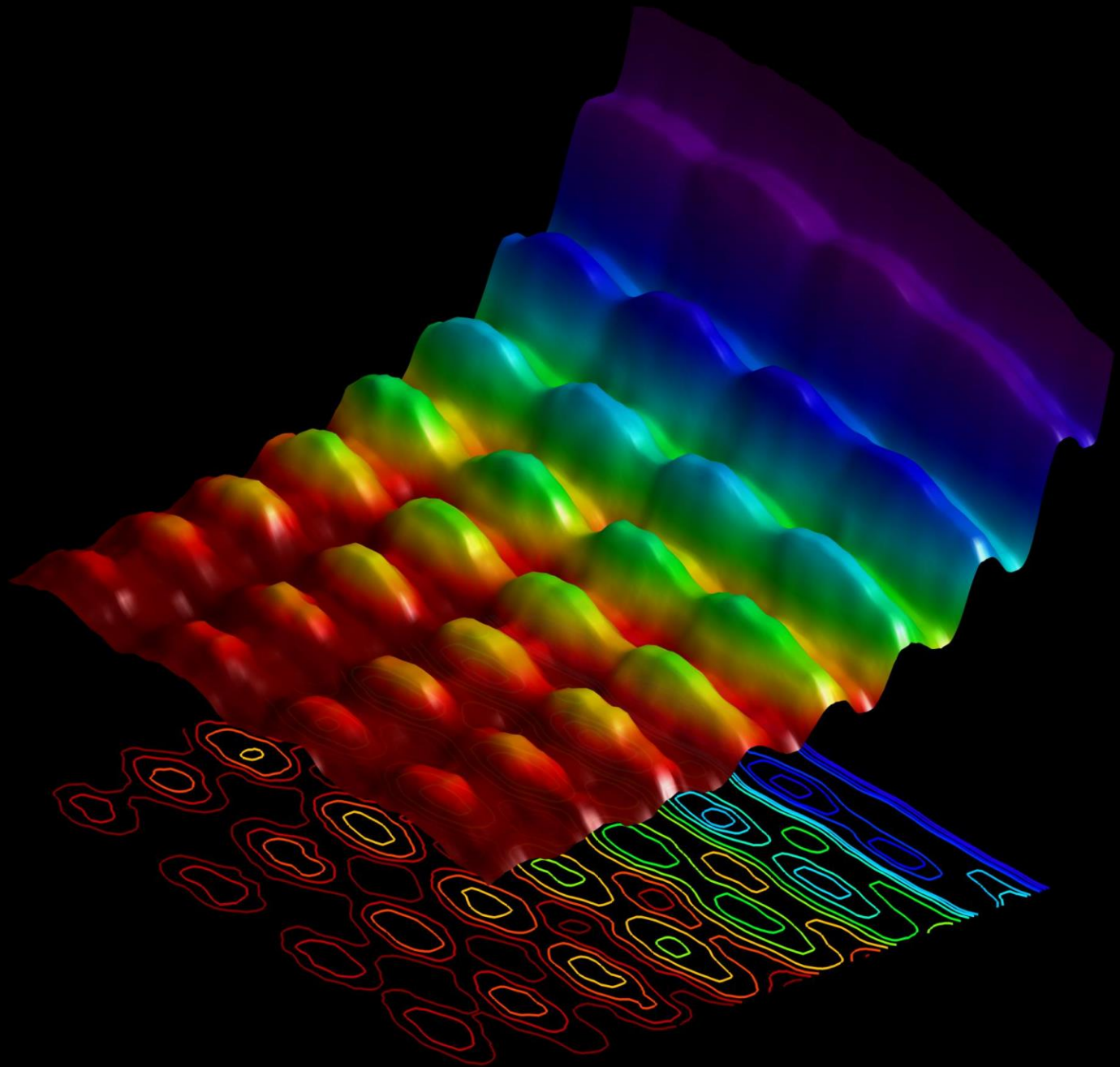


Multiple Perspectives on Evaluation Outcomes

Moore's Framework	Miller's Pyramid	Kirkpatrick's Model	Description	Sources of Data
Participation LEVEL 1			Number of learners who participate in the educational activity	Attendance records
Satisfaction LEVEL 2		Reaction	Degree to which expectations of participants were met regarding the setting and delivery of the educational activity	Questionnaires/surveys completed by attendees after an educational activity
Learning: Declarative Knowledge LEVEL 3A	Knows	Learning	The degree to which participants state <i>what</i> the educational activity intended them to know	Objective: Pre- and post-tests of knowledge Subjective: Self-report of knowledge gain
Learning: Procedural Knowledge LEVEL 3B	Knows how	Learning	The degree to which participants state <i>how</i> to do what the educational activity intended them to know how to do	Objective: Pre- and post-tests of knowledge Subjective: Self-reported gain in knowledge (e.g. reflective journal)
Learning: Dispositional Knowledge LEVEL 3C	Shows how	Behavior	The degree to which participants demonstrate <i>intentionality</i> , consistent with values, attitudes, and norms.	Objective: Valid/reliable tests of psychological constructs (goal orientation, self-efficacy) & EHR Subjective: Statement of Commitment to change
Competence LEVEL 4	Shows how	Behavior	The degree to which participants <i>show</i> in an educational setting <i>how</i> to do what the educational activity intended them to be able to do	Objective: Observation in educational setting (e.g. online peer assessment and EHR chart stimulated recall.) Subjective: Self-report of competence; intention to change
Performance LEVEL 5	Does	Results	The degree to which participants <i>do</i> what the educational activity intended them to be able to do in their practices	Objective: Observed performance in clinical setting; patient charts; administrative databases Subjective: Self-report of performance
Patient health LEVEL 6		Results	The degree to which the health status of patients improves due to changes in the practice behavior of participants	Objective: Health status measures recorded in patient charts or administrative databases Subjective: Patient self-report of health status
Community health LEVEL 7		Results	The degree to which the health status of a community of patients changes due to changes in the practice behavior of participants	Objective: Epidemiological data and reports Subjective: Community self-report

Intervention	Definition	
Educational Material	Printed/published & distributed recommendations for clinical care	
Conferences	Conferences, workshops, lectures outside practice setting	
Outreach Visits	Trained person meets with providers in practice setting to improve performance	
Local opinion leaders	Use educational influential nominated by colleagues	
Patient-mediated interventions	Physicians get information from patients who receive it from other sources	
