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Public Policy & Economic Development

*A partnership among Keystone College, King's College, Luzerne County Community College, Marywood University, Misericordia University, Penn State Wilkes-Barre, The Commonwealth Medical College, University of Scranton, & Wilkes University*

# OUTMIGRATION OF CARE

This paper studies the outmigration of health care issue and elements of patient perception impacting the decision to receive healthcare services within Lackawanna and Luzerne County.

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- community development
- education
- workforce development
- health and healthcare
- best practices
- innovation indicators
- economic indicators
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## Introduction

In 2011, The Institute for Public Policy & Economic Development conducted a pilot Patient Perception Survey, which was commissioned by a local hospital. The goal was to determine why many Lackawanna County residents choose to travel outside the region for healthcare services.

Data were collected through a voluntary electronic survey. An advertisement was placed in The Scranton Times-Tribune seeking Lackawanna County residents who have sought healthcare services outside Lackawanna County. The survey consisted of fourteen multiple choice questions, with several allowing the option to write in responses. A fifteenth question was used for additional open-ended comments.

Data gathered by the survey revealed that Lackawanna County residents felt they would not receive the same quality of care locally that they believed they would receive elsewhere, even if the same services were provided. Additionally, respondents said that Lackawanna County doctors often referred them to hospitals/doctors in other parts of Pennsylvania.

The pilot study data was corroborated by The Pennsylvania Health Care Cost Containment Council (PHC4) research. It gathered data from hospital records on specified healthcare services provided to Lackawanna County residents at hospitals around the state. Records showed that Lackawanna County residents made over 2,000 visits to facilities in other parts of the state in FY 2008-2009 for OB/GYN, spinal and orthopedic surgery services, alone. That year, Philadelphia County hospitals treated more Lackawanna County residents than facilities in any other Pennsylvania county. Montour and Lehigh Counties followed in second and third, respectively. A separate report from PHC4 states that, in 2009, over \$200 million in revenue was created by Lackawanna County residents who received healthcare services in other regions.<sup>1</sup>

Understanding the healthcare infrastructure's economic impact on the region, The Institute for Public Policy and Economic Development worked to set up a larger study to evaluate patient perception and outmigration of care.

The Institute conducted in-depth primary research by deploying over 12,000 surveys in Lackawanna and Luzerne Counties, and conducting several interviews and focus groups in coordination with the Healthy Northeast Pennsylvania Initiative and its Community Health Needs Assessment. Additionally, the Institute collected secondary data from a number of federal and state sources in order to examine the demographics and health status of the region's residents. The remainder of this document discusses the data and subsequent findings.

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<sup>1</sup> 2011 Task Force Policy Statements. 13.

## **Research Methods**

### **Secondary Data**

Data were retrieved from the Pennsylvania Department of Health for hospital employment, admissions, and availability of selected services. This data helped in evaluating the state of area hospitals in terms of the number of people employed and patients served.

### **Surveys**

In August of 2012, a household survey of Lackawanna and Luzerne County residents was conducted in order to gain an understanding of the counties' health needs. The survey was sent to 12,000 residents, whose addresses were drawn at random by a commercial random sampling organization.

Of those mailed, 2,014 (17%) were returned and marked "undeliverable" due to inaccurate or partial addresses or because the recipient had moved and there was no forwarding address. Fifteen surveys were deemed unusable, and another fifteen were received after the deadline and were not included in the analysis.

The number of surveys was chosen to exceed 5% of all households and account for unusable surveys. The minimum goal was a 95% confidence interval, with a 5% margin of error. This would have required a minimum of 377 responses. The Institute surpassed that goal by receiving a total of 1,457 useable surveys, resulting in a 12.1% response rate, which provides for a slightly less than a 3% margin of error.

Additionally, 200 Spanish language surveys were prepared and distributed to local Hispanic churches and free medical clinics in Lackawanna and Luzerne Counties. A local housing agency also helped distribute Spanish language surveys. Overall, 4 % of the area's Hispanic population responded.

Another 200 surveys were distributed to African American and other minority or immigrant populations. These surveys were distributed through local youth organizations and free medical clinics. Overall, 3% of the region's African American population responded.

The survey was prefaced with the purpose, instructions, and an informed consent. The informed consent indicated the survey's purpose, contact information for the consultants and the sponsoring organization, along with language explaining the respondent's right to ask questions and the right to skip questions. The informed consent indicated that all responses would be kept confidential and presented in aggregate form. The consent indicated that the only parties that would see the individual surveys were the project consultants. The informed consent met all federal standards established for

the protection of human subject rights in research. The Wilkes University Institutional Review Board (IRB) reviewed and approved all of the primary research instruments and informed consents.

Survey responses were uploaded into the Statistical Packages for the Social Sciences (SPSS). SPSS is an integrated software program used for analytical data analysis. A verification process was performed through fact checking the data entered.

## **Interviews**

A total of sixteen interviews were conducted with 26 stakeholders. The following groups were represented:

- Major employers
- A Federally Qualified Health Center and free medical clinic
- Pennsylvania Department of Public Health
- Social scientists/researchers
- Philanthropist and health policy advisor
- Disease-based organization
- Social service organization
- Mental and behavioral health organizations
- Epidemiology/environmental specialists
- Primary care physician
- Surgeon
- Medical technologist/clinical laboratory
- Insurer

Care was taken to interview stakeholders that either represented the entire study region or to interview representatives from each county representing one of the aforementioned affiliations. Interviews ranged from 45 minutes to three hours in duration. Interviews were semi-structured (an interview questionnaire is located in the appendix). Prompts were used on occasion and each interviewee had the opportunity to provide open-ended comments at the end of the survey. Interviewer notes and peripheral material provided by the interviewee were used in the summation of the interview section.

## **Focus Groups**

The Institute identified high-priority stakeholders representing various segments of the community in order to assess the unique health care needs of specific groups. The following focus groups were conducted:

- Hispanic/Latino community
- African American community (2 separate groups)
- Impoverished
- Aging
- Physically & mentally challenged
- Youth
- Chronic disease/public health organizations
- Major employers
- Behavioral based (substance abuse) organizations

The sessions were analyzed using both interviewer notes as well as keyword analysis through the use of The Institute's qualitative analysis software. The sessions were digitally recorded and will be stored on the Wilkes University secure network for 24 months following the project's completion.

### **Patient Perception**

An electronic survey was distributed to members of the Lackawanna and Luzerne County Medical Societies, members of which are allopathic (MD) and osteopathic (DO) physicians. From both organizations, 525 members received a URL link. Among this group, the response rate was 4.4%, which is very low. Four primary care and specialty physicians consented to one-on-one interviews. Finally, four individuals or patients participated in one-on-one interviews.

### **Patient Export Data**

AllOne Health provided patient export data. Data were provided for members who lived in Luzerne and Lackawanna Counties between 2009 and 2011. For each report, utilization data outside and inside Blue Cross of Northeastern Pennsylvania's thirteen-county service area were presented. The service area includes Bradford, Carbon, Clinton, Lackawanna, Luzerne, Lycoming, Monroe, Pike, Sullivan, Susquehanna, Tioga, Wayne and Wyoming Counties. The information in each file was as follows:

**Inpatient:** Admissions by clinical condition and admissions by clinical condition and by provider. City and state of the provider were presented when available.

**Outpatient:** All of non-hospital visits by clinical condition; details of non-hospital visits by clinical condition and by provider type; summary of the hospital visits by clinical condition; and hospital visits by clinical condition and by provider, including the city and state, when available.

Relative Risk Score: This file shows the relative risk score of those members who had at least one in-patient admission outside Blue Cross's service area, compared with those members who had only in-patient admissions within the service area. The higher the score, the higher the patient risk. The comparison showed that those members with in-patient admissions outside the service area had a significantly higher risk score and presumably had significantly more complex issues than those who had in-patient admissions within Blue Cross's service area.

## **Executive Summary**

Lackawanna and Luzerne Counties' healthcare infrastructure represents a strong industry cluster with significant employment and growth potential. This infrastructure, coupled with the presence of The Commonwealth Medical College, represents an opportunity for the region to strengthen, expand and even diversify (through research, biomedical equipment, and even pharmaceutical company presence). The healthcare industry employs individuals with all levels of skills and education, but primarily supports individuals with college, technical or professional degrees – jobs that tend to pay higher wages.

Just as any industry representation has an economic impact that ripples through the economy, so too does healthcare. Due to its size and importance in the region, the economic impact of the healthcare industry throughout other sections is great. Sustaining and growing this industry, as well its ancillary industries, is an opportunity with real potential.

It is without dispute that the region's healthcare industry faces many challenges – the first of which is patient perception that leads to a high number of "exports." The term "exports" refers to residents who leave the two-county area for healthcare services. The Institute for Public Policy and Economic Development's recent study on patient perception indicates that people believe that the quality of care is poorer within the Lackawanna and Luzerne County region than it is outside the region, and that needed healthcare services, treatments and testing may not be as readily available within the region as it is in other areas. Whether or not this perception is true is another issue. If an individual believes it to be true, then it is true to them and it becomes an economic issue. Nevertheless, the region's healthcare community has an opportunity to educate, inform and influence that perception.

Patient perception versus reality will not be debated in this paper, which is not to say that people should not be able to choose where to receive their healthcare services. Its purpose, however, is to outline patient perception, as identified in recent primary data collection, demonstrate the number and dollar value of exports, and identify that there is opportunity to reduce the number of exports by changing patient perception.

The local healthcare infrastructure is challenged by the region's higher than average poverty level. The number of uninsured patients and underinsured who visit local emergency rooms and hospitals may



also be a financial burden on hospitals. In 2011, the U.S. Department of Health and Human Services published a study entitled, “The Value of Health Insurance: Few of the Uninsured Have Adequate Resources to Pay Potential Hospital Bills.”<sup>2</sup> The study focused on the percentage of uninsured patients unable to pay for hospital services received. The study estimates that, without health insurance, the average family is unable to pay the full amount for 95% of hospitalizations that occur. The Pennsylvania Department of Health estimates that uninsured residents comprise 10% of Lackawanna County’s total population.<sup>3</sup> This could result in hundreds of thousands of dollars in lost revenue for area hospitals.<sup>4</sup> In 2011, both Lackawanna and Luzerne Counties had an uninsured population of 9.3%.

