

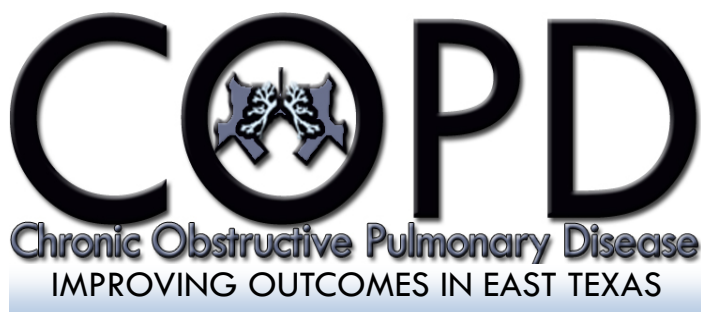
# *Final Outcomes Summary*

## *COPD: Improving Outcomes in East Texas*

A report on the assessment of impact of a CME initiative on clinician competence and performance, and patient and community health.

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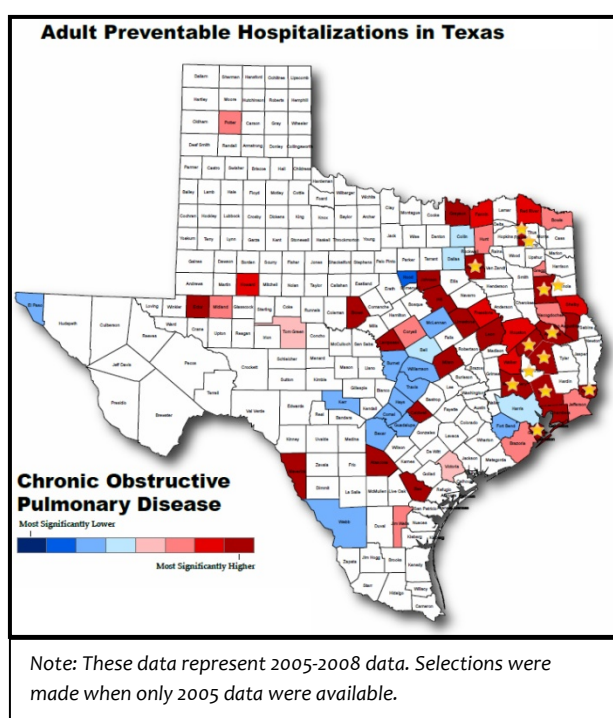
## Introduction

Chronic obstructive pulmonary disease (COPD) is responsible for one death every four minutes in the United States. While 12 million Americans have been diagnosed with the disease, it is estimated that at least that many have COPD but are undiagnosed. In as few as 13 years, COPD is expected to be the third most common cause of death in the country.

Primary care providers (PCPS) are the most likely clinicians to test for, diagnose and treat COPD. Regrettably, recent studies suggest that, in general, PCPs are doing a poor job with regards to COPD, leaving up to half of the cases undiagnosed (or misdiagnosed), exhibiting very poor rates of and quality of testing with spirometry and failing to treat the disease aggressively once identified.

In a particular area in Texas, this certainly appears to be the case. East Texas, a 50-county region roughly defined as north of Houston and east of Dallas, consistently demonstrates COPD hospital admission rates significantly higher than the state average. In fact, some of the highest COPD admission rates in Texas are found in East Texas, with only nine of these counties reporting rates lower than the state average of 166/100,000.