Audit and feedback	Summary of clinical performance of health care over a specified period, with or without recommendations for clinical action; info obtained from medical records, databases, patients, or observation	
Reminders	Intervention (manual or computerized) prompting physicians to perform a clinical action (e.g. – reminders about screening/preventive services, enhanced laboratory reports, admin support like follow up appointment systems or stickers on charts)	
Multifaceted interventions	Select combinations of the previous 7 interventions such as outreach visits/clinical info from patients/computer reminders to counsel patients about specific disorders	
Interprofessional education	Two or more health and social care professionals learning interactively in educational sessions	
Interprofessional collaboration	Interventions in health care settings to improve care provided by 2 or more health professionals	

Intervention	Definition	Effectiveness for Behavior Change
Educational Material	Printed/published & distributed recommendations for clinical care	Little or no effect
Conferences	Conferences, workshops, lectures outside practice setting	Mixed effectiveness
Outreach Visits	Trained person meets with providers in practice setting to improve performance	Mixed effectiveness
Local opinion leaders	Use educational influential nominated by colleagues	Mixed effectiveness
Patient-mediated interventions	Physicians get information from patients who receive it from other sources	Mixed effectiveness
Audit and feedback	Summary of clinical performance of health care over a specified period, with or without recommendations for clinical action; info obtained from medical records, databases, patients, or observation	Mixed effectiveness
Reminders	Intervention (manual or computerized) prompting physicians to perform a clinical action (e.g. – reminders about screening/preventive services, enhanced laboratory reports, admin support like follow up appointment systems or stickers on charts)	More consistently effective
Multifaceted interventions	Select combinations of the previous 7 interventions such as outreach visits/clinical info from patients/computer reminders to counsel patients about specific disorders	More consistently effective
Interprofessional education	Two or more health and social care professionals learning interactively in educational sessions	Mixed effectiveness
Interprofessional collaboration	Interventions in health care settings to improve care provided by 2 or more health professionals	Mixed effectiveness



Example of Evaluation Level 2 – Satisfaction

Please check the ratings that best describe your reaction to this session:

A. Were the session objectives clear?

☐ No ☐ Somewhat ☐ Yes, definitely

B. Were the instructional techniques and materials helpful to your learning the material?

☐ No ☐ Somewhat ☐ Yes, definitely

On a scale of 1 to 5, with 5 being the highest rating, **please circle the number that best describe your reaction:**

C. I would rate the instruction overall as ...

Low	1	2	3	4	5	high
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D. I would rate the activity overall.....