Finally, the area’s healthcare infrastructure has been challenged by low reimbursement rates for Medicare and Medicaid patients. With such a large percentage of the region’s population enrolled in both programs, low reimbursements rates impact hospital revenues and have an adverse economic effect on area employment.

The data shows that patient perception can be improved. Approximately 25% of survey respondents indicated that they left the region for patient care. Additionally, 50% indicated that the physician services offered outside the region were higher quality and 51% indicated that the hospital services received outside the region were higher quality.

Data from AllOne Health measures inpatient and outpatient services within a thirteen-county area (Blue Cross of NEPA’s service area) compared with such services outside the area. Statistics show that from 2009 – 2011, patient services outside the thirteen-county region decreased. Yet, the data cannot be isolated to evaluate the impact on the study region. Additionally, the data may be impacted by the recession. National studies have indicated that healthcare services were on the decline due to cost.

Another dataset from the Pennsylvania Healthcare Cost Containment Council (PHC4) measures Lackawanna and Luzerne County residents’ hospitalizations, internal and external to the study region. Data is current through the third quarter of 2012. Reviewing the first three quarters of 2010, 2011, and 2012 shows that hospitalizations outside the two-county study region are increasing.

Given the importance of the healthcare infrastructure to the region’s economy, the healthcare community has an opportunity to sustain and grow the sector by working to educate and inform the citizenry. The most recent Community Health Needs Assessment, sponsored by the Healthy Northeast Pennsylvania Initiative (HNPI) and conducted by The Institute, identifies a number of recommendations to fuel the healthcare and ancillary industries over time.

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<sup>2</sup> Department of Health and Human Services Briefs. <http://aspe.hhs.gov/health/reports/2011/ValueofInsurance/rb.pdf>.

<sup>3</sup> County Health Profiles 2010. <http://www.portal.state.pa.us/portal/server.pt?open=514&objID=596007&mode=2>

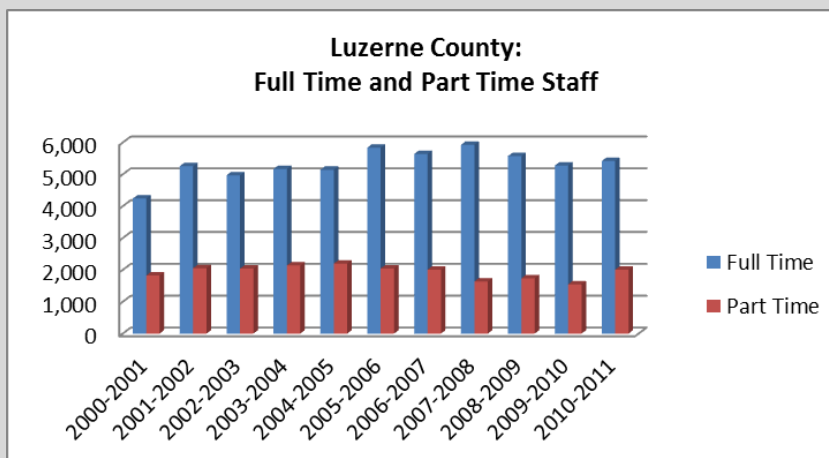
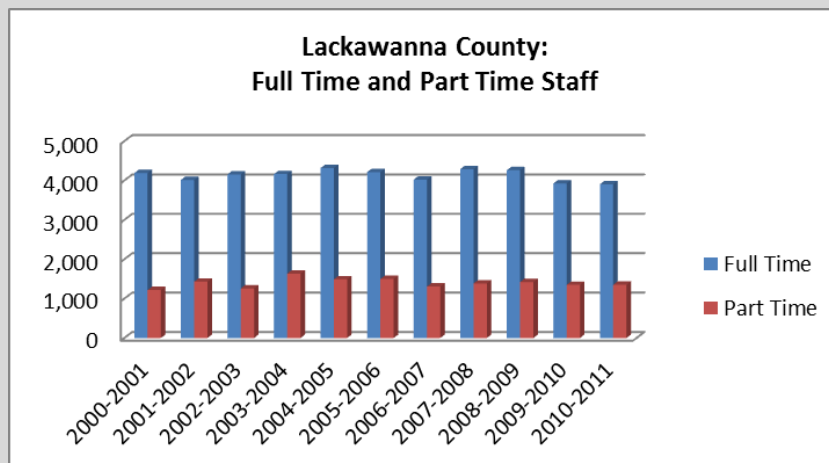
<sup>4</sup> 10% of Lackawanna County’s population (2010 estimate) equals about 21,000 residents. In the above referenced article, the U.S. Department of Health and Human Services estimates over 58% of the hospitalizations of uninsured patients resulted in a bill of over \$10,000. 22% of hospitalizations of the uninsured resulted in bills over \$100,000.

## Hospital Employment

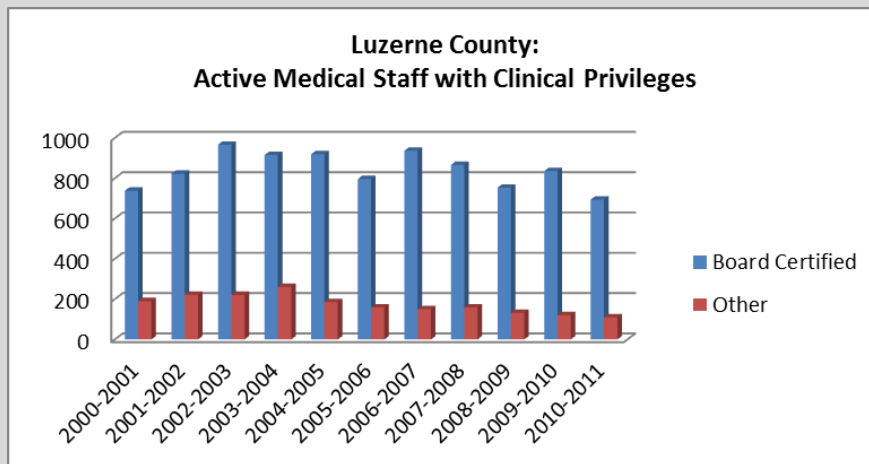
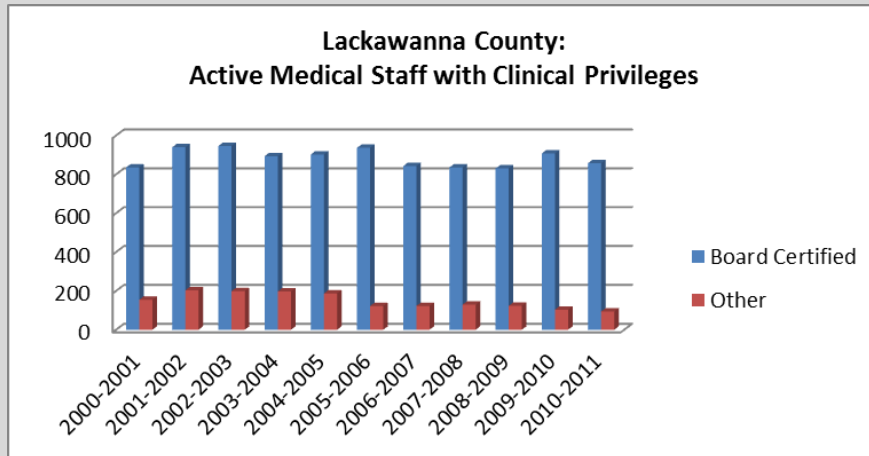
Given the major changes in the region's healthcare infrastructure, statistics from 2012 and beyond paint a more realistic picture of area employment, admissions, and patient services. However, historical data demonstrates the size and strength of the region's healthcare industry.

According to the Pennsylvania Department of Health, the number of full- and part-time hospital employees in Lackawanna County decreased slightly in 2009-2010 from the prior year and then leveled off. Through 2011, employment was lower than any year in the most recent ten-year-period. The chart below shows hospital employment figures in Lackawanna County from 2000 to 2011, as reported by the Pennsylvania Department of Health.

Lackawanna County figures hovered around 4,000 full-time and 1,000 part-time hospital employees, while Luzerne County showed more than 5,000 full-time and 2,000 part-time hospital employees each year.



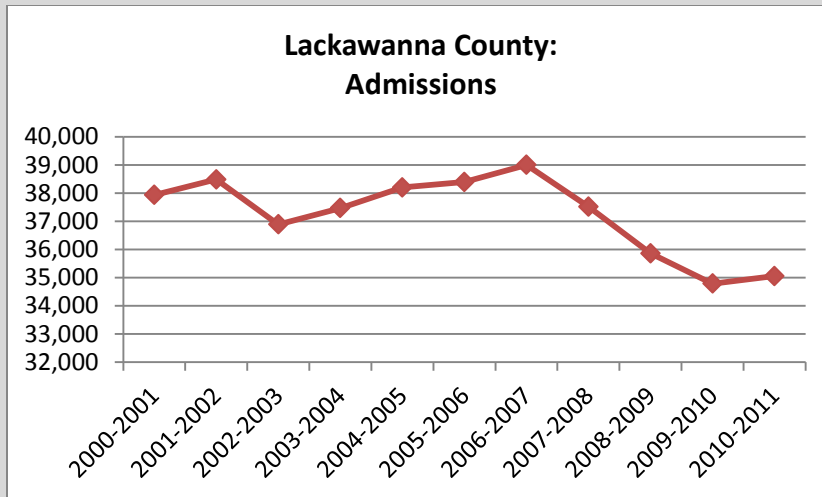
Both counties had more board certified physicians than non-board certified physicians during each year.