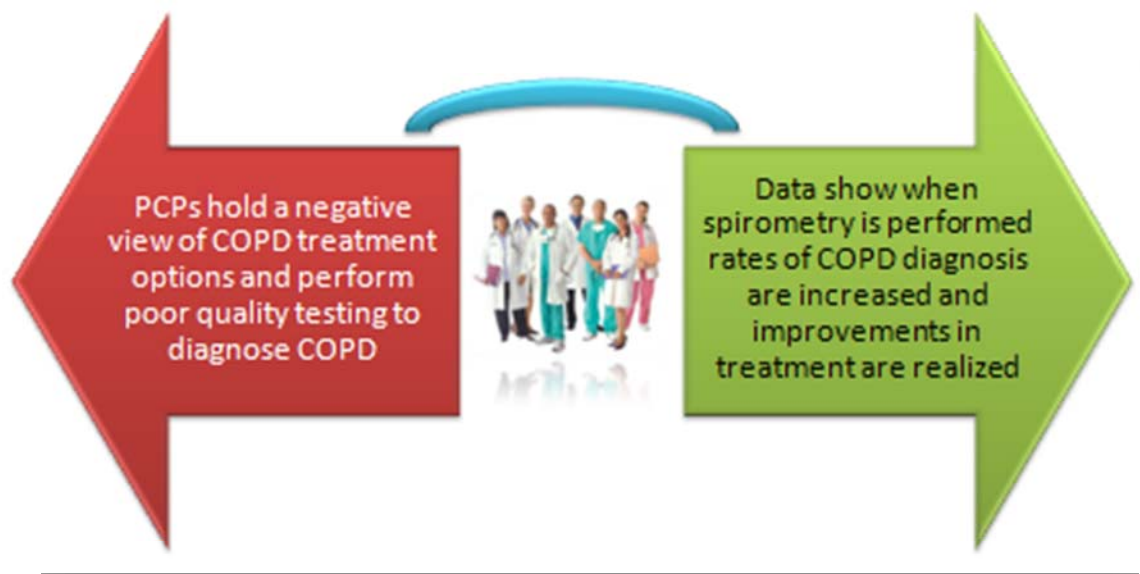
East Texas approximates the combined land area of Vermont, New Hampshire, Massachusetts, Rhode Island and Connecticut, or roughly twice the size of New Jersey. It has a population of more than 2.2 million. This region boasts several larger population centers (Tyler, Longview, Lufkin, Beaumont, Nacogdoches and others) and many small towns with fewer than 20,000 (fewer than 5,000 in some cases) people. The region relies heavily on the oil and gas, timber, agricultural and manufacturing/refining industries – all of which increase occupational exposure to volatile organic compounds (VOCs), a risk factor for respiratory disease. In general, these counties are medically-underserved, are considered “low education counties” and 15-20% of the population lives below the poverty line. However, many are top destination choices for retired or soon-to-be retired persons and have experienced significant population surges in all demographic subgroups over the past decade, especially those of Hispanic descent. Smoking is also more prevalent in these counties than in metropolitan areas in Texas. The current rate, 19.6%, is higher than the state average and fewer smoking restrictions in these areas increase the risk of family member and other secondary exposure.



A convergence of COPD risk factors – occupational exposure to VOCs, high rates of smoking and increasing aged and minority populations – in a region where most counties are federally designated medically underserved areas (about 1,800 family medicine/internal medicine physicians, NPs and PAs in the entire 50-county region) are the likely contributors to higher rates of COPD in East Texas.

## Project Summary

Late in 2007, the University of North Texas Health Science Center Office of Professional and Continuing Education received an independent educational grant from Boehringer Ingelheim and Pfizer to conduct a series of activities in 2008 focused on **improving COPD outcomes in East Texas**. The identified education gap is illustrated below:



The overall objectives of the project were to:

- Reduce the number of undiagnosed patients with COPD in East Texas by promoting more frequent and quality testing by primary care clinicians;
- Reduce the number of preventable hospitalizations related to COPD in East Texas;
- Improve the quality of life of patients with COPD by aggressively treating COPD and reducing environmental and behavioral risks to slow the disease progression; and
- Educate patients on risks of developing COPD and methods that could prevent it from developing.



Strategies employed included:

- Small-group dialogues in the “worst of the worst” counties in East Texas, where preventable hospitalizations due to COPD exceeded 301/100000.
- A sub-grant to a public health department or Area Health Education Center to serve as educational resources for local clinicians
- Follow-up CME-certified cases (enduring material) and additional material mailed to each primary care provider in East Texas. Some case content was developed from barriers and challenges discovered in the dialogues, and other cases were adapted from content developed by the CS2DAY consortium.

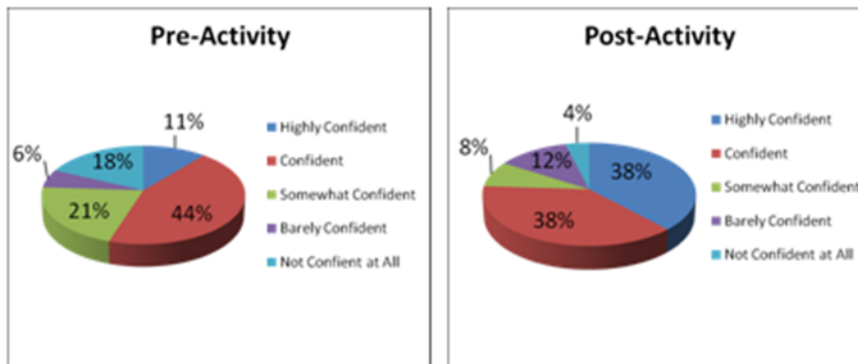
It was proposed that changes in competence, performance, patient health and community health (levels 4-7 on the 2009 Moore Scale, levels 3-6 on the 2003 Moore scale) be measured as a result of the activities.

