

The Economic Impact of a Regional University Revisited 1

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Being Underinsured in Kansas 14

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Abstract

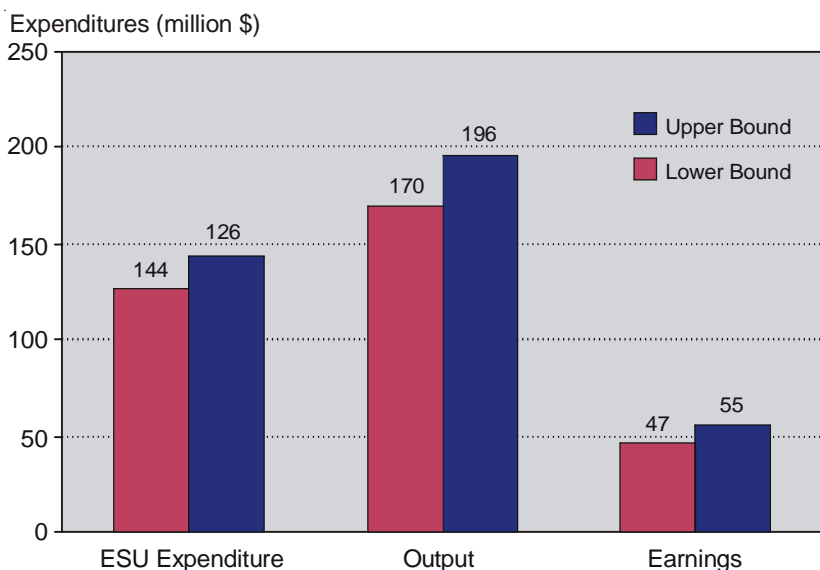
This study examines the economic linkages of university expenditures on the local and state economy of Kansas using regional multipliers from an input-output model. In fiscal year 2004, Emporia State University and its ancillary units injected between \$85 and \$98 million into the local economy generating between \$101 and \$116 million in additional output, between \$30 and \$35 million in earnings, and between 1,341 and 1,557 jobs in the Emporia area (consisting of seven counties, e.g., Chase, Coffey, Greenwood, Lyon, Morris, Osage, and Wabaunsee). In FY 2004, ESU, its ancillary units (ESU Athletics, National Teachers' Hall of Fame, Memorial Union, ESU Foundation, ESU bookstore, ESU dining services, student organizations and local agencies), students, and visitors directly injected between \$126 and \$144 million into the state economy, generating between \$170 and \$196 million additional output, between \$47 and \$55 million in earnings, and between 2,075 and 2,420 jobs in Kansas (see Figure 1). Emporia State University's output and earnings multipliers on average are 1.35 and 0.37, respectively, implying for every dollar of university related expenditure there is an additional \$1.35 output and \$0.37 household income generated throughout the state. Hence, with the direct payrolls of \$47.4 million, the university's total impact on household income built through recirculation is approximately \$64.9 million. The university's employment multiplier is 1.44, which implies that for every job the university creates there are 1.44 additional jobs in the state economy.

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Figure 1. Impact of Emporia State University Expenditure on Output and Earnings in Kansas, FY 2004



Introduction

Colleges and universities often exert significant influence on the urban and regional communities in terms of income/expenditure flows and employment generation. These institutions of higher learning purchase goods and services, hire workers, produce and sell education, art, entertainment, housing, and food services to the local population. These economic activities have a ripple effect on the local economy as other economic sectors continue to respond to the increased demand for additional goods and services. The economic impact study of a university is useful to the university administrators to demonstrate the real value of their institution to local business people, legislators, and the general public. These studies are important because the audiences are interested in understanding the relationship between the economic impact of the University and its tax support. It is also important for the taxpayers to know the economic return they are getting from each dollar of their tax support (Lichty and Jesswein, 1978).