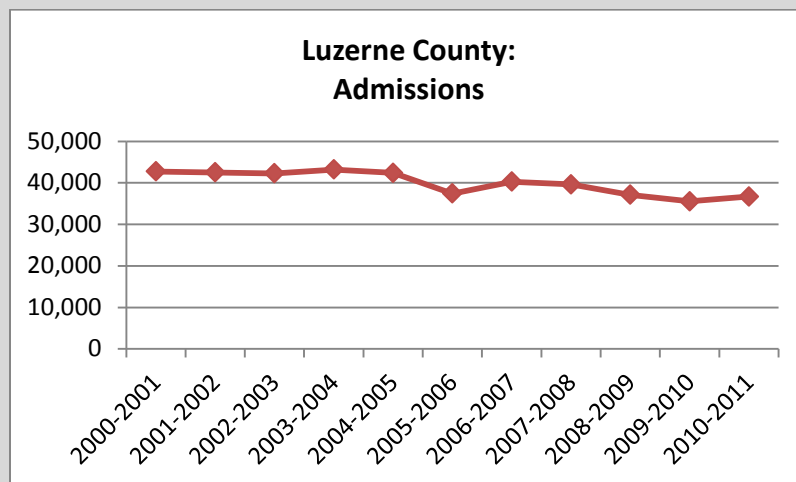
While hospital employment is significant and certainly the largest segment of the healthcare industry, thousands more are employed in allied health fields, independent practices and other health related fields.

### Hospital Admissions

Hospital admissions in both Lackawanna and Luzerne Counties decreased between 2000 and 2011; however, Lackawanna County’s decline was more substantial. A drop in admissions was first noted in the 2007 – 2008 period, which coincides with the Great Recession. Many national studies cite patient reluctance to pursue treatment and testing from 2008 – 2011 as a result of the recession. While Lackawanna County did note an increase in admissions from 2010 – 2011, its admissions have not reached pre-recession highs.



Luzerne County demonstrated a similar pattern; however its first decrease occurred the year prior to the recession's start.



#### Availability of Selected Services

The following charts display the availability of services at hospitals in Lackawanna and Luzerne Counties, from July 2010 through June 2011. The region's healthcare delivery system has undergone a major transformation over the past twelve to eighteen months. The region now includes two primary healthcare delivery systems — Commonwealth Health and Geisinger Health. These systems, combined with The Commonwealth Medical College, have an incredible opportunity to shape the region's healthcare by reducing the number of exports (those seeking medical care outside the region) by collaborating to provide state-of-the-art care in a variety of specialties.

COMMUNITY MEDICAL CENTER			
ALCOHOL/DRUG DETOX N	NEUROSURGERY Y	RESPIRATORY THERAPY Y	LINEAR ACCELERATOR N
BURN CARE N	OCCUPATIONAL THERAPY Y	SOCIAL WORK Y	OTHER THERAPEUTIC RADIOLOGY N
CARDIOPULMONARY REHAB Y	OPTOMETRY Y	SPEECH PATHOLOGY/AUDIOLOGY Y	DIAGNOSTIC RADIOISOTOPE Y
CHEMOTHERAPY Y	ORGAN BANK N	CARDIAC CATHETERIZATIONS Y	THERAPEUTIC RADIOISOTOPE N
CLINICAL LABORATORY Y	PHARMACY Y	LITHOTRIPSY (ESWL) N	POSITRON EMISSION TOMOGRAPHY N
CLINICAL PSYCHOLOGY Y	PHYSICAL THERAPY Y	HEMODIALYSIS-HOMECARE/MOBILE N	SURGERY Y
GENETIC COUNSELING N	PODIATRY Y	HEMODIALYSIS-CHRONIC IN HOSP N	CARDIAC SURGERY Y
HEALTH PROMOTION N	PSYCH/FOSTER/HOME CARE N	CT SCANNER Y	BONE MARROW TRANSPLANTS N
HOSPICE Y	PSYCH INPATIENT CARE Y	DIAGNOSTIC X-RAY Y	HEART TRANSPLANTS N
HYPERBARIC CHAMBER Y	PSYCH PARTIAL HOSPITALIZATN N	MRI Y	KIDNEY TRANSPLANTS N
INTERMEDIATE M/R CARE N	REGISTRY - CANCER N	ULTRASOUND Y	LIVER TRANSPLANTS N
INTERMEDIATE REHAB Y	REGISTRY - OTHER N	GAMMA KNIFE N	OTHER ORGAN TRANSPLANTS N
NEUROLOGY Y			

MARIAN COMMUNITY HOSPITAL			
ALCOHOL/DRUG DETOX N	NEUROSURGERY N	RESPIRATORY THERAPY Y	LINEAR ACCELERATOR N
BURN CARE Y	OCCUPATIONAL THERAPY Y	SOCIAL WORK Y	OTHER THERAPEUTIC RADIOLOGY N
CARDIOPULMONARY REHAB N	OPTOMETRY N	SPEECH PATHOLOGY/AUDIOLOGY Y	DIAGNOSTIC RADIOISOTOPE Y
CHEMOTHERAPY N	ORGAN BANK N	CARDIAC CATHETERIZATIONS N	THERAPEUTIC RADIOISOTOPE N
CLINICAL LABORATORY Y	PHARMACY Y	LITHOTRIPSY (ESWL) N	POSITRON EMISSION TOMOGRAPHY N
CLINICAL PSYCHOLOGY N	PHYSICAL THERAPY Y	HEMODIALYSIS-HOMECARE/MOBILE N	SURGERY Y
GENETIC COUNSELING N	PODIATRY Y	HEMODIALYSIS-CHRONIC IN HOSP N	CARDIAC SURGERY N
HEALTH PROMOTION N	PSYCH/FOSTER/HOME CARE N	CT SCANNER Y	BONE MARROW TRANSPLANTS N
HOSPICE Y	PSYCH INPATIENT CARE Y	DIAGNOSTIC X-RAY Y	HEART TRANSPLANTS N
HYPERBARIC CHAMBER Y	PSYCH PARTIAL HOSPITALIZATN N	MRI Y	KIDNEY TRANSPLANTS N
INTERMEDIATE M/R CARE N	REGISTRY - CANCER Y	ULTRASOUND Y	LIVER TRANSPLANTS N
INTERMEDIATE REHAB N	REGISTRY - OTHER N	GAMMA KNIFE N	OTHER ORGAN TRANSPLANTS N
NEUROLOGY Y			

Note: Marian Community Hospital closed in 2012

MID-VALLEY HOSPITAL			
ALCOHOL/DRUG DETOX N	NEUROSURGERY N	RESPIRATORY THERAPY Y	LINEAR ACCELERATOR N
BURN CARE N	OCCUPATIONAL THERAPY Y	SOCIAL WORK Y	OTHER THERAPEUTIC RADIOLOGY N
CARDIOPULMONARY REHAB Y	OPTOMETRY N	SPEECH PATHOLOGY/AUDIOLOGY Y	DIAGNOSTIC RADIOISOTOPE Y
CHEMOTHERAPY Y	ORGAN BANK N	CARDIAC CATHETERIZATIONS N	THERAPEUTIC RADIOISOTOPE N
CLINICAL LABORATORY Y	PHARMACY Y	LITHOTRIPSY (ESWL) N	POSITRON EMISSION TOMOGRAPHY N
CLINICAL PSYCHOLOGY N	PHYSICAL THERAPY Y	HEMODIALYSIS-HOMECARE/MOBILE N	SURGERY Y
GENETIC COUNSELING N	PODIATRY Y	HEMODIALYSIS-CHRONIC IN HOSP N	CARDIAC SURGERY N
HEALTH PROMOTION N	PSYCH/FOSTER/HOME CARE N	CT SCANNER Y	BONE MARROW TRANSPLANTS N
HOSPICE Y	PSYCH INPATIENT CARE N	DIAGNOSTIC X-RAY Y	HEART TRANSPLANTS N
HYPERBARIC CHAMBER N	PSYCH PARTIAL HOSPITALIZATN N	MRI N	KIDNEY TRANSPLANTS N
INTERMEDIATE M/R CARE N	REGISTRY - CANCER N	ULTRASOUND Y	LIVER TRANSPLANTS N
INTERMEDIATE REHAB Y	REGISTRY - OTHER N	GAMMA KNIFE N	OTHER ORGAN TRANSPLANTS N
NEUROLOGY Y			

MOSES TAYLOR HOSPITAL			
ALCOHOL/DRUG DETOX N	NEUROSURGERY Y	RESPIRATORY THERAPY Y	LINEAR ACCELERATOR N
BURN CARE N	OCCUPATIONAL THERAPY Y	SOCIAL WORK Y	OTHER THERAPEUTIC RADIOLOGY N
CARDIOPULMONARY REHAB Y	OPTOMETRY N	SPEECH PATHOLOGY/AUDIOLOGY Y	DIAGNOSTIC RADIOISOTOPE Y
CHEMOTHERAPY Y	ORGAN BANK N	CARDIAC CATHETERIZATIONS N	THERAPEUTIC RADIOISOTOPE N
CLINICAL LABORATORY Y	PHARMACY Y	LITHOTRIPSY (ESWL) Y	POSITRON EMISSION TOMOGRAPHY N
CLINICAL PSYCHOLOGY Y	PHYSICAL THERAPY Y	HEMODIALYSIS-HOMECARE/MOBILE N	SURGERY Y
GENETIC COUNSELING N	PODIATRY Y	HEMODIALYSIS-CHRONIC IN HOSP Y	CARDIAC SURGERY N
HEALTH PROMOTION Y	PSYCH/FOSTER/HOME CARE N	CT SCANNER Y	BONE MARROW TRANSPLANTS N
HOSPICE N	PSYCH INPATIENT CARE Y	DIAGNOSTIC X-RAY Y	HEART TRANSPLANTS N
HYPERBARIC CHAMBER Y	PSYCH PARTIAL HOSPITALIZATN N	MRI Y	KIDNEY TRANSPLANTS N
INTERMEDIATE M/R CARE N	REGISTRY - CANCER N	ULTRASOUND Y	LIVER TRANSPLANTS N
INTERMEDIATE REHAB N	REGISTRY - OTHER N	GAMMA KNIFE N	OTHER ORGAN TRANSPLANTS N