## Participation Summary

Activity	Participation
Live activities	<b>244</b> 69% Physician 9 % NP 11% PA 11% Other
Enduring Cases	<b>321 Certificates</b> <b>(an estimated 3500 readers)</b> 54% Physician 19% NP 25% PA 2% Other
AHEC Sub Grant (Live, hands-on Spirometry Workshop)	<b>103</b> 81% Physician 4% PA 10% Nurse (NPs, RNs, LVNs) 5% Other

## Impact on Clinician Competence and Performance (Levels 4 and 5)

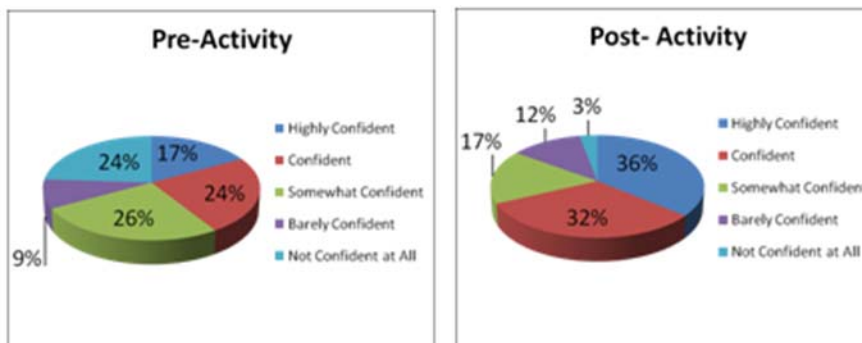
### Confidence in ability to aggressively treat and slow progression of COPD



Following the activity, 78% of participants were highly confident or confident in their ability to aggressively treat and slow the progression of COPD, an increase of 11% from pre-activity results from the same participants. Those who indicated highly-confident almost quadrupled post-activity.

**BOTTOM LINE:** Physicians who attended are more confident in their ability to effectively treat COPD.

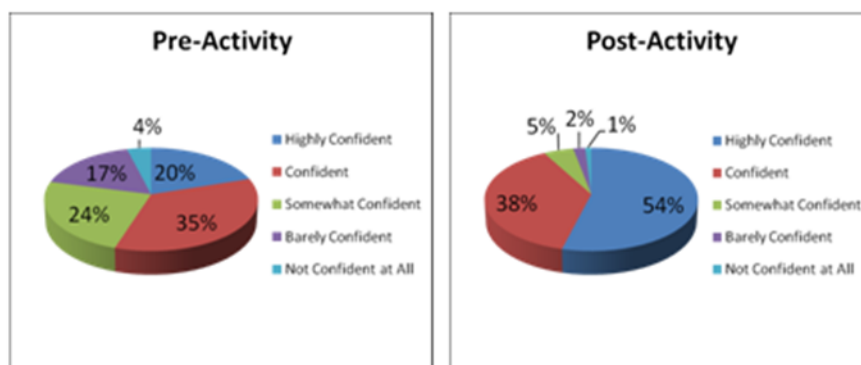
### Confidence in accurately interpreting spirometry results



Following the activity, 88% of participants were highly confident or confident in their ability to interpret spirometry results, an increase of 27% from pre-activity results from the same participants. Those who indicated highly-confident more than doubled post-activity.

**BOTTOM LINE:** More physicians are confident in their ability to accurately interpret spirometry results.

### Confidence in ability to correctly educate patients on COPD risk factors and strategies to prevention



Following the activity, 92% of participants were highly confident or confident in their ability to correctly educate patients on COPD risk factors and strategies to prevention, an increase of 33% from pre-activity results from the same participants. Those who indicated highly-confident almost tripled post-activity.

**BOTTOM LINE:** Physicians who attended feel they are better prepared to educate patients about risk factors and prevention of COPD.