The major objective of this study is to report the economic impact of a regional university on the local economy. Emporia State University (ESU) is primarily a 4-year undergraduate regional university, located in Emporia, Kansas, a rural community of 26,500 people. With a student population of 6,000 (75 percent are full-time and residential), the primary objective of ESU (typical for a regional university in the nation) is

excellence in teaching, where creativity and research by the faculty are recognized and service to the community is encouraged. Although this study applies conventional tools (input-output model) for estimating impact multipliers, the contribution of the current study lies in its empirical application and interpretation of the output, earnings, and employment multipliers. These multipliers represent the general magnitude of influences by any regional university of similar size, mission, and funding on the local economy. Also, this study uses the most current multipliers supplied by BEA based on the national I-O Model using 2003 regional account data.

Although the primary mission of the University is to enhance the intellectual quality and personal development of Kansans, each year the University injects millions of

dollars into the local and state economy through direct purchases of goods and services. The University community consists of students, employees, and their families who consume local goods and services exerting a significant influence on the local economy. Unlike the previous studies by Chakraborty and Edmiston (2001, 2003), the current study defines the local economy of the ‘Emporia area’ as a seven-county region—Chase, Coffey, Greenwood, Lyon, Morris, Osage, and Wabaunsee counties. For the earlier studies mentioned above, the authors defined the local economy as a one-county region (Lyon County, Kansas) while in reality most of the economic activities were spread over the seven-county region. For example, in FY 2004 sixty-six percent of the student population came from this seven-county region and the majority of ESU expenditures are directed to these counties. In theory, the magnitude of impact multipliers differs significantly based on the definition of the economic regions.

University research grants inject out-of-state research dollars into the state economy. The presence of ESU insures education and payroll dollars stay in Lyon County and the state of Kansas. The greatest economic impact of ESU is offering low cost, high quality education to thousands of young people of Kansas, enhancing their productivity by augmenting their skills, perspectives, and abilities. Long-term intangible benefits of education such as lifetime earnings of ESU graduates, value of their contributions to national politics and culture, benefits of infrastructure, and parks

and recreational facilities built due to the existence of the University, etc., are difficult to measure. This study includes only the short-term economic impact, using interindustry procedures to derive the upper bound of the financial impact of ESU on the Kansas economy for fiscal year 2003-04. The upper-bound estimate assumes there is no reasonable substitute for ESU within the state. This assumption implies that if ESU did not exist, all of its students would have left Kansas to obtain a similar educational experience and thus, all of the ESU economic activities are exogenously determined. However, the students' survey revealed that eight percent of the respondents are either out-of-state or international students. Further, thirteen percent of the respondents expressed they would have studied out-of-state if ESU did not exist. Therefore, necessary adjustments were made to expenditures by the ESU and its ancillary units for the lower bound estimates. The lower bound is based on the assumption that the university is at least partially substitutable by other institutions of higher learning within the state.

The next section discusses the method of analysis. The dataset is explained in the section after that, followed by a discussion of the economic impact of university expenditures. Finally, the summary and conclusions are presented.

Method of Analysis

ESU's expenditures provide a source of income and employment for the local as well as state economy of Kansans. For FY 2004, the University and its ancillary units directly affect the economic activity in the state by employing 1,599 faculty, staff, and students and by spending more than \$73 million on construction, equipment and supplies, and goods and services necessary for school operation. These expenditures create an indirect economic 'multiplier effect' on the local economy arising from consumer spending of faculty, staff, students, and out-of-state residents who come to ESU to visit students or attend University-sponsored events. The multiplier effect of university spending is the sum of direct, indirect, and induced impacts on the local economy. ESU attracts students and visitors, pays wages and salaries to its employees, and purchases goods and services. Students and visitors also purchase goods and services. All these activities generate output, income, and employment for the local business, households, and government.