Low	1	2	3	4	5	high
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Example of Evaluation Level 3A –Declarative Knowledge Knows

Needle puncture into the shoulder joint (gleno-humeral joint) from a posterior portal through the supraspinatus fossa would require penetration of these muscles:

- A. Trapezius and supraspinatus
- B. Supraspinatus and infraspinatus
- C. Supraspinatus and subscapularis
- D. Subscapularis and serratus anterior
- E. Supraspinatus and teres minor

BEFORE Knowledge or skill					ABILITY TO.....	AFTER Knowledge or skill				
Low		High				Low		High		
1	2	3	4	5	25.....effectively encourage my patients to obtain retinal exams.	1	2	3	4	5
1	2	3	4	5	26.....manage lipids in diabetics.	1	2	3	4	5
1	2	3	4	5	27.....effectively manage Hemoglobin A1c levels in my patients.	1	2	3	4	5
1	2	3	4	5	28.....interpret and manage microalbuminuria in my diabetic patients.	1	2	3	4	5
1	2	3	4	5	29.....maintain intensive glycaemia control of diabetic patients.	1	2	3	4	5
1	2	3	4	5	30.....select appropriate diabetic education tools and resources.	1	2	3	4	5

Example of Evaluation Level 3B – Procedural Knowledge
Knows How

A 75 year old man is hospitalized for a skin infection. Blood cultures demonstrate bacteremia. He receives intravenous antibiotic therapy for 4 days until afebrile and feeling better, and is discharged with oral antibiotics that he takes for one more week. Two weeks later he returns feeling poorly. He has back pain, night sweats, and low grade fevers of 100 to 101 degrees. Spine x-rays show multiple areas of bone destruction. Which of the following species were MOST LIKELY present in his first admission blood cultures?

- A. *Salmonella typhi*
- B. *Pseudomonas aeruginosa*
- C. *Enterococcus* species
- D. *Peptostreptococcus*
- E. *Staphylococcus aureus*

Example of Evaluation Level 3C– Dispositional Knowledge

(Commitment to Change)

Name of Attendee

As part of its ongoing system of program evaluation, the Continuing Medical Education program seeks information about physician's change and learning. Please complete the post conference session questionnaire. You are not required to participate. If you do, you should expect to receive a brief follow up questionnaire from the CME office in approximately 45 days. All your responses will be confidential. They will be reported only as cumulative statistics.

1. As a result of your participation in this session, will you make a change in your practice?

☐ Yes ☐ Uncertain (go to questions #2) ☐ No (go to question #3)

If yes, please specify one change you will make:

With 1 being the lowest level of commitment and 5 being the highest, please circle the number that most accurately indicates your commitment to successfully implement the change you specified.

Lowest					Highest
1	2	3	4	5	

2. If you indicated uncertainty about making a change, please describe what causes your uncertainty.

3. If you answered no to question # 1, please explain why you will make no change as a result of participating in this session.

Signature

Email address

Example of Evaluation Level 4 – Competence

Shows How

Megacode Assessment Form (Basic)

Learner: _____				
Date: _____				
Evaluator: _____				
Lessons Completed: 1-4 PASS _____ REEVALUATE _____				
Scoring: 0= Not Done 1 = Done incorrectly, incompletely, or out of order 2 = Done correctly in order ○ Student must perform each of the 5 BOLD items correctly ○ Scenario must include “Heart rate remains <100 beats per minute (BPM) and no chest movement” to allow demonstration of corrective action (Lesson 3) ○ Scenario must include “Heart rate <60 bpm despite positive-pressure ventilation” to demonstrate chest compressions. ○ Learner must demonstrate ventilation and chest compressions ○ Scenario with meconium-stained fluid is optional				
Lesson	Item	0	1	2
1	Checks Bag, Mask, and Oxygen Supply			
	Asks 4 Assessment Questions (Term? Meconium? Breathing? Tone?)			
2	(Optional) If meconium is present, determines if endotracheal suction is indicated			
	Positions head, suctions mouth then nose			
	Dries, removes wet towels, and repositions			
	Requests description of breathing, heart rate, and color			
3	Indicates need for positive-pressure ventilation (Apnea, heart rate<100 bpm, central cyanosis despite O ₂)			
	Provides positive-pressure ventilation correctly (40-60 breaths/min)			
	Checks for improvement in heart rate (<i>Instructor note: Heart rate does NOT improve.</i>)			
	Takes corrective action when heart rate not rising and chest not moving (Reapply mask, lift jaw forward, reposition head, check secretions, open mouth, increase pressure if necessary.)			
	Reevaluates heart rate (<i>Instructor note: Heart rate must remain <60 bpm.</i>)			
4	Identifies need to start chest compressions (Heart rate <60 bpm despite 30 seconds of effective positive-pressure ventilation)			
	Demonstrates correct compressions technique (Assess correct finger or thumb placement, compress one third of the anterior-posterior diameter of the chest.)			
	Demonstrate correct rate and coordination with ventilation (Ask student and assistant to switch positions.)			
Closure	Continues/discontinues positive-pressure ventilation appropriately or weans free-flow oxygen			
Student's Score Subtotals				
Performed all bold items correctly?		Y	N	Reevaluate
Student's Total Score (add subtotals) Maximum score: 30 pts with meconium 28 pts without meconium				
Minimum passing score: 24 pts with meconium 22 points without meconium		Pass Reevaluate		