In addition to the data above, 100% of participants indicated intent to:

- Increase screening for COPD using spirometry
- Increase ascertainment of smoking status in all patients
- Improve efforts to utilize patient education regarding smoking and other COPD risk factors
- To work with other local physicians and healthcare providers to eliminate local barriers to COPD diagnosis and treatment

Following each activity, 30-60 day post surveys were distributed to participants. **46% of the participants responded** to either the paper or online survey. Participants were asked “**What have you done differently in your practice as result of your participation in this activity?** (multiple selections possible).” The results were:

I do not plan to make any changes to my practice	10%
This activity confirmed my current practices	30%
I’ve increased efforts to screen for COPD using spirometry	30%
I’ve increased efforts to ascertain smoking status in all patients	53%
I’ve increased efforts to educate patients about smoking and other COPD risk factors	73%

## Summary of Level 4 and 5 Outcomes Assessment

- Almost one third of participants have increased the use of spirometry
- More than half of participants have increased smoking status ascertainment
- Almost three-quarters of participants have increased smoking cessation and other COPD risk factor education in their practices

## Impact on Patient Health Outcomes(Level 6)

Assessing an activity's impact on patient health outcomes is difficult, especially with no access to patient records. To overcome this challenge, University of North Texas Health Science Center analyzed ICD-9 (diagnosis) and class-level prescription data before and after the educational interventions. In increase in diagnostic codes after the activity compared to data collected before the activity (#490, 491, 492, 494, 496) is suggestive of **an overall increase in COPD diagnosis**. Below are the aggregated diagnostic data, showing a slight increase in diagnoses of COPD in target counties following educational interventions:

COPD ICD9 CODES											
International Classification of Diseases Ranking Report											
GROUP: A0001											
DECILE Calculated on Treatments of ICD Code(s) '490','491','492','494','496'											
For Population definition see Selection Summary											
	Decile 10	Decile 09	Decile 08	Decile 07	Decile 06	Decile 05	Decile 04	Decile 03	Decile 02	Decile 01	
	171 to 391	129 to 167	96 to 118	61 to 90	44 to 60	35 to 43	21 to 34	12 to 20	5 to 11	1 to 4	TOTAL
TOTAL	5	6	9	12	23	21	34	69	137	433	749
Treatments TOTAL	1112	913	939	915	1164	796	870	1056	1030	788	9583

Pre Activity

COPD ICD9 CODES											
International Classification of Diseases Ranking Report											
GROUP: A0001											
DECILE Calculated on Treatments of ICD Code(s) '490','491','492','494','496'											
For Population definition see Selection Summary											
	Decile 10	Decile 09	Decile 08	Decile 07	Decile 06	Decile 05	Decile 04	Decile 03	Decile 02	Decile 01	
	167 to 391	129 to 164	96 to 118	69 to 90	45 to 66	35 to 44	21 to 34	13 to 20	6 to 12	1 to 5	TOTAL
TOTAL	6	5	10	10	20	24	35	62	106	458	736
Treatments TOTAL	1275	736	1036	798	1075	930	906	982	928	929	9595

Post Activity



Similarly, UNTHSC examined class-level prescription data for the same time periods pre and post intervention. The classes analyzed were bronchodilators and general other proprietary smoking deterrents. The class-level data are listed below, showing a significant increase in utilization of guideline concordant treatment for COPD and smoking cessation strategies:

COPD RX DATA											
GROUP: A0001											
DECILE Calculated on Prescriptions of BRONCHODILATORS, GENERAL OTHER; PROPRIETARY SMOKING DETERRENT											
For Population definition see Selection Summary											
	Decile 10	Decile 09	Decile 08	Decile 07	Decile 06	Decile 05	Decile 04	Decile 03	Decile 02	Decile 01	
	145 to 189	120 to 140	104 to 119	84 to 103	71 to 83	61 to 70	49 to 58	39 to 48	24 to 38	1 to 23	TOTAL
TOTAL	10	13	16	17	21	27	28	38	55	187	412
Rx TOTAL	1663	1691	1798	1564	1598	1756	1514	1651	1652	1637	16524

Pre Activity

COPD RX DATA											
GROUP: A0001											
DECILE Calculated on Prescriptions of BRONCHODILATORS, GENERAL OTHER; PROPRIETARY SMOKING DETERRENT											
For Population definition see Selection Summary											
	Decile 10	Decile 09	Decile 08	Decile 07	Decile 06	Decile 05	Decile 04	Decile 03	Decile 02	Decile 01	
	213 to 401	178 to 210	138 to 173	113 to 137	88 to 112	72 to 87	60 to 71	48 to 59	30 to 47	1 to 29	TOTAL
TOTAL	8	12	13	17	24	25	33	44	52	201	429
Rx TOTAL	2373	2294	2006	2106	2369	1970	2164	2350	1993	2176	21801

Post Activity

Source for both ICD-9 and RX data: Direct Medical Data (DMD Data) LMS III [software system] ICD-9 and Rx self-run counts for target geographic area

### Summary of Level 6 Outcomes Assessment

The absence of significant correlation between the slight increase of COPD diagnosis and the significant increase in the number of prescriptions for COPD **suggests that existing COPD patients are using their medications with more frequency to maintain better control of symptoms and that clinicians are more aggressively treating COPD in existing patients.**

## Impact on Community Health (Level 7)

Assessment of a CME activity's impact on community health can be an elusive goal. The University of North Texas Health Science Center addressed this challenge by utilizing an existing data collection and reporting infrastructure for preventable hospitalizations. **Each hospital in Texas must submit a quarterly preventable hospitalization data** set to the Department of State Health Services, which in turns aggregates the data and makes it available for analysis. Working with its School of Public Health, UNTHSC used the Texas Public Use Data File (<http://www.dshs.state.tx.us/thcic/hospitals/HospitalData.shtm>) to assess the impact of its CME activities related to COPD on community health.