Ever since the study by Caffrey and Issacs (1971), there have been several studies investigating economic impacts of university systems on the local economy (Girling et al., 1993; Gazel, 1994; Trewyn, 1995, 1998; Beck et al., 1995; Harris, 1997; Agapoff and Harris,

2000; Woodward and Coffman, 2001; Pittsburgh State University, 2002; Chakraborty and Edmiston, 2001, 2003; Humphreys, 2005; Marshall University, 2006; and University of Maryland, Baltimore, 2006). The most commonly used technique for forecasting economic impact of a university system has been Leontief's (1936) input-output analysis. The input-output model breaks down the total university-related expenditures into detailed economic sectors. Each sector is dependent to some degree upon other sectors. If there is a change in the level of activity in one sector, this will directly or indirectly cause a change in the level of production in other regional sectors. The amount of economic activity among different economic sectors measures the degree of interrelationship between sectors. These interdependencies among regional economic sectors can be estimated through interindustry or input-output analysis based on a transaction matrix and direct requirement matrix. A simple input-output model is produced in Appendix A.

The Data on University-Related Revenue and Expenditures

Economic impact analysis using RIMS-II requires extensive detail on the sources and nature of expenditure data. While only the data on expenditures are used in the impact analysis, the information on sources and amount of revenues are also presented in this study. This section assembles the revenue and expenditure data from the operation of Emporia State University and its ancillary units. Final demand estimates are expenditures within each local, economic sector. This requires initially identifying incomes and expenditures for the University and its ancillary units, and expenditures by the students and visitors. For operating revenues, only ESU and its ancillary units were considered. For operating expenditures, spending by students and visitors, athletics, the National Teachers Hall of Fame, the Memorial Union, the ESU Foundation, the University bookstore, and dining services were considered.

Operating Revenue

Information on operating revenue for the University and its ancillary units was collected from the ESU Annual Financial Report, FY 2004. Table 1 reports operating revenues for ESU and its ancillary units for fiscal year 2003-04. In FY 2004, University-generated funds amounted to \$34 million and the state appropriation was \$29.6 million. The total revenue was \$84.8 million, which included revenues of student organizations and local agencies, athletics, the Memorial Union, and the ESU Foundation. As a percentage of total revenue in FY 2004, tuition and fees accounted for 26.2

Table 1. Operating Revenue of ESU and Its Ancillary Units, FY 2004

Description of Expenditures	(mill. \$)
1. University generated	34.081
2. State appropriations	29.630
3. Student organizations and local agencies	6.175
4. Athletics	1.535
5. Memorial Union	2.640
6. ESU Foundation	10.730
Total	84.791

Source: ESU Annual Financial Report FY 2004.

percent, state appropriations 48.5 percent, and grants, contracts and others 25.3 percent (source, Office of Vice President for Academic Affairs).

Operating Expenditures

One of the major tasks in an economic impact study is the identification of all direct expenditures in the local economy by various sources. Table 2 reports University-related direct expenditures and expenditures by the ancillary units, students, and visitors for FY 2004. The upper bound (unadjusted) for the

Table 2. Direct Expenditure by ESU and Its Ancillary Units, FY 2004^a

Description of Expenditures	Upper Bound (mill. \$)	Lower Bound (mill. \$)
1. University ^b	64.130	58.999
2. Athletics	1.739	1.739
3. Teachers' Hall of Fame	0.189	0.189
4. Memorial Union	0.401	0.401
5. ESU Foundation ^b	4.805	4.420
6. ESU bookstore	0.309	0.309
7. ESU dining services ^c	1.538	1.338
8. Student expenditures ^c	60.024	52.222
9. Visitor expenditures ^d	11.396	7.065
Total	144.531	126.682

Source: ESU Annual Financial Report FY 2004 and Faculty and Student Survey.

^a Only expenditures amounting to real transactions are reported after necessary adjustments in consultation with the university budget officials. For dining service and bookstore only operating expenditures are reported.

^b Reduced by eight percent for out-of-state and international students for lower bound.

^c Reduced by 13 percent for students willing to study out-of-state if ESU does not exist for lower bound.

^d Reduced by 38 percent for local visitors for lower bound.

university-related direct expenditures totaled \$144 million, of which \$65.8 million was from University operations. University expenditures include operating expenditures of various schools and colleges; investment in plant, land, buildings, and non-structural improvements; athletics; and the National Teachers Hall of Fame. In addition to University expenditures, independent expenditures by the National Teachers Hall of Fame, the Memorial Union, ESU Foundation, the University bookstore, and dining services are also included in total University-related expenditures. The lower bound (adjusted) expenditures are reported in column 3. The major portion of University-related direct expenditures was student and visitor expenditures, which was \$71 million. These expenditures are discussed below.