Example of Evaluation Level 5 - Performance

Does



Team STEPPS

Team Performance Observation Tool

Date: _____
Unit: _____
Team: _____
Shift: _____

Rating Scale
(circle 1)
Please comment if 1 or 2

1 = Very Poor
2 = Poor
3 = Acceptable
4 = Good
5 = Excellent

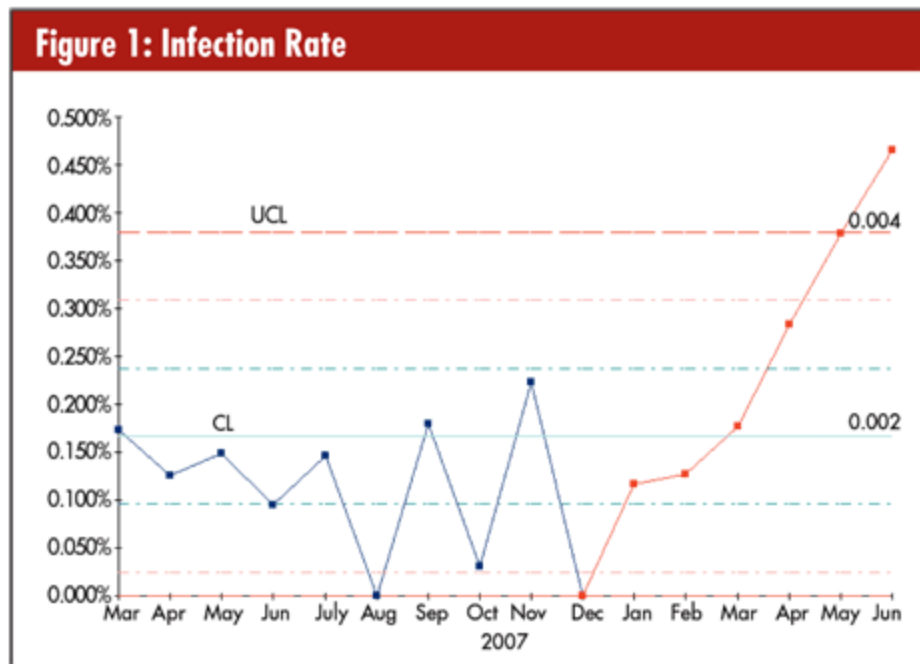
1. Team Structure	Rating
a. Assembles a team	
b. Establishes a leader	
c. Identifies team goals and vision	
d. Assigns roles and responsibilities	
f. Actively shares information among team members	
Comments:	
Overall Rating – Team Structure	
2. Leadership	Rating
a. utilizes resources efficiently to maximize 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	
5. Communication	Rating
a. Coaching feedback routinely provided to learn 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	

Example of Evaluation Level 6 - Patient Health

(Run Charts)

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, or 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.



Example of Evaluation Level 6 – Patient Health

SF-12v2 Health Survey

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>.