REGIONAL HOSPITAL OF SCRANTON			
ALCOHOL/DRUG DETOX N	NEUROSURGERY Y	RESPIRATORY THERAPY Y	LINEAR ACCELERATOR Y
BURN CARE N	OCCUPATIONAL THERAPY Y	SOCIAL WORK Y	OTHER THERAPEUTIC RADIOLOGY N
CARDIOPULMONARY REHAB Y	OPTOMETRY Y	SPEECH PATHOLOGY/AUDIOLOGY Y	DIAGNOSTIC RADIOISOTOPE Y
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INTERMEDIATE M/R CARE N	REGISTRY - CANCER Y	ULTRASOUND Y	LIVER TRANSPLANTS N
INTERMEDIATE REHAB Y	REGISTRY - OTHER Y	GAMMA KNIFE N	OTHER ORGAN TRANSPLANTS N
NEUROLOGY Y			

GEISINGER WYOMING VALLEY MEDICAL CENTER			
ALCOHOL/DRUG DETOX N	NEUROSURGERY Y	RESPIRATORY THERAPY Y	LINEAR ACCELERATOR Y
BURN CARE N	OCCUPATIONAL THERAPY Y	SOCIAL WORK Y	OTHER THERAPEUTIC RADIOLOGY N
CARDIOPULMONARY REHAB Y	OPTOMETRY Y	SPEECH PATHOLOGY/AUDIOLOGY Y	DIAGNOSTIC RADIOISOTOPE Y
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INTERMEDIATE REHAB Y	REGISTRY - OTHER Y	GAMMA KNIFE N	OTHER ORGAN TRANSPLANTS N
NEUROLOGY Y			

HAZLETON GENERAL HOSPITAL			
ALCOHOL/DRUG DETOX N	NEUROSURGERY N	RESPIRATORY THERAPY Y	LINEAR ACCELERATOR N
BURN CARE N	OCCUPATIONAL THERAPY Y	SOCIAL WORK Y	OTHER THERAPEUTIC RADIOLOGY N
CARDIOPULMONARY REHAB N	OPTOMETRY N	SPEECH PATHOLOGY/AUDIOLOGY Y	DIAGNOSTIC RADIOISOTOPE Y
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HYPERBARIC CHAMBER N	PSYCH PARTIAL HOSPITALIZATN N	MRI Y	KIDNEY TRANSPLANTS N
INTERMEDIATE M/R CARE N	REGISTRY - CANCER Y	ULTRASOUND Y	LIVER TRANSPLANTS N
INTERMEDIATE REHAB N	REGISTRY - OTHER N	GAMMA KNIFE N	OTHER ORGAN TRANSPLANTS N
NEUROLOGY Y			

WILKES-BARRE GENERAL HOSPITAL			
ALCOHOL/DRUG DETOX Y	NEUROSURGERY Y	RESPIRATORY THERAPY Y	LINEAR ACCELERATOR Y
BURN CARE N	OCCUPATIONAL THERAPY Y	SOCIAL WORK Y	OTHER THERAPEUTIC RADIOLOGY N
CARDIOPULMONARY REHAB Y	OPTOMETRY N	SPEECH PATHOLOGY/AUDIOLOGY Y	DIAGNOSTIC RADIOISOTOPE Y
CHEMOTHERAPY Y	ORGAN BANK N	CARDIAC CATHETERIZATIONS Y	THERAPEUTIC RADIOISOTOPE Y
CLINICAL LABORATORY Y	PHARMACY Y	LITHOTRIPSY (ESWL) N	POSITRON EMISSION TOMOGRAPHY Y
CLINICAL PSYCHOLOGY N	PHYSICAL THERAPY Y	HEMODIALYSIS-HOMECARE/MOBILE N	SURGERY Y
GENETIC COUNSELING N	PODIATRY Y	HEMODIALYSIS-CHRONIC IN HOSP Y	CARDIAC SURGERY Y
HEALTH PROMOTION Y	PSYCH/FOSTER/HOME CARE N	CT SCANNER Y	BONE MARROW TRANSPLANTS N
HOSPICE N	PSYCH INPATIENT CARE Y	DIAGNOSTIC X-RAY Y	HEART TRANSPLANTS N
HYPERBARIC CHAMBER Y	PSYCH PARTIAL HOSPITALIZATN N	MRI Y	KIDNEY TRANSPLANTS N
INTERMEDIATE M/R CARE N	REGISTRY - CANCER Y	ULTRASOUND Y	LIVER TRANSPLANTS N
INTERMEDIATE REHAB N	REGISTRY - OTHER N	GAMMA KNIFE Y	OTHER ORGAN TRANSPLANTS N
NEUROLOGY Y			

A comparison of services across facilities shows that some services were not available locally when the data was compiled, which may not currently be the case.

- Burn care
- Mobile Hemodialysis
- Transplants – heart, kidney or other organ
- Therapeutic radiology
- Psych foster home care
- Psych partial hospitalization
- Intermediate M/R care

Aside from Moses Taylor Hospital, where patient services are dominated by pregnancy, childbirth and post birth care, the other regional hospitals' services are primarily focused on diseases and disorders of the circulatory, respiratory and digestive systems, as well as on musculoskeletal issues. Given the health status data from the survey, as well as secondary data, many of the region's chronic conditions and incidences of heart disease are significant.

The region's hospitals offer an extensive array of services and almost all of the services are common to more than one hospital or health system, which indicates that the region's healthcare delivery system is extensive.

Description	Utilization By Body System									
	CHS-MTH		CHS-Regional		CHS-WBGH		GWV		G-CMC	
	Cases	% of Total	Cases	% of Total	Cases	% of Total	Cases	% of Total	Cases	% of Total
Undefined	-	-	28	0.29%	-	-	13	0.09%	2	0.02%
Diseases & disorders of the nervous system	613	4.97%	557	5.70%	1127	6.72%	1,292	8.90%	1086	9.75%
Diseases & disorders of the eye	11	0.09%	15	0.15%	13	0.08%	17	0.12%	28	0.25%
Diseases & disorders of the ear, noise, mouth, and craniofacial	99	0.80%	137	1.40%	173	1.03%	91	0.63%	144	1.29%
Diseases & disorders respiratory system	1,164	9.43%	1157	11.84%	2281	13.60%	1,507	10.38%	1211	10.87%
Diseases & disorders circulatory system	993	8.05%	2811	28.77%	3219	19.19%	1,923	13.25%	2505	22.49%
Diseases & disorders digestive system	1,068	8.65%	1157	11.84%	1857	11.07%	1,233	8.49%	1061	9.53%
Disease & disorders of the hepatobiliary system and pancreas	330	2.67%	301	3.08%	510	3.04%	435	3.00%	357	3.21%
Diseases & disorders of the musculoskeletal system and other tissue	680	5.51%	983	10.06%	1690	10.08%	1,647	11.35%	1718	15.43%
Diseases & disorders of the skin, subcutaneous tissue and breast	371	3.01%	413	4.23%	588	3.51%	275	1.89%	412	3.70%
Endocrine, nutritional & metabolic disease	360	2.92%	288	2.95%	562	3.35%	362	2.49%	361	3.24%
Diseases & disorders of the urinary tract	484	3.92%	700	7.16%	881	5.25%	698	4.81%	505	4.53%
Diseases & disorders of the male reproductive system	25	0.20%	130	1.33%	69	0.41%	47	0.32%	23	0.21%
Diseases & disorders of the female reproductive system	215	1.74%	38	0.39%	176	1.05%	124	0.85%	34	0.31%
Pregnancy, childbirth & the puerperium	2,431	19.70%	3	0.03%	1250	7.45%	1,457	10.04%	7	0.06%
Newborns & other neonates with condition originally in perinatal period	2,435	19.73%	0	0.00%	85	0.51%	1,475	10.16%	0	0.00%
Diseases & disorders of blood, blood forming organs and immunology disorder	77	0.62%	141	1.44%	244	1.45%	196	1.35%	95	0.85%
Myeloproliferative diseases & disorders	33	0.27%	91	0.93%	102	0.61%	72	0.50%	38	0.34%
Infectious & parasitic diseases, systemic or unspecified sites	408	3.31%	619	6.34%	570	3.40%	625	4.31%	364	3.27%
Mental diseases or disorders	309	2.50%	17	0.17%	70	0.42%	21	0.14%	822	7.38%
Alcohol & drug use and drug induced organic mental disorders	36	0.29%	18	0.18%	679	4.05%	32	0.22%	49	0.44%
Injuries, poisonings & toxic effects other injuries and other complications of treatment	94	0.76%	85	0.87%	231	1.38%	153	1.05%	208	1.87%
Burns	2	0.02%	1	0.01%	3	0.02%	3	0.02%	5	0.04%
Rehabilitation aftercare other factors influencing health status	94	0.76%	57	0.58%	375	2.24%	740	5.10%	47	0.42%
Multiple significant trauma	3	0.02%	2	0.02%	5	0.03%	64	0.44%	53	0.48%
Human immunodeficiency virus infections	7	0.06%	22	0.23%	13	0.08%	15	0.10%	2	0.02%
Total	12,342	100.0%	9,771	100.00%	16,773	100.00%	14,517	100.00%	11,137	100.00%

## Patient Perception Study Survey

Respondents were asked to identify the hospitals they had visited in the past twelve months. More than 30% of respondents answered that they had visited Geisinger – Community Medical Center,



followed by Wilkes-Barre General Hospital (23%) and Geisinger Wyoming Valley (21%). About 15% visited Regional Hospital and 12% visited Moses Taylor Hospital.

Please identify the hospitals you have visited in the past 12 months.	
Hospital	Percent
Geisinger - Community Medical Center	30%
Regional Hospital of Scranton	16%
Moses Taylor Hospital	13%
Mid Valley Hospital	3%
Marian Community Hospital	2%
Wilkes-Barre General Hospital	23%
Geisinger - Wyoming Valley	21%

When asked about the overall environment of the region’s hospitals, 76% of respondents said it was either excellent or good. Just over 60% said that the quality of care delivered was either excellent or good.