Student Expenditures

Student expenditures were determined from a student survey administered during Spring 2004. A total of eighty-five undergraduate and graduate courses were randomly selected from the ESU Spring 2004 class catalog. A total of 5,000 surveys were distributed to the instructors of those selected classes to administer. After deleting surveys with incomplete and missing information, 1,028 surveys were used in this study. Ninety-three percent of the respondents are undergraduates, 65 percent are female, and 91 percent are full-time students whose expenditure pattern is not significantly different from the part-time students in the sample. For the University as a whole, 63 percent of the students are undergraduates, 70 percent are full-time, and 65 percent are female. We recognize that over representation of full-time undergraduate students in our sample may overstate student expenditure in this study.

In estimating total direct student expenditures for the fiscal year beginning July 2003 and ending June 2004 (FY 2004), student enrollment for Fall 2003, Spring 2004, and Summer 2004 was considered. Table 3 reports student expenditures by category and its proportion in relation to total monthly expenditures.

In order to include each item of student expenditures (reported on the student survey) the current study used a more comprehensive approach than the study by Chakraborty and Edmiston (2001). For example, a small percentage of respondents reported a relatively high amount of expenditures on house payments, real estate and other taxes, and child care. The aggregated total expenditures on these items were distributed over the entire sample and reported as an average monthly expenditure for each student. For example, 7.3

Table 3. Summary of Student Expenditures, by Category, from Survey^a

Description of Expenditures	Average Monthly Expenditure (\$)	Percentage of Total
1. House rent	284	16.69
2. House payment	37	2.17
3. Residence maintenance/repair	61	3.58
4. Real estate and other taxes	8	0.47
5. Utilities	130	7.64
6. Food and beverage at home	112	6.58
7. Food and beverage away from home	55	3.23
8. Automobile payments	243	14.28
9. Automobile repairs	55	3.23
10. Automobile gasoline	65	3.82
11. Insurance	104	6.11
12. Health expenses	60	3.53
13. Personal items	62	3.64
14. College tuition and fees ^b	312	18.33
15. College books and supplies	95	5.58
16. Child care	12	0.71
17. Others	7	0.41
Total	1,702	100.00

^a Based on 1028 observations, all expenditures are in current dollars. A small percentage of students had reported expenditures on house payment, real estate and other taxes, and child care.

^b Students' expenditure on tuition is a source of revenue for the ESU, hence, is not included in the impact study to avoid double counting.

percent of the respondents reported an average monthly house payment of \$508, and 4.2 percent reported an average monthly expenditure on child care of \$283. When these expenses are distributed over the entire sample (1,028 respondents) the average monthly expenditure for all students for house payments and child care was reduced to \$37 and \$12, respectively (Table 3).

A major part of student expenditures was college tuition and fees (18.3 percent not included for impact analysis) followed by rent (16.7 percent) and automobile payments (14.3 percent). On average, ESU students spend a total of \$1,702 per month including tuition and fees and \$1,390 per month excluding tuition and fees. A total of 15,262 students were enrolled at ESU in fiscal year 2003-04 (Fall 2003, 6,278; Spring 2004, 5,856; and Summer 2004, 3,128). However, in estimating total student expenditures in FY 2004, expenditures for 669 student employees (employed by ESU and its ancillary units) were excluded to avoid double counting. This is because the expenditures (or income earned) by these student employees are reported as 'wages and salaries' under 'operating expenditure' by the University and its ancillary units. The university's expenditures on 'salary and wages' are included in the 'household'

sector in Table 5. In determining total student expenditures for fiscal year 2004 it is assumed that the students enrolled for fall and spring semesters spend \$1,390 per month for a period of four months on average per semester, and students enrolled for summer spend same amount per month for three months.