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!*

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

Excellent	Very Good	Good	Fair	Poor
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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

	Yes Limited a lot <input type="radio"/>	Yes limited a little <input type="radio"/>	No, not limited at all <input type="radio"/>
a. Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Climbing several flights of stairs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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 <input type="radio"/>	Most of the time <input type="radio"/>	Some of the time <input type="radio"/>	A little of the time <input type="radio"/>	None of the time <input type="radio"/>
a. Accomplished less than you would like to	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Were limited in the kind of work or other activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Example of Evaluation Level 7 – Community Health

2017 *Rankings* Virginia

For county rankings, health outcomes and health factors click on: <http://www.countyhealthrankings.org/app/virginia/2017/overview>


[Bath County information](#)

[Overview](#) [Rankings](#) [Measures](#) [Downloads](#) [Compare Counties](#)

VIRGINIA

Bath (BA) ☐ Show areas to explore ☐ Show areas of strength

County Demographics +

	Bath County	Trend ⓘ	Error Margin	Top U.S. Performers ⓘ	Virginia	Rank (of 133) ⓘ
Health Outcomes						79
Length of Life						91
Premature death	ⓘ 8,600		6,900-10,600	5,200	6,100	
Quality of Life						68
Poor or fair health	ⓘ 16%		15-16%	12%	15%	
Poor physical health days	ⓘ 3.7		3.5-4.0	3.0	3.2	
Poor mental health days	ⓘ 3.6		3.4-3.8	3.0	3.3	
Low birthweight	8%		4-11%	6%	8%	




Additional Health Outcomes (not included in overall ranking) +

Health Factors

40

Health Behaviors





39

Adult smoking	 17%		17-18%	14%	17%
Adult obesity	29%		22-36%	26%	27%
Food environment index	8.5			8.4	8.2
Physical inactivity	27%		19-35%	19%	21%
Access to exercise opportunities	100%			91%	81%
Excessive drinking	 15%		14-15%	12%	17%
Alcohol-impaired driving deaths	0%		0-26%	13%	31%
Sexually transmitted infections	216.6			145.5	436.4
Teen births	26		16-38	17	25

Additional Health Behaviors (not included in overall ranking) +

Clinical Care




88

Uninsured	14%		12-15%	8%	12%
Primary care physicians	2,280:1			1,040:1	1,320:1
Dentists	4,470:1			1,320:1	1,530:1
Mental health providers				360:1	730:1
Preventable hospital stays	83		66-101	36	44
Diabetes monitoring	91%		76-100%	91%	87%
Mammography screening	71%		53-88%	71%	64%

Additional Clinical Care (not included in overall ranking) +

Social & Economic Factors



42

High school graduation			95%	86%
Some college	54%		33-74%	72%
Unemployment	4.1%		3.3%	4.4%
Children in poverty	15%		11-19%	12%
Income inequality	4.5		1.4-7.6	3.7
Children in single-parent households	32%		3-61%	21%
Social associations	17.5		22.1	11.2
Violent crime	29		62	194
Injury deaths	100		64-150	53