Below are the rates/100,000 of preventable hospitalizations in the target counties in the relevant time period, where the red numbers are the quarter in which an activity was conducted:

County	q1rate08	q2rate08	q3rate08	q4rate08	q1rate09	q2rate09	q3rate09
Kaufman	123.64	103.26	78.80	101.90	114.78	80.48	64.65
Angelina	137.81	49.22	39.38	90.23	112.05	55.22	58.46
Trinity	273.59	255.94	132.38	229.46	307.23	149.23	87.78
Franklin	253.96	229.77	133.03	120.93	120.67	193.07	120.67
Camp	261.59	136.03	52.32	156.95	186.51	93.25	134.70
Rusk	99.74	75.48	86.26	37.74	130.44	95.83	74.54
Panola	61.67	39.24	61.67	56.06	61.41	72.57	50.24
Galveston	69.74	69.74	66.05	72.98	70.94	58.04	57.12
Liberty	188.35	163.93	122.08	214.51	219.84	159.25	129.83
Orange	129.89	96.63	107.72	117.22	137.10	116.61	81.94
Montgomery	92.22	71.40	67.56	73.33	70.44	61.56	57.57
Polk	208.12	101.32	84.89	145.14	144.75	109.24	92.86
Liberty	188.35	163.93	122.08	214.51	219.84	159.25	129.83

Admission rate was calculated as the number of COPD admissions in a county divided by the estimated population of the county per 100,000 observations.

A COPD admission was defined by the AHRQ's Prevention Quality Indicators technical specifications. Patients 18 years or older with an ICD-9-CM principal diagnosis code of the following: 4910, 4911, 49120, 49121, 4918, 4919, 4920, 4928, 494, 4940, 4941, 496, 4660 or 490, which was followed by the first secondary diagnosis of any of the aforementioned codes.

UNTHSC averaged the admission rates in the quarter the CME was held and quarter(s) prior to rates of the quarters after the interventions were held (columns A,B,C, below). In all but three counties (Liberty County was visited twice) **a significant reduction in the rate of preventable hospitalizations was observed, resulting in an average reduction in the rate of admissions of 21.5 per county, for a total reduction in the rate of admissions of 279.5. (see below)**

	A	B	C	D	E	F
<u>County</u>	AVG Before CME	AVG After CME	$\Delta$	Qtr $\leftarrow$ CME	Comparable Qtr	$\Delta$
Kaufman	113.45	88.12	-25.32	123.64	114.78	-8.85
Angelina	93.52	71.07	-22.45	137.81	112.05	-25.76
Trinity	264.76	181.22	-83.54	273.59	307.23	33.65
Franklin	241.87	137.68	-104.19	253.96	120.67	-133.29
Camp	198.81	124.75	-74.06	261.59	186.51	-75.08
Rusk	87.61	84.96	-2.65	99.74	130.44	30.70
Panola	50.45	60.39	9.94	61.67	61.41	-0.26
Galveston	69.74	65.02	-4.72	69.74	70.94	1.19
Liberty	158.12	180.86	22.74	163.93	159.25	-4.68
Orange	111.41	113.22	1.81	96.63	116.61	19.99
Montgomery	77.06	65.72	-11.34	71.40	61.56	-9.85
Polk	131.45	123.00	-8.45	101.32	109.24	7.92
Liberty	158.12	180.86	22.74	163.93	159.25	-4.68
<b>AVERAGE</b>	135.1	113.6	-21.5	144.5	131.5	-13
<b>TOTAL</b>	1756.3	1476.7	-279.5	1879	1710	-169

Additionally, the quarter before educational interventions was compared to the corresponding quarter one year later to account for potential variables, including seasonal triggers (columns D,E,F above). **Quarter to quarter comparison shows an average rate reduction of 13/100,000 admissions per county.**