Total student expenditures (other than tuition) for FY 2004 were estimated as \$77 million of which \$60 million were expended within the boundaries of Kansas. Student expenditures within the seven-county region (Emporia area), which is the home of 66 percent of the ESU students, is \$39.6 million and the rest of the amount was expended in Kansas, outside the Emporia area. It was revealed from students' survey that 92 percent of those who responded are Kansans and 13 percent of all respondents would have studied at some other institution out of state if ESU had not existed. It is recognized in this study that the majority of the students would have studied at some other institutions of higher learning in Kansas if ESU did not exist. As a result, the impact analysis uses two sets of estimates; the upper-bound and the lower-bound. The upper bound estimate assumes there is no reasonable substitute for the ESU and the state education dollars and other

private funds do not have any alternative investment in the state. The lower bound estimate assumes there are substitutes available for ESU and most of the students would have studied in another institution of higher learning in the state if ESU did not exist.

Visitor Expenditures

Visitor expenditures were derived based on information obtained from three sources: (1) the faculty and student survey, (2) the athletics department, and (3) the Emporia area Chamber of Commerce and Visitor's Bureau. Visitors to the University were classified as fans attending athletic events, participants at cultural events, conferences/seminars, continuing education programs, and visiting friends and families of students, faculty, and staff. Basic information on the total number of local visitors, average stay per visit, and average expenditures per day per visit for both local and out-of-state visitors was obtained from the student and faculty survey. However, in estimating the total number of out-of-state visitors, information from the athletics department and Emporia Visitor's Bureau was used in addition to the information obtained from the student and faculty survey.

Visitors whose primary purpose of visit to Emporia was for attending an event or activity sponsored by ESU were less likely to be reported either by the athletics department or by the student/faculty survey and were included from the information provided by the Emporia Convention and Visitor’s Bureau. Daily visitor expenditures by category were determined based on information provided by the Emporia Convention and Visitor’s Bureau (Kansas Department of Commerce & Housing, 1998) and from the authors’ personal discussions with the experts in the hospitality industry in town. Table 4 reports information on visitor expenditures.

In FY 2004, 88,137 local and 30,743 out-of-state visitors visited Emporia to attend University-sponsored

activities or events. On the average, local visitors stayed 1.87 days and out-of-state visitors stayed 4.41 days per visit. Average expenditures per day per visit for local visitors and out-of-state visitors were \$26.24 and \$52.16, respectively. Total visitor expenditures were \$11.4 million in FY 2004, and more than 62 percent of this expenditure was made by out-of-state visitors.

obtained for both the Emporia area (seven-county region) and the State of Kansas. In order to apply RIMS II multipliers (using ‘changes in the bill-of-goods’ method) all purchases/expenditures were converted into regional purchases in producers’ prices and then multiplied by the final demand multipliers for output, earnings, and employment to yield the impacts.²

Table 5, column 2 displays the disaggregation of the University’s total expenditures into 18 economic sectors, which is derived from an aggregation of 60 regional economic sectors (RIMS II). The upper bound expenditures are reported in the upper half and the lower bound is in the lower half of Table 5. At first, the nature and amount of each item of expenditure were identified from a list of ‘object code’ (maintained by the ESU Budget Office) and were assigned to one of the 473 industry sectors grouped into 126 sub-groupings (original Appendix B of RIMS-II not reported in this paper). These expenditures were then further identified with the 60 industry groupings (also called economic sub-sectors) based on the North American Industrial Classification System (NAICS) code as per the detailed list provided by BEA for their input-output model. Once all expenditures are assigned to one of those 126-industry groupings (for 473 industries), they were aggregated to 60 sectors (Appendix B in this paper, but Appendix C in RIMS-II) for which multipliers are available. However, before applying multipliers (now disaggregated to 60 economic sub-sectors), these sectors were further aggregated to 20 sectors (based on Appendix-D of RIMS-II) and reported in column 2 of Table 5. Since no expenditure was reported for sectors such as ‘Mining’ and ‘Management of Companies and Enterprises,’ the total number of economic sectors reported in Table 5 is an 18-row industry aggregation.