How would you rate the overall environment of the hospitals you have visited?	
Responses	Percent
Excellent	30%
Good	46%
Average	16%
Fair	6%
Poor	2%

Doctors were rated as excellent or good by 60% of survey respondents, while slightly more (68%) of hospitals were rated as such. About 10% of respondents said that area doctors or hospitals were fair or poor.

How would you rate the overall quality of the hospitals you have visited?	
Responses	Percent
Excellent	16%
Good	44%
Average	29%
Fair	7%
Poor	4%

What do you think of the quality of the doctors in Lackawanna and/or Luzerne County?	
Responses	Percent
Excellent	19%
Good	49%
Average	24%
Fair	7%
Poor	2%

One quarter of respondents said they have received medical services outside Lackawanna and/or Luzerne County in the past five years.

Have you received medical services out of Lackawanna County and/or Luzerne County in the past 5 years?	
Response	Percent
Yes	25%
No	75%

This group of respondents tended to have higher incomes than those who did not receive services outside of the area. Additionally, there is a relationship between level of education and the tendency to leave the area for medical care. College graduates and those with graduate or professional degrees were slightly more likely to have sought care outside of Lackawanna and Luzerne Counties.

When responses from each county were compared, results showed that Luzerne County respondents were slightly more likely to have sought care out of the area than Lackawanna County respondents.

Respondents who indicated that they were employed or retired more often sought healthcare services outside area.

Respondents who indicated they received services outside of the area were asked where they chose to go for care. From a list provided on the survey, nearly 25% went to Geisinger Health System in Danville, while about 20% travelled to the Lehigh Valley Hospital. Nearly half of respondents chose “other,” indicating that they sought care someplace other than those listed.

If yes, where did you receive your health care services?	
Locations	Percent
Other	44%
Geisinger (Danville)	23%
Lehigh Valley Health System	19%
University of Pennsylvania	12%
Thomas Jefferson	4%
Rothman Institute	4%
Sloan Kettering Hospital	2%

Over 60% of respondents who sought care outside of the region visited a physician, while about one-third went for medical testing or hospitalization.

Please identify the type of services you received outside of Lackwanna County	
Services	Percent
Doctor Visit	62%
Medical Testing	34%
Hospitalization	28%
Inpatient Surgery	27%
Outpatient Surgery	19%
Other	11%
Pain Management	7%
Radiation Therapy	2%
Chemotherapy	2%

About one-fifth of respondents who sought care elsewhere said it was for general medicine. Other services most commonly received were orthopedic (16%), internal medicine (14%), cardiac (14%) and neurology (13 %).

Please identify the type of services you received outside of Lackwanna County and/or Luzerne County?	
Services	Percent
General Medicine	19%
Orthopedic	16%
Internal Medicine	14%
Cardiac	14%
Neurology (Brain or Spinal Cord)	13%
Oncology	10%
Eye/Ophthalmology	9%
Gynecology	8%
Trauma	4%
Ear	3%
Endocrine System	3%
Infectious Disease	3%
Pediatrics	2%
Mental Illness	2%
Obstetrics	1%
Alcohol & Substance Abuse	1%
Burns	1%

When asked why they left the area for care, over half of respondents indicated that although the service is provided in the community, they felt they could get better care elsewhere. Several respondents that selected “other” indicated they had been on vacation when they saw a doctor or sought hospital services outside the area. Others sited cost as the reason for seeking care elsewhere.

Please select your reasons for leaving the area for doctor services.	
Choices	Percent
Service is provided in the community but the quality of care that I received out of the area was better than I could have received locally	50%
Other	31%
Service not provided in the community	18%
Service was provided in the community but I could not access the service in a timely manner	7%

Please select your reasons for leaving the area for hospital services.	
Choices	Percent
Service is provided in the community but the quality of care that I received out of the area was better than I could have received locally	51%
Other	26%
Service not provided in the community	16%
Service was provided in the community but I could not access the service in a timely manner	6%

## Exports

### Blue Cross of Northeastern Pennsylvania (BCNEPA) / AllOne Health

Patient out-migration has had a significant impact on the economies of both Lackawanna and Luzerne Counties. Information gathered in this report was compiled from Blue Cross of Northeastern Pennsylvania's (BCNEPA) hospital export data and highlights annual changes in Lackawanna and Luzerne Counties from 2009-2011. BCNEPA's thirteen-county service area includes the following counties: Bradford, Clinton, Lycoming, Lackawanna, Luzerne, Tioga, Sullivan, Susquehanna, Wyoming, Carbon, Monroe, Wayne and Pike. This report covers in-patient and out-patient hospital visits outside of and within BCNEPA's service area, excluding Lackawanna and Luzerne Counties and their residents. Through the analysis of BCNEPA's hospital export data, clinical conditions, visits, patients and admits, facilities, and relative risk are summarized.

As per the U.S. Census Bureau's 2010 County Business Patterns Report, Lackawanna County reported 14,548 workers employed in some aspect of healthcare, while Luzerne County reported 20,695. According to Pennsylvania Department of Labor and Industry data, average regional wages were \$43,174 for those employed in health care in 2011. In 2011, four of the top five employers in Lackawanna County represented healthcare, compared with two of the top five employers in Luzerne County.

The broadly defined healthcare industry includes ambulatory healthcare services (physicians, therapists, out-patient care centers, medical and diagnostic laboratories, home health care and ambulances); hospitals; nursing and residential care facilities.

This industry sector is large for northeastern Pennsylvania and likely to grow, given the most recent mergers and acquisitions that leave the region with two major health care delivery systems. The resulting economic impact from the industry's direct investments and ancillary contributions by its employees results in billions to the regional economy.

## **Lackawanna County**

### *Out-Patient Medical Patients and Visits Outside of BCNEPA's 13-County Service Area*

From 2009-2011, Lackawanna County reported an increase in 2010 in both patients and visits, followed by a decrease in 2011 in the number of patients who sought out-patient care outside of BCNEPA's thirteen-county service area. In 2009, the total number of county patients seeking care outside of the area reached 36,229, but by 2011, this figure dropped 6% to 33,993.

From 2009-2010, there was a 7.5% increase in the number of outpatient medical visits outside the BCNEPA service territory and from 2010-2011 visits decreased 8.7%. Overall, there was a 1.8% decrease in visits from 2009 to 2011. In 2009, each patient averaged 1.5 visits; by 2011, however, that increased to 1.74 visits.

In 2010, the number of Lackawanna County residents who visited out-patient facilities outside of BCNEPA's thirteen-county service area increased for treatment for the following clinical conditions: musculoskeletal, preventive, infection, cardiovascular circulatory, gastrointestinal, cancer, and all other. In 2011, the total decreased, due to a steady decline in the number of patients seeking treatment and in the number of outpatient medical visits for respiratory, pregnancy or newborn related and other injuries.

Over the three-year-period from 2009-2011, Lackawanna County's percentage of mental health patients increased 14%, while diabetic patients increased 12%. There was a 24% decrease in injuries, followed by a 20% drop in respiratory issues. The number of patients with musculoskeletal injuries

declined from 2009-2011, however, there was an increase in the number of out of service area outpatient medical visits for musculoskeletal related conditions in 2010.

The number of out of service area visits for tumor related conditions decreased over the three-year-period from 2009-2011; however, there was an increase in the number of patients seeking treatment for tumor related conditions in 2010. Visits in relation to treatment for musculoskeletal related conditions were the highest of all clinical conditions (excluding the category of all other) for the entire three-year-period. Visits in relation to preventive treatment ranked second over the three-year-period (excluding the category of all other).

Clinical Condition Admit	Visits 2009	Visits 2010	Visits 2011	Patients 2009	Patients 2010	Patients 2011
Musculoskeletal	6,071	6,589	6,588	3,779	4,131	3,750
Preventive	5,242	5,885	5,299	4,551	4,991	4,340
Infection	4,354	4,639	4,601	3,416	3,449	3,358
Cardiovascular Circulatory	4,289	5,098	4,509	2,861	3,290	2,988
Gastrointestinal	4,076	4,840	3,977	2,873	3,312	2,683
Cancer	3,289	3,439	3,141	1,360	1,389	1,298
Mental Health	1,314	1,454	1,940	530	600	604
Injury Musculoskeletal	1,860	1,953	1,736	1,493	1,443	1,263
Respiratory	2,345	2,266	1,734	1,699	1,668	1,367
Pregnancy or Newborn	1,906	1,635	1,565	952	879	789
Diabetes	1,510	1,509	1,518	702	760	783
Tumors Benign Or Unspecified	1,422	1,323	1,131	998	1,030	858
Injury Other	1,182	1,124	878	1,037	989	784
All Other	14,795	15,934	14,038	9,978	10,427	9,128
<b>Total</b>	<b>53,655</b>	<b>57,688</b>	<b>52,655</b>	<b>36,229</b>	<b>38,358</b>	<b>33,993</b>

The top outpatient hospitals visited outside of BCNEPA's service area are listed in the following table, including the number of patients and visits. Geisinger Medical Center, Hospital of the University of Pennsylvania, and Hershey Medical Center were the top patient destinations. Gastrointestinal, musculoskeletal, and cancer were among the conditions treated most at these locations.