The county where the greatest impact was realized, Franklin County, has a population of about only 9,500. Here, all physicians who practice in the county along with other health professionals were in attendance at the live event and received follow-up cases via mail. **This county realized an average rate of 104.2/100,000 fewer admission following the initial CME activity, and a reduction of 133.3/100,000 in the rate of admissions the comparable quarter a year after the activity.**

### Comparisons to Other Counties

To aid in determining if reductions in hospital admissions due to COPD in the counties which received focused education could be partially attributed to UNTHSC's educational efforts, comparable data was collected and analyzed (again, from the Texas Public Use Data File) for other counties in East Texas with similar demographics and populations. **These 12 counties served as a form of control group** as the primary care healthcare providers received no live activity, **although they were mailed the follow-up cases.**

The results of this head-to-head comparison support the value of community-focused, community-based continuing education activities. In counties where the live activities were conducted, the average rate reduction in hospital admissions was 21.5, for a total of 279.5/100,000. Conversely, in

counties where no live activities were held, an average rate reduction of 11.4 was realized, for a total of 136.9/100,000.

**Counties targeted with live and follow-up activities saw 49% fewer hospitalizations due to COPD than counties where healthcare providers received only the mailed and printed cases, as demonstrated below.**

Control County	q1rate 08	q2rate 08	q3rate 08	q4rate 08	q1rate 09	q2rate 09	q3rate 09	Pre CME	Post CME	Δ
Grayson	112.12	91.24	60.46	69.25	122.90	89.19	43.51	101.68	77.06	-24.62
Morris	148.99	129.12	99.32	129.12	99.28	79.42	59.57	139.05	93.34	-45.71
Nacogdoc	50.21	50.21	50.21	60.66	57.48	47.22	43.11	50.21	51.74	1.53
Panola	61.67	39.24	61.67	56.06	61.41	72.57	50.24	50.45	60.39	9.94
Harrison	51.33	61.60	78.03	41.07	48.53	68.76	48.53	56.47	56.98	0.52
Jasper	100.63	78.27	96.90	59.63	143.81	103.25	84.81	89.45	97.68	8.23
Anderson	66.36	48.66	35.39	39.82	72.46	57.09	46.11	57.51	50.17	-7.34
Van Zandt	74.93	84.92	52.45	64.94	76.52	59.24	66.65	79.92	63.96	-15.96
Jefferson	90.74	57.25	60.49	61.03	81.30	63.00	40.38	74.00	61.24	-12.76
Walker	91.14	53.94	40.92	53.94	72.22	64.81	50.00	72.54	56.38	-16.17
Henderson	166.99	103.14	81.86	112.96	169.40	114.02	81.44	135.07	111.94	-23.13
Freestone	84.80	78.27	32.61	45.66	84.13	135.90	51.77	81.53	70.01	-11.52
							AVG	82.32	70.91	-11.42
							Total	987.88	850.90	-136.99

## Summary of Level 7 Outcomes Assessment

Lower admission rates suggest a significant shift in treatment strategies and self-management, possibly due to education provided by clinicians. They also represent demonstrable cost savings to the health care system. According to the Texas Department of State Health Services, each preventable hospitalization due to COPD costs \$25,203. The count of preventable hospitalizations due to COPD in the months of and prior to the CME activities, and the same number of months following the CME activities dropped from 1,538 to 1,402, **a net reduction of 136. This represents a cost savings of approximately \$3,427,608 in the target counties, suggesting community health was improved.**

## Discussion

Despite the quality and frequency of its educational interventions (live activities, reinforcing cases and AHEC-planned workshops) in the targeted counties, the University of North Texas Health Science Center cannot not take full credit for the reduction in hospitalizations and the resulting cost savings. However, the results are consistent in each of the counties where UNTHSC focused its efforts suggesting **the results were not realized in isolation**. UNTHSC can, however, say with a fair degree of confidence that its educational activities **contributed to improvements in clinician competence and performance, patient health and the health of the communities targeted.**

The series of activities were designed based on **clear local need** and to reinforce each other. While the results are remarkable, even by UNTHSC's own expectations, they are not unanticipated, as demonstrated by the project objectives.