Not all of the University expenditures were made within the boundaries of the state because some goods and services were purchased from out-of-state; therefore, those expenditures would not have any impact on the state economy. For example, most of the expenditures related to supplies for bookstore and dining services were made out-of-state while only operating expenditures were made locally. After consultation with officials in the University budget department, athletics department, bookstore, and dining services, it was determined that on average (except for certain sectors) eleven percent of all University expenditures went out of state. Out of 89 percent of the expenditures that remained within the state boundaries, a major part of the University expenditures were made within the Emporia area. The percentage of total expenditures made in the Emporia area (on average 70 percent of the 89 percent that remained within the state) was determined based on information collected from the

Table 4. Visitor Expenditures: Local and Out-of-State, FY 2004

Description	Local	Out-of-State
Total number of visitors	88,137	30,743
Total visitor days	164,816	135,577
Average stay per visit (days)	1.87	4.41
Average expenditure per day per visit (\$)	26.24	52.16
Total expenditure (\$)	4,324,777	7,071,677

Economic Impact of the University

Economic impacts are translated through the effect of multipliers. For example, the expenditures on sectors associated with high multipliers would transmit higher economic impact than sectors with low multipliers. Multipliers used in this study are provided by the RIMS-II (Regional Input-output Modeling System), Bureau of Economic Analysis, Washington D.C.¹ RIMS-II multipliers were generated based on the Input-Output model of Kansas’ economy linked to the national economy. Of the two sets of multipliers provided by RIMS-II, this study uses final demand multipliers for output, earnings, and employment aggregated for 20 row and 60 column industries. These multipliers were

Table 5. Direct Expenditures by Economic Sectors, FY 2004

UPPER BOUND			
Economic Sectors ^a	Total Direct (mill \$)	Emporia Area (mill \$)	Kansas (mill \$)
1. Agr. forestry, fishing, and hunting	0.028	0.020	0.008
2. Utilities	8.807	5.906	2.901
3. Construction	0.024	0.017	0.007
4. Manufacturing	6.539	4.409	2.131
5. Wholesale trade	3.757	2.608	1.149
6. Retail trade	5.050	3.387	1.662
7. Transportation and warehousing	18.814	12.287	6.527
8. Information	0.073	0.051	0.022
9. Finance and insurance	12.512	8.598	3.913
10. Real estate and rental and leasing	20.010	13.270	6.740
11. Professional, science, and technical services	2.539	1.777	0.762
12. Admin. and waste management services	1.752	1.226	0.526
13. Educational services	2.139	1.497	0.642
14. Health care and social assistance	2.658	1.760	0.898
15. Arts, entertainment, and recreation	0.011	0.007	0.003
16. Accommodation and food services	11.443	7.153	4.290
17. Other services	0.952	0.667	0.286
18. Households	47.427	32.991	14.435
Total	144.535	97.631	46.902

LOWER BOUND			
Economic Sectors ^a	Total Direct (mill \$)	Emporia Area (mill \$)	Kansas (mill \$)
1. Agr. forestry, fishing, and hunting	0.026	0.018	0.008
2. Utilities	7.628	5.114	2.514
3. Construction	0.004	0.003	0.001
4. Manufacturing	5.788	3.905	1.883
5. Wholesale trade	3.420	2.375	1.045
6. Retail trade	4.447	2.985	1.462
7. Transportation and warehousing	15.716	10.305	5.411
8. Information	0.070	0.049	0.021
9. Finance and insurance	11.289	7.763	3.526
10. Real estate and rental and leasing	17.500	11.609	5.891
11. Professional, science, and technical services	2.311	1.618	0.693
12. Admin. and waste management services	1.611	1.128	0.483
13. Educational services	2.032	1.422	0.610
14. Health care and social assistance	2.328	1.542	0.786
15. Arts, entertainment, and recreation	0.010	0.007	0.003
16. Accommodation and food services	8.074	5.100	2.974
17. Other services	0.814	0.570	0.244
18. Households	43.216	30.091	13.125
Total	126.284	85.604	40.680

^a Out of twenty economic sectors in BEA Appendix-C table, no expenditure is reported for 'mining, sector-2' and 'management of companies and enterprises, sector-13' in this study.