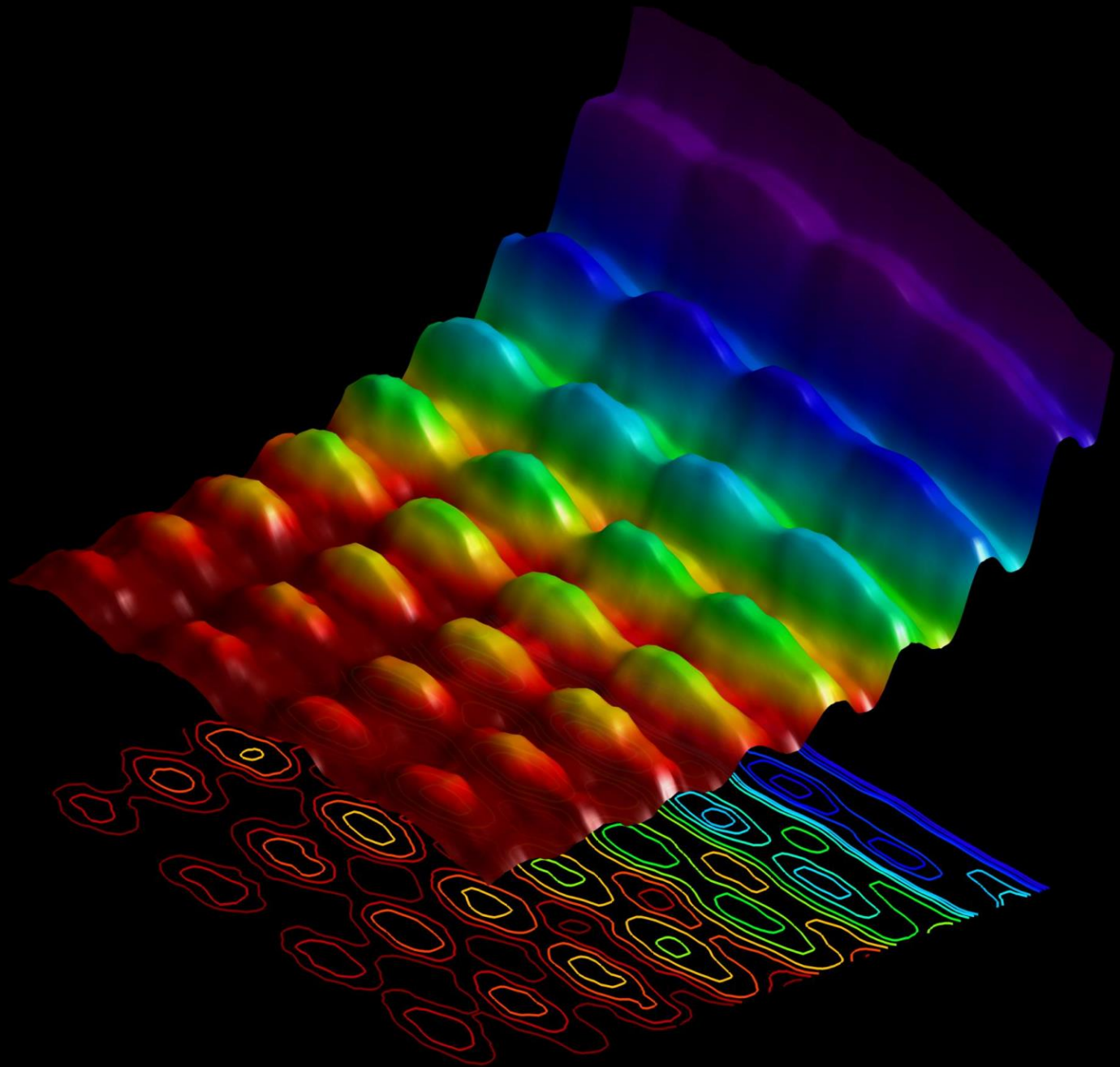
Additional Social & Economic Factors (not included in overall ranking) +

Physical Environment

5

Air pollution - particulate matter	 7.9		6.7	8.7
Drinking water violations	No			
Severe housing problems	11%		5-18%	9%
Driving alone to work	84%		75-94%	72%
Long commute - driving alone	40%		23-57%	15%

Note: Blank values reflect unreliable or missing data



45th Annual Symposium on Incision, Draining of a Skin Abscess

May 22-23, 2017

Richmond, VA

SUMMARY

REVENUE

Registration Fees	\$	34,575.00
Grants	\$	20,000.00
Exhibits	\$	10,000.00
Other	\$	-

Total Revenue:	\$	64,575.00
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EXPENSES

VCU CME Expenses	\$	17,500.00
Misc Expenses	\$	6,947.00
Catering & Room Rental Expenses	\$	16,000.00
Audio Visual Expenses	\$	3,500.00
Speaker Expenses	\$	7,540.00
Promotional Expenses	\$	9,740.00
Printing Expenses	\$	3,750.00

Total Expenses:	\$	64,977.00
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Profit/Loss	\$	(402.00)
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Three Examples of Cost Studies

Example #1

The measured costs of program implementation average \$200/physician participating in a live, face-to-face, four-hour workshop on incision, drainage of a skin abscess.

Example #2

Combines cost analysis with an assessment of the results of program implementation measured in non-monetary units, eg, an on-line program that costs \$200/physician and saves 4 hours of physician time spent learning incision skills compared to no training program at all. When comparing two programs, eg, live, face-to-face and an on-line program, a cost-effectiveness analysis might find that the on-line program costs \$200 more per physician, but saves 4 hours of physician time spent learning incision skills.

Example #3

Combine cost analysis with an assessment of the value of resources gained through the program measured in the same units as costs (typically money), eg, a cost of \$1000 to teach five physicians incision skills, which allows them to perform an additional 20 procedures annually, where each procedure can be billed at \$85/procedure generates a cost-benefit ratio of $20 \times 5 \times \$85 / \$1000 = 8.5$

Who benefits from the CPD design?

How do they benefit?

What is the cost?