Top 10 Lackawanna County Outpatient Hospital Visit Locations Outside of BCNEPA 13 County Service Area by Location			
Rank	2009	2010	2011
1	Geisinger Medical Center (291/435)	University of Pennsylvania Hospital (301/490)	Hershey Medical Center (270/591)
2	University of Pennsylvania Hospital (244/383)	Geisinger Medical Center (272/388)	Geisinger Medical Center (218/299)
3	Children's Hospital of Philadelphia (181/302)	Children's Hospital of Philadelphia (182/334)	University of Pennsylvania Hospital (114/164)
4	Hershey Medical Center (165/248)	Hershey Medical Center (172/333)	Lehigh Valley Hospital (73/134)
5	Mount Nittany Medical Center (61/76)	Thomas Jefferson University Hospital (79/92)	Children's Hospital of Philadelphia (71/100)
6	Lehigh Valley Hospital (50/101)	Lehigh Valley Hospital (67/156)	Mount Nittany Medical Center (63/78)
7	Thomas Jefferson University Hospital (48/62)	Mount Nittany Medical Center (50/60)	Thomas Jefferson University Hospital (32/39)
8	Temple University Hospital (35/59)	American Oncological Hospital (47/134)	St. Luke's Hospital of Bethlehem (24/32)
9	Non PA Facility - Newark (35/50)	Sacred Heart Hospital (32/48)	Sacred Heart Hospital (19/34)
10	Presbyterian University PA Medical Center (35/ 40)	Temple University Hospital (29/35)	Muhlenberg Hospital Center (16/21)

Out-Patient Medical Visits and Patients Inside of BCNEPA's 13-County Service Area

From 2009-2011, Lackawanna County residents' out-patient medical visits inside BCNEPA's thirteen-county service area (excluding Lackawanna County) did not demonstrate as much variation as the residents' out-patient medical visits outside the service area. Both the number of patients seeking treatment and the number of medical outpatient visits steadily decreased over the three-year-period. In 2009, 41,113 Lackawanna County residents received care inside BCNEPA's service area (excluding Lackawanna County). In 2011, this number dropped to 26,800 patients —a 34.8% decline. The number of medical out-patient visits from 2009-2011 dropped from 74,790 to 52,599 —a 29.7% decline. Data pertaining to the number of insured patients were not available at the time of this study.

Lackawanna County Residents: Outpatient Medical Visits and Patients Inside of BCNEPA's 13 County Service Area						
Clinical Condition Admit	Visits 2009	Visits 2010	Visits 2011	Patients 2009	Patients 2010	Patients 2011
Musculoskeletal	11,082	11,474	10,211	3,345	3,100	2,580
Preventive	9,340	7,446	5,585	7,469	5,864	4,524
Infection	7,347	5,711	4,805	4,471	3,660	3,103
Cardiovascular Circulatory	8,286	6,705	4,668	5,113	4,096	2,998
Gastrointestinal	3,820	3,145	2,376	2,603	2,088	1,624
Cancer	1,398	1,262	1,187	750	627	519
Mental Health	2,759	2,952	2,884	786	708	707
Injury Musculoskeletal	1,769	1,842	1,728	787	689	588
Respiratory	2,157	1,962	1,459	1,091	955	762
Pregnancy or Newborn	1,299	1,040	788	506	400	309
Diabetes	1,929	1,697	1,267	1,175	959	740
Tumors Benign Or Unspecified	1,799	1,257	785	1,530	1,066	678
Injury Other	581	440	423	399	318	310
All Other	21,224	17,660	14,433	11,088	9,082	7,358
<b>Total</b>	<b>74,790</b>	<b>64,593</b>	<b>52,599</b>	<b>41,113</b>	<b>33,612</b>	<b>26,800</b>

The number of Lackawanna County residents with out-patient medical visits inside BCNEPA's service area decreased steadily from 2009-2011 in both the number of patients seeking treatment and the number of out-patient medical visits for the following clinical conditions: preventive, infection, cardiovascular circulatory, gastrointestinal, cancer, respiratory, pregnancy, diabetes, tumors benign or unspecified, other injuries and all others. There was also a steady decrease in the number of patients seeking treatment for musculoskeletal related visits; however, there was an increase in out-patient medical visits for musculoskeletal related conditions in 2010 followed by a decrease in 2011.

The same trend that occurred outside of BCNEPA’S service area also occurred inside the service area. Visits related to treatment for musculoskeletal related conditions were the highest of all clinical conditions (excluding the category of all other) for the entire three-year- period, while visits related to preventive treatment ranked second (excluding the category of all other). The greatest number of patients over the three years was treated for preventive services, followed by cardiovascular and infection.

The top outpatient hospitals visited inside of BCNEPA’s service area (number of patients and visits) are listed below, and include Wilkes-Barre General Hospital, Geisinger Wyoming Valley Medical Center, and Wayne County Memorial Hospital as top treatment destinations.

Top 10 Lackawanna County Outpatient Hospital Visit Locations Inside of BCNEPA 13 County Service Area by Location			
Rank	2009	2010	2011
1	Wilkes-Barre General Hospital (7,511/9,342) Geisinger Wyoming Valley Medical Center (2,383/4,078)	Wilkes-Barre General Hospital (5,316/7,735) Geisinger Wyoming Valley Medical Center (2,365/4,157)	Wilkes-Barre General Hospital (5,070/7,182) Geisinger Wyoming Valley Medical Center (1,942/3,707)
2	Wayne County Memorial Hospital (509/767)	Wayne County Memorial Hospital (624/975)	Wayne County Memorial Hospital (572/863)
3	Tyler Memorial Hospital (202/270)	Tyler Memorial Hospital (192/260)	Tyler Memorial Hospital (204/291)
4	Department of Veteran's Affairs (135/248)	Department of Veteran's Affairs (113/220)	Department of Veteran's Affairs (120/211)
5	Pocono Medical Center (106/160)	Pocono Medical Center (101/137)	Geisinger WMVC Rehab Unit (80/137)
6	Hazleton General Hospital (54/64)	Geisinger WMVC Rehab Unit (70/122)	Pocono Medical Center (76/98)
7	Geisinger South Wilkes-Barre (50/70)	Hazleton General Hospital (32/45)	Robert Packer Hospital (25/35)
8	Robert Packer Hospital (39/49)	Robert Packer Hospital (32/48)	Hazleton General Hospital (20/22)
9	Barnes Kasson County Hospital (27/33)	Endless Mountain Health System (11/13)	Barnes Kasson County Hospital (15/15)
10			

*In-Patient Admissions Outside BCNEPA’s 13-County Service Area*

Lackawanna County acute in-patient admits showed a slight, but consistent, decrease from 2009-2011 (9.3%). The only increase over the three years occurred among acute admits for cancer, which grew 25%.



Lackawanna County Residents: Inpatient Hospital Acute Admits Outside of BCNEPA's 13 County Service Area			
Clinical Condition Admit	2009	2010	2011
Musculoskeletal	69	71	51
Preventive	3	N/A	2
Infection	34	27	32
Cardiovascular Circulatory	61	49	50
Gastrointestinal	64	74	56
Cancer	76	77	95
Mental Health	62	56	61
Injury Musculoskeletal	16	9	6
Respiratory	8	9	8
Pregnancy or Newborn	20	19	15
Diabetes	11	3	10
Tumors Benign Or Unspecified	28	25	16
Injury Other	19	21	13
All Other	131	112	131
<b>Total</b>	<b>602</b>	<b>552</b>	<b>546</b>

Geisinger Medical Center and the Hospital of the University of Pennsylvania were among the top destinations for Lackawanna County residents seeking in-patient care treatment from 2009-2011. Gastrointestinal, musculoskeletal, cardiovascular circulatory were among the top conditions treated at the facilities listed in the table below.

Top 5 Lackawanna County Inpatient Hospital Admission Locations Outside of BCNEPA 13 County Service Area by Location			
Rank	2009	2010	2011
1	University of Pennsylvania Hospital	Geisinger Medical Center	Geisinger Medical Center
2	Geisinger Medical Center	University of Pennsylvania Hospital	University of Pennsylvania Hospital
3	Lehigh Valley Hospital	Lehigh Valley Hospital	Thomas Jefferson University Hospital
4	Thomas Jefferson University Hospital	Hershey Medical Center	Children's Hospital of Philadelphia
5	Kidspeace Children's Hospital	Thomas Jefferson University Hospital	Lehigh Valley Hospital

***In-Patient Admissions Inside BCNEPA's 13-County Service Area (excluding Lackawanna County)***

Inside BCNEPA's service area, acute admits over the period decreased by 15.3%, while musculoskeletal increased by 21.7% and pregnancy/newborn grew by 11.5%. Infection and cardiovascular admits declined by 26.3%.

Lackawanna County Residents: Inpatient Hospital Visits and Acute Admits Inside of BCNEPA's 13 County Service Area (Excluding Lackawanna County)			
Clinical Condition Admit	2009	2010	2011
Musculoskeletal	23	24	28
Preventive	N/A	N/A	N/A
Infection	19	11	14
Cardiovascular Circulatory	19	16	14
Gastrointestinal	16	19	13
Cancer	6	7	9
Mental Health	178	150	144
Injury Musculoskeletal	N/A	4	1
Respiratory	4	7	6
Pregnancy or Newborn	26	31	29
Diabetes	7	6	4
Tumors Benign Or Unspecified	14	8	9
Injury Other	7	4	5
All Other	46	30	33
<b>Total</b>	<b>365</b>	<b>317</b>	<b>309</b>

Geisinger Wyoming Valley Medical Center, First Hospital, and Clear Brook were the top in-patient destinations for Lackawanna County residents.

Top 5 Lackawanna County Inpatient Hospital Admission Locations Inside of BCNEPA 13 County Service Area by Location			
Rank	2009	2010	2011
1	Geisinger Wyoming Valley Medical Center	Geisinger Wyoming Valley Medical Center	Geisinger Wyoming Valley Medical Center
2	First Hospital	First Hospital	Clear Brook (62/79)
3	Clear Brook	Clear Brook	Wilkes-Barre General Hospital
4	Wilkes-Barre General Hospital	Wilkes-Barre General Hospital	First Hospital
5	Choices	Wayne County Memorial Hospital	John Heinz Institute

### Luzerne County Residents

The tables below depict the number of out-patient medical visits and patients among Luzerne County residents, both outside of and inside of BCNEPA's thirteen-county service area. Overall, visits and patients outside the area were much greater than visits and patients inside the area (excluding Luzerne County).

#### Out-Patient Medical Visits and Patients Outside BCNEPA's 13-County Service Area

From 2009-2011, Luzerne County reported a steady decrease in the number of residents who made out-patient medical visits outside BCNEPA's service area. In 2009, the total number of outpatient

visits outside the area reached 102,068, compared with 52,567 visits inside the area. In 2010, there was a 3% decrease in the number of out-patient visits. From 2010 to 2011, the number of visits declined by 13,731 visits or 14%. The number of out-patient visits dropped 16.5% from 2009 to 2011.