**Accomplishment of project objectives:**

Objective	Evidence of accomplishment
Reduce the number of undiagnosed patients with COPD in East Texas by promoting more frequent and quality testing by primary care clinicians;	<p>A slight increase in the number of diagnosed COPD cases were observed following the interventions.</p> <p>Almost 1/3 of participants have increased the use of spirometry</p> <p>Participants who were highly confident or confident in their ability to interpret spirometry results rose by more than a quarter to 68%</p>
Reduce the number of preventable hospitalizations related to COPD in East Texas;	<p>The number of preventable hospitalizations was reduced by almost 280 in the targeted counties, representing a cost savings of more than \$7 million to the health care system.</p>
Improve the quality of life of patients with COPD by aggressively treating COPD and reducing environmental and behavioral risks to slow the disease progression; and	<p>The number of prescriptions for classes of drugs which are recommended in guidelines for effective treatment of COPD significantly increased more than can be accounted for by the increase in new diagnoses.</p> <p>Participants who were highly confident or confident in their ability to aggressively treat and slow the progression of COPD rose from 65% to 76% following the activity.</p>
Educate patients on risks of developing COPD and methods that could prevent it from developing.	<p>Quarter to quarter data comparison demonstrates sustained reductions in preventable hospitalizations, suggesting improved self-management, an important component of patient education in COPD.</p> <p>Almost 75% of participants have increased smoking cessation and other COPD risk factor education in their practices</p> <p>Participants who were highly confident or confident in their ability to correctly educate patients on COPD risk factors and strategies to prevention increased 33% to 92%!</p>



## Points for Practice

- This CME activity was successful, in part, because
  - It focused on community needs in a specific geographic region
  - It established partnerships with Area Health Education Centers, Medical Societies, hospitals and clinics to help promote the activities and to serve as additional educational resources were invaluable and added “local credibility”
  - The local need was added to the activity brochure
  - A series of reinforcing activities kept the issue in the front of clinicians’ minds
  - Invitations were customized per community, instead of a single invitation
  - CD-ROM and printed resource kits were provided to be used for patient education
- The focus on counties with smaller populations was deliberate and allowed for the impact of the initiative to be realized to a greater extent. In a follow-up activity in larger counties, for example, much smaller reductions in admissions were realized.
- In most locations, attendance at live events was below desired targets due to the limited number of providers in the areas and competing obligations. In two counties, every physician who practices in the county was in attendance, in addition to other healthcare providers.
- Advertising using alternate methods, such as in local newspapers or broadcast media, may be an effective strategy in these regions.
- Knowledge of the local communities and partnerships with community-based organizations vital to making an activity such as this successful.
- Many providers were appreciative of quality, live CME available in their communities. Many noted that they feel forgotten or overlooked.
- This activity demonstrates the significant impact appropriately designed CME can have on community health
- The success of this CME initiative is likely easily replicable in diseases with similar gaps in diagnosis and treatment.

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## Appendix 1: How Activities Have Impacted Patients

The following stories were shared by follow-up survey respondents who were asked to relate a change this education made in one patient's care.

- A Merchant Marine was counseled to stop smoking because it was making his COPD worse and, if his condition worsened, he would not be able to pass his employment physical and provide for his family. I used the Marlboro Man example from the presentation. He has stopped smoking for now.
- We now provide PFT at no charge to all of our smoking or asthmatic patients with oximetry to test for COPD
- We used the time line [Fletcher-Peto graph provided in handouts] to demonstrate benefit of cessation with several patients and many have stopped smoking or are trying to.
- A patient diagnosed with sarcoidosis and pneumonia was encouraged to use incentive spirometer. The patient info provided in handouts helped decrease patient anxiety during hospital stay.
- We added the handout information you provided to our existing tobacco education modules to increase cessation and prevention.
- A patient who I have tried to get to stop smoking for years agreed to try a smoking cessation strategy after I showed him the handout material from the program. Thanks!

## Appendix 2: Responses captured by faculty at the roundtable dialogues:

**What is one thing that can be done to improve COPD rates in your area?**

- Smoking Cessation (60% of responses)
- Community and Patient Education on Smoking/COPD (20% of responses)
- Increase smoking ordinances
- Better diagnosis and treatment (including treatment options)
- Reduce pollution
- Address/eliminate allergens
- Increase cigarette prices

**What are the three greatest challenges that exist in your area that, if eliminated, would make diagnosing and treating COPD easier?**

- **Most frequent and recurring responses**
  - Smoking/Tobacco use
  - Lack of testing (spirometry)
  - Lack of good smoking cessation education for patients
  - Cost of medical care/lack of coverage
  - Pollution/environmental factors
  - Patient's distance from care/lack of transportation
- **Less frequent or single responses**
  - Chicken houses (note: Pittsburg, TX has a Pilgrim's Pride chicken plant)
  - Convenience stores that sell cigarettes to minors
  - Coordination of care between physicians
  - Time
  - Allergens

### Appendix 3: Outcomes Findings of AHEC Sub-Grant (Lake Country AHEC)

- If the programs were offered at regional sites again, we believe the attendance would equal or be greater than this cycle of programs. This is due to two factors common with rural educational outreach: positive word of mouth and the fact that the provider is returning to the site shows respect and value for rural providers.
- The Community Health Centers/Federally Qualified Health Centers would be prime sites for staff training, as they have little funding for travel to continuing education program, see clients that would benefit from this testing, and this is a reimbursable service that would also help the clinic become more financially stable. The local physician at the CHC has extensive pulmonary experience and was thrilled that staff had the opportunity to have this training so the testing could be done on-site while the patient is there.
- Primary care residency programs would benefit from having the 2-day pulmonary testing program made available so they could be certified for OSHA-accepted testing. Since many of the primary care residents at both UTHSCT (UT Health Science Center at Tyler) and UNTHSC-FW will be entering practice in small communities, have this training would be an asset to a practice and a community.
- While we had low participation, those who did attend participated in active learning and valued the content. We could not have provided this educational program without the grant support.
- In response to the request for periodic updated materials, LCAHEC staff will meet with UTHSCT Pulmonary Medicine staff to discuss how this might be done. Participants gave a web address when they signed in for the class, so an initial mailing list is available. It would appear that this might be a valuable tool for patient care management as well as marketing the advanced pulmonary specialty care that is available. In this situation, social marketing concepts might be implemented to quickly reach interested parties with specific factual information.

This grant has enabled rural primary care offices to improve the services offered for better patient management. It has allowed personnel to use their expertise when they have seldom had an opportunity before. As usual, it has also raised ideas of additional programming to enhance what we provided.



## Appendix 4: Target County Population Profiles

County	Pop	%								
		M	F	White	Black	Hisp	Asian	Am Ind	Nat Haw	Other
Kaufman	96,280	49.6	50.4	82.5	10.3	16.4	0.9	0.5	0	4.3
Angelina	82,572	49	51	78.1	14.6	17.7	0.8	0.4	0	5.0
Trinity	13,779	48.3	51.7	83.8	11.9	4.8	0.2	0.4	0	2.7
Franklin	9,458	48.5	51.5	89.2	3.9	8.9	0.2	0.6	0	5.1
Camp	11,549	49	51	69.5	19.2	14.8	0.2	0.3	0.1	9.6
Rusk	48,434	51.4	48.6	76.9	18.1	11.4	0.3	0.4	0.1	3.0
Panola	23,032	48.7	51.3	78.1	18.1	--	.05	0.3	0	1.4
Galveston	283,361	49.1	50.9	75.9	14.3	21.0	2.8	0.6	0.1	4.4
Liberty	74,911	49.3	50.7	77.2	12.3	14.7	0.5	0.5	0.01	8.0
Orange	82,577	48.8	51.2	87.1	8.7	4.8	1.0	0.5	0.01	1.2
Montgomery	411,177	49.7	50.3	86.3	4.6	17.6	1.8	0.5	0.1	5.4
San Jacinto	24,666	49.9	50.1	83.6	12.6	4.9	0.3	0.5	0.1	1.6
Polk	49,214	51.5	48.5	82.4	11.5	11.1	0.03	1.1	0	2.3

Source: US Census Data, 2008.

## Appendix 5: Program Chairs

Program Co-Chairs and Presenting Faculty	
<b>Bruce Dubin, DO, JD, FCLM</b>  <b>Position at Time of Activity</b> Associate Dean of Academic Affairs Associate Professor of Internal Medicine Division of Pulmonology University of North Texas Health Science Center Fort Worth, Texas  <b>Current Position</b> Dean Rocky Vista University College of Osteopathic Medicine Denver, Colorado  <b>Faculty Disclosure:</b>  At the time of the activity, Dr. Dubin indicated he had nothing to disclose.	<b>Richard Winn, MD</b>  <b>Position at Time of Activity</b> Staff Pulmonologist CR Darnall Community Hospital Ft. Hood, Texas  Professor of Medicine Texas A&M Health Sciences Center Temple, Texas  <b>Current Position</b> Professor of Medicine and Microbiology Chief of Infectious Diseases Texas Tech University Health Science Center Lubbock, Texas  <b>Faculty Disclosure:</b>  At the time of the activity, Dr. Winn disclosed that he had been a non-CME speaker for Wyeth, Sepracor and Schering Plough within the previous 12 months. Potential conflict of interest was resolved through peer review and the use of standardized content.
Neither the University of North Texas Health Science Center or its employees involved in activity planning or content development have any relationships with commercial interests to disclose.	

Sejong Bae, PhD., Professor of Biostatistics at University of North Texas Health Science Center School of Public Health provided independent data analysis.