There was a steady decrease in the total number of patients and visits from 2009-2011 outside of BCNEPA's service area for the following clinical conditions: musculoskeletal, cardiovascular circulatory, gastrointestinal, cancer, musculoskeletal injuries, respiratory, pregnancy/newborn, diabetes, tumors benign or unspecified, other injuries, and all other. For preventive care, there were increases in the number of visits and patients in 2010, followed by a decrease. The number of patients treated for mental health related issues decreased steadily; however, the number of actual visits peaked in 2011. Patients treated for pregnancy or newborn health related issues and diabetes increased slightly in 2010. The highest ranking clinical issue in terms of visits over the course of the three years examined pertained to musculoskeletal conditions (excluding all other), followed by infection related treatments (this excludes the category of all other).

Luzerne County Residents: Outpatient Medical Visits and Patients Outside of BCNEPA's 13 County Service Area						
Clinical Condition Admit	Visits 2009	Visits 2010	Visits 2011	Patients 2009	Patients 2010	Patients 2011
Musculoskeletal	16,991	16,028	13,781	7,932	7,753	6,223
Preventive	7,714	8,878	8,716	6,417	7,293	7,122
Infection	10,632	10,731	9,880	7,232	6,922	6,484
Cardiovascular Circulatory	6,575	6,533	5,442	4,180	4,119	3,472
Gastrointestinal	7,193	7,111	5,686	4,994	4,852	3,898
Cancer	5,877	5,265	4,183	1,951	1,903	1,631
Mental Health	2,779	2,480	3,030	1,101	1,036	1,007
Injury Musculoskeletal	6,267	5,695	4,055	4,182	3,864	2,633
Respiratory	4,391	3,548	2,639	3,279	2,662	1,967
Pregnancy or Newborn	2,069	2,032	1,709	990	993	858
Diabetes	2,097	2,033	1,787	901	904	857
Tumors Benign Or Unspecified	3,248	2,946	2,562	2,414	2,251	1,926
Injury Other	2,408	2,055	1,475	2,135	1,805	1,287
All Other	23,827	23,593	20,252	15,263	14,528	12,056
<b>Total</b>	<b>102,068</b>	<b>98,928</b>	<b>85,197</b>	<b>62,971</b>	<b>60,885</b>	<b>51,421</b>

The top out-patient hospitals visited outside BCNEPA's service area are included in the table below. Geisinger Medical Center, Berwick Hospital, and Hershey Medical Center are the top destinations. Gastrointestinal, musculoskeletal, and cancer were among the top treated conditions at the facilities listed below.

Top 10 Luzerne County Outpatient Hospital Visit Locations Outside of BCNEPA 13 County Service Area by Location: 2009-2011			
Rank	2009	2010	2011
1	Berwick Hospital (951/1,264)	Berwick Hospital (1,080/ 1,498)	Berwick Hospital (936/1,311)
2	Hershey Medical Center (486/891)	Geisinger Medical Center (548/628)	Hershey Medical Center (563/1,087)
3	Geisinger Medical Center(420/708)	Hershey Medical Center (396/762)	Geisinger Medical Center (380/678)
4	Bloomsburg Hospital (327/427)	Bloomsburg Hospital ( 377/526)	Bloomsburg Hospital (333/459)
5	University of Pennsylvania Hospital (298/439)	University of Pennsylvania Hospital (348/537)	Lehigh Valley Hospital (280/431)
6	Lehigh Valley Hospital (195/301)	Lehigh Valley Hospital (276/446)	University of Pennsylvania Hospital (167/329)
7	Children's Hospital of Philadelphia (164/295)	Children's Hospital of Philadelphia (137/248)	St. Luke's Miners Memorial Hospital (103/157)
8	Non PA Facility - Newark (83/153)	American Oncological Hospital (102/256)	Children's Hospital of Allentown LLC (99/139)
9	St. Luke's Hospital - Bethlehem (83/112)	St. Luke's Miners Memorial Hospital (86/68)	American Oncological Hospital (49/116)
10	American Oncological Hospital (71/161)	Thomas Jefferson University Hospital (83/122)	Thomas Jefferson University Hospital (36/56)

**Out-Patient Medical Visits and Patients Inside BCNEPA's 13-County Service Area (excluding Luzerne County)**

Inside BCNEPA's service area (excluding Luzerne County), a similar trend occurred. In 2009, there was a grand total of 52,567 patient visits and by 2011 that dropped 25.6% to 39,109. Not only has the number of out-patient visits by Luzerne County residents dropped within and outside of BCNEPA's service area, but so has the number of patients treated. The number of out-patient medical visits inside BCNEPA's service area decreased 24.2% from 27,479 to 20,826.

Inside BCNEPA's service area, there was a steady decline in both the number of patients and visits for the following clinical conditions: musculoskeletal, preventive, infection, cardiovascular, gastrointestinal, cancer, mental health, musculoskeletal injuries, respiratory, pregnancy or newborn related, diabetes, tumors, other injuries, and all other.

Over the three years from 2009-2011, the greatest number of visits was for musculoskeletal (25,238) and mental health (19,773) problems. The greatest number of patients sought preventive (9,853) and musculoskeletal (9,488) care. Over the three-year-period, the greatest decrease in visits was for respiratory (33% decline) followed by injury musculoskeletal (31% decrease). The most significant patient declines were for injury musculoskeletal (36%) and respiratory (35%) care.

Luzerne County Residents: Outpatient Medical Visits and Patients Inside of BCNEPA's 13 County Service Area						
Clinical Condition Admit	Visits	Visits	Visits	Patients	Patients	Patients
	2009	2010	2011	2009	2010	2011
Musculoskeletal	9,546	8,741	6,951	3,610	3,149	2,729
Preventive	4,687	4,005	3,462	3,736	3,271	2,846
Infection	5,542	4,659	4,304	3,420	2,987	2,752
Cardiovascular Circulatory	3,196	2,785	2,322	1,842	1,590	1,401
Gastrointestinal	2,616	2,322	1,780	1,647	1,428	1,311
Cancer	1,893	1,551	1,357	631	581	469
Mental Health	6,894	6,463	6,416	1,686	1,500	1,392
Injury Musculoskeletal	1,344	1,077	906	801	582	515
Respiratory	1,465	1,154	932	1,021	713	659
Pregnancy or Newborn	649	547	447	308	268	216
Diabetes	649	614	544	361	349	338
Tumors Benign Or Unspecified	1,330	1,280	1,004	1,108	1,077	870
Injury Other	568	501	446	430	370	329
All Other	12,188	9,448	8,238	6,878	5,770	4,999
<b>Total</b>	<b>52,567</b>	<b>45,147</b>	<b>39,109</b>	<b>27,479</b>	<b>23,635</b>	<b>20,826</b>

The hospitals most visited for out-patient services were Moses Taylor Hospital, Regional Hospital, and Community Medical Center, in that order, for each of the three years.

Top 10 Luzerne County Outpatient Hospital Visit Locations Inside of BCNEPA 13 County Service Area by Location			
Rank	2009	2010	2011
1	Moses Taylor Hospital (943/1,506)	Moses Taylor Hospital (1,015/1,578)	Moses Taylor Hospital (1,021/ 1,537)
2	Regional Hospital of Scranton (793/1,191)	Regional Hospital of Scranton (793/1,206)	Regional Hospital of Scranton (677/985)
3	Community Medical Center (373/445)	Community Medical Center (308/352)	Community Medical Center (276/342)
4	Pocono Medical Center (233/304)	Pocono Medical Center (174/252)	Pocono Medical Center (220/223)
5	Gnaden Huetten Memorial Hospital (57/97)	Tyler Memorial Hospital (81/108)	Tyler Memorial Hospital (80/113)
6	Tyler Memorial Hospital (54/61)	Gnaden Huetten Memorial Hospital (49/66)	Gnaden Huetten Memorial Hospital (46/58)
7	Muncy Valley Hospital (42/49)	Williamsport Hospital (42/59)	Williamsport Hospital (33/56)
8	Williamsport Hospital (38/50)	Marian Community Hospital (29/35)	Palmerton Hospital (32/40)
9	Palmerton Hospital (32/39)	Divine Providence Hospital (23/36)	Wayne County Memorial Hospital (27/31)
10	Wayne County Memorial Hospital (31/41)	Palmerton Hospital (20/26)	Marian Community Hospital (22/26)

*In-Patient Admissions Outside BCNEPA's 13-County Service Area*

Acute in-patient admits outside BCNEPA's service area show a slight, but consistent, decrease over the three-year-period. The number of admits dropped from 1,002 in 2009 to 824 in 2011 – an 18 % decrease.

Luzerne County Residents: Inpatient Acute Admits Outside of BCNEPA's 13 County Service Years 2009-2011			
Clinical Condition Admit	2009	2010	2011
Musculoskeletal Total	123	128	100
Preventive Total	N/A	1	2
Infection Total	48	70	49
Cardiovascular Circulatory Total	129	134	121
Gastrointestinal Total	100	95	75
Cancer Total	106	79	76
Mental Health Total	80	76	83
Injury Musculoskeletal Total	22	20	21
Respiratory Total	20	12	15
Pregnancy or Newborn Total	103	94	75
Diabetes Total	15	13	7
Tumors Benign Or Unspecified Total	28	34	30
Injury Other Total	32	32	18
All Other Total	196	188	152
Total	1,002	976	824

Lehigh Valley Hospital and Geisinger Medical Center received the greatest number of in-patients from Luzerne County over all three years examined. Gastrointestinal, cardiovascular circulatory, and pregnancy or newborn were among the top conditions treated at the hospitals in the below table.

Top 5 Luzerne County Inpatient Admission Locations Outside of BCNEPA 13 County Service Area by Location			
Rank	2009	2010	2011
1	Lehigh Valley Hospital	Lehigh Valley Hospital	Lehigh Valley Hospital
2	Geisinger Medical Center	Geisinger Medical Center	Geisinger Medical Center
3	Berwick Hospital	University of Pennsylvania Hospital	Berwick Hospital
4	Hershey Medical Center	Berwick Hospital	Hershey Medical Center
5	University of Pennsylvania Hospital	Hershey Medical Center	Bloomsburg Hospital

*In-Patient Admissions Inside BCNEPA's 13-County Service Area (excluding Luzerne County)*

Acute patient admits decreased over the three-year-period by 35.66%. Pregnancy/newborn, mental health and cardiovascular were the top three admits in 2011 and over the entire three-year-period.

Luzerne County Residents: Inpatient Acute Admits Inside of BCNEPA's 13 County Service Years: 2009-2011			
Clinical Condition Admit	2009	2010	2011
Musculoskeletal Total	20	19	17
Preventive Total	N/A	N/A	N/A
Infection Total	29	10	13
Cardiovascular Circulatory Total	51	28	32
Gastrointestinal Total	47	28	19
Cancer Total	7	12	6
Mental Health Total	50	31	36
Injury Musculoskeletal Total	6	3	1
Respiratory Total	4	1	3
Pregnancy or Newborn Total	50	72	54
Diabetes Total	5	4	6
Tumors Benign Or Unspecified Total	6	2	1
Injury Other Total	5	4	2
All Other Total	45	23	19
<b>Total</b>	<b>325</b>	<b>237</b>	<b>209</b>

Luzerne County residents most frequently sought inpatient care at Moses Taylor Hospital, Community Medical Center and Regional Hospital, all in Lackawanna County.

Top 5 Luzerne County Inpatient Admission Locations Inside of BCNEPA 13 County Service Area by Location			
Rank	2009	2010	2011
1	Moses Taylor Hospital	Moses Taylor Hospital	Moses Taylor Hospital
2	Community Medical Center	Community Medical Center	Community Medical Center
3	Regional Hospital of Scranton	Regional Hospital of Scranton	Regional Hospital of Scranton
4	Marworth	Marworth	Marworth
5	Pocono Medical Center	Pocono Medical Center	Pocono Medical Center

### Admissions/Visits by County

The next set of tables displays visits by county for both Lackawanna and Luzerne Counties. The figures are derived from the number of times each county was listed in BCNEPA's hospital export data. Thus, the number does not correlate with the number of in-patient visits (as there were multiple patients seen in each county and at multiple facilities within each county). The data show that Lackawanna and Luzerne Counties have a reciprocal relationship.

From 2009-2011, Lackawanna County residents most frequently received in-patient care in Luzerne County. Lackawanna County residents also sought care in Wayne, Monroe and Bradford Counties.

Lackawanna County Residents Inpatient Hospital Visits (inside of BCNEPA 13 county service area excluding Lackawanna County)			
Facility County	2009	2010	2011
Bradford	5	4	4
Carbon	N/A	1	N/A
Luzerne	39	38	31
Monroe	7	4	7
Susquehanna	1	1	N/A
Wayne	7	7	6
Wyoming	N/A	2	1
Missing (PA)	3	2	2

Also, Lackawanna County residents most frequently received out-patient treatment in Luzerne County. Lackawanna County residents also sought out-patient care in Susquehanna and Bradford Counties.

Lackawanna County Residents Outpatient Hospital Visits (inside of BCNEPA 13 county service area excluding Lackawanna County)			
Facility County	2009	2010	2011
Bradford	16	13	15
Carbon	5	4	N/A
Clinton	6	3	4
Luzerne	65	69	63
Lycoming	8	9	7
Monroe	14	14	14
Susquehanna	18	16	15
Tioga	2	1	3
Wayne	14	14	14
Wyoming	N/A	14	13
Out of Area	12	N/A	N/A
Missing	1	N/A	N/A

Likewise, between 2009-2011, Luzerne County residents most frequently received in-patient care in Lackawanna County. Luzerne County residents also received in-patient care in Carbon and Lycoming Counties.



Inpatient Hospital Visits (Inside BCNEPA 13 county service area excluding Luzerne County)			
Facility County	2009	2010	2011
Bradford	12	13	13
Carbon	18	22	21
Clinton	3	N/A	4
Lackawanna	63	64	67
Lycoming	35	32	30
Monroe	15	14	14
Susquehanna	3	5	2
Tioga	4	3	4
Wayne	10	7	11
Wyoming	13	12	13

Luzerne County residents most frequently received out-patient care in Lackawanna County, and also received care in Carbon and Lycoming Counties.

Luzerne County Residents Outpatient Hospital Visits (Inside BCNEPA 13 county service area excluding Luzerne County)			
Facility County	2009	2010	2011
Bradford	12	13	31
Carbon	18	22	21
Clinton	5	N/A	4
Lackawanna	63	64	67
Lycoming	35	32	30
Monroe	15	14	14
Susquehanna	3	5	2
Tioga	4	3	N/A
Wayne	10	7	11
Wyoming	13	12	13

### Admissions/Visits by State

The table below identifies the top five states in which Lackawanna County residents received treatment for in-patient hospital visits. Similar to Luzerne County residents, the top-ranking state for Lackawanna County residents was Pennsylvania, followed by New York.

Lackawanna County Residents Outpatient Hospital Visits (Inside BCNEPA 13 county service area excluding Lackawanna County)			
State	2009	2010	2011
PA	154	184	132
NY	18	21	24
MD	12	5	7
FL	9	12	6
NJ	4	19	19

The table below summarizes the top five states in which Luzerne County residents received treatment for in-patient hospital visits. The data in this table was gathered through the number of times each state appeared in BCNEPA’s hospital export data. By far, Pennsylvania is the top-ranking state, followed by New York and Maryland.

Luzerne County Residents Outpatient Hospital Visits (Inside BCNEPA 13 county service area excluding Lackawanna County)			
State	2009	2010	2011
PA	187	198	179
NY	22	16	14
MD	13	10	7
FL	8	8	12
NJ	6	9	9

### Relative Risk

Relative risk, also referred to as risk ratio, compares risks of occurrences of one group with those of another group. In this analysis, relative risk compares Lackawanna and Luzerne County residents in relationship to patients with in-patient admissions outside of BCNEPA’s thirteen-county service area and the risk score of the population who had in-patient admissions inside the service area. The scale range is as follows: 750 and higher indicates those patients in the crisis range, 251-749 indicates those who are struggling, 81-250 indicates those patients at risk, 21-80 indicates stability, and 0-20 indicates a healthy range.

BCNEPA’s relative risk score shows a decrease across the board in the grand total of visits and the number of patients receiving treatment inside and outside of BCNEPA’s service area. However, the number of visits outside of BCNEPA’s service area is much higher than visits inside the service area. Both Lackawanna and Luzerne County residents with out of area admissions had an overall higher relative risk score from 2009-2011 than those residents without out of area admissions. The concurrent relative risk score for Lackawanna County residents with an in-patient hospital admission

outside BCNEPA service area was 483.65, whereas the concurrent relative risk score for Lackawanna County residents with an in-patient or out-patient hospital admit inside the service area was 286.34. This trend of a higher relative risk score for Lackawanna County residents with an in-patient hospital admit outside BCNEPA's service area was relatively similar to the trend among Luzerne County residents. Therefore, more high risk cases or severe illness/injury cases were seen outside the service area.

The concurrent relative risk score for Luzerne County residents with in-patient hospital admissions outside BCNEPA's service area was 491.04 and the concurrent relative risk score for Luzerne County residents with in-patient hospital admits inside the service area was 322.91. Based on the scale range, all of these patients were beyond the "at risk" range. However, it appears the higher risk cases were seen outside of the region.

### **Pennsylvania Health Care Cost Containment Council**

After reviewing hospitalization only data from the Pennsylvania Health Care Cost Containment Council from 2010 – 2012 (first three quarters of each year only), Lackawanna County data showed that 7.4% of the total cases of Lackawanna County residents were hospitalized outside of the two county area in 2010 and by 2012, that number increased to 8.6%. This resulted in 5,940 hospitalizations outside of the region. The dollar value of lost local revenue was \$347 million or an average of 17.3% of the overall hospitalization costs. Geisinger Danville, Wayne Memorial, and Lehigh Valley saw the most Lackawanna County residents.

Luzerne County data showed that 13.6% of the total cases of Luzerne County residents were hospitalized outside of the two county area in 2010 and by 2012 that number increased to 14.6%. This results in 15,521 hospitalizations outside the region. The dollar value of the lost local was \$866.6 million or an average of 20% of the overall hospitalization costs in that time period. In Luzerne County, Geisinger Danville and Lehigh Valley Hospital saw the most Luzerne County residents.

The data does not identify the type of hospitalization by the facilities out of the area, however there is a record of the type of hospitalization overall. For both counties, the highest admits were for circulatory (number one for each year in both counties) from 15% - 17% of all hospitalizations. This was followed by musculoskeletal (10% - 12%) and respiratory (10% - 11%).

Data for outpatient services was not available. The PHC4 data is more specific to the geographic region of service by resident, yet this data only covers hospitalizations not testing, outpatient services or doctor visits. Therefore, the overall lost revenue is higher than what is presented here.

## **Conclusion**

Despite the fact that the AllOne Health data demonstrate some decreases in health care exports, it is, however, too early to tell if this downward trend will continue, if it is an anomaly attributable to the recession, or if it is a product of the data covering a broader region. The PHC4 data, while identifying services by residents in the study region, only cover a portion of healthcare, yet are demonstrating increasing hospitalizations occurring outside of the economic region.

Survey data points to a patient perception issue. Even if the facts are not true, patient perception is true to the patient. Therefore, proper channeling of education is the key to enabling the patient to make more informed decisions. This is especially critical since the region's healthcare infrastructure has changed significantly over the past two years.

It is unrealistic to expect to reduce the number of exports to zero, however the new local healthcare infrastructure has an incredible opportunity to educate and inform the citizenry of the two-county area about the quality and the availability of state-of-the-art providers, treatments, and facilities compared with those outside the region. This should lead to some reduction in exports, which will lead to strengthening the region's healthcare infrastructure and growing this economic cluster.