University budget office and the student and faculty survey. Column 2 of Table 5 reports total expenditures disaggregated to 18 economic sectors. Column 3 and 4 of Table 5 reports expenditures made in the Emporia area and outside of Emporia area but within the State boundaries, respectively. In FY 2004, University-related direct total expenditures (upper bound) were \$144.5 million out of which \$97.6 million were expended in the Emporia area and an additional \$46.9 million were expended in Kansas, outside of the Emporia area. On the employment front, in FY 2004, the University and its ancillary units hired a total of 1,599 full and part-time employees including hourly student employees. The comparable figures for lower bound are based on adjustment factors explained in Table 2.

Using final demand interindustry coefficient matrix, the indirect and induced impacts of University expenditures were calculated. These indirect and induced impacts are the result of re-spending of businesses and households. The re-spending would continue to impact Kansas' economy by creating employment, increasing state economic output, and increasing household incomes. Table 6 reports the estimated impacts of final demand multipliers for output, earnings, and employment for the Emporia area. Table 7 reports total impacts for the University-related expenditures for the entire state of Kansas (the sum of economic impacts for the Emporia area and the outside of Emporia area). The aggregation of expenditures from 60 sectors to 18 sectors was done after multipliers were applied to each of those 60 sectors.

Considering the upper bound estimates, the University's direct expenditures of \$97.6 million in the Emporia area (Table 6) generate an indirect and induced effect of \$116.2 million output, \$34.6 million earnings, and 1,557 jobs locally (upper bound). These indirect and induced

Table 6. Output, Earnings, and Employment Effect of University Expenditures For Emporia Area, FY 2004

UPPER BOUND				
Economic Sectors	Direct Exp (mill \$)	Impacts		
		Output (mill \$)	Earnings (mill \$)	Employ (jobs)
1. Agr. forestry, fishing, and hunting	0.020	0.027	0.008	0.475
2. Utilities	5.906	8.206	1.782	41.751
3. Construction	0.017	0.026	0.009	0.308
4. Manufacturing	4.409	8.104	1.366	61.240
5. Wholesale trade	2.608	3.644	1.149	32.727
6. Retail trade	3.387	4.840	1.573	83.057
7. Transportation and warehousing	12.287	18.472	6.446	385.260
8. Information	0.051	0.075	0.020	0.518
9. Finance and insurance	8.598	11.602	3.624	105.693
10. Real estate and rental and leasing	13.270	17.298	4.249	174.963
11. Professional, sci. and technical services	1.777	2.657	1.138	34.678
12. Admin. and waste management services	1.226	1.777	0.709	34.921
13. Educational services	1.497	2.291	0.937	49.918
14. Health care and social assistance	1.760	2.720	1.145	45.050
15. Arts, entertainment, and recreation	0.007	0.011	0.004	0.208
16. Accommodation and food services	7.153	10.628	3.524	197.649
17. Other services	0.667	0.992	0.327	16.040
18. Households	32.991	22.817	6.644	292.982
Sub-total	97.631	116.187	34.654	1,557.4
Add Initial Change		97.631^a	32.991	1,325.0^b
Total Impact		213.818	67.645	2,882.4

LOWER BOUND				
Economic Sectors	Direct Exp (mill \$)	Impacts		
		Output (mill \$)	Earnings (mill \$)	Employ (jobs)
1. Agr. forestry, fishing, and hunting	0.018	0.025	0.007	0.437
2. Utilities	5.114	7.105	1.543	36.150
3. Construction	0.003	0.004	0.001	0.047
4. Manufacturing	3.905	7.143	1.213	54.226
5. Wholesale trade	2.375	3.319	1.046	29.805
6. Retail trade	2.985	4.264	1.386	73.180
7. Transportation and warehousing	10.305	15.516	5.430	324.387
8. Information	0.049	0.071	0.019	0.488
9. Finance and insurance	7.763	10.475	3.272	95.430
10. Real estate and rental and leasing	11.609	15.129	3.713	152.898
11. Professional, sci. and technical services	1.618	2.419	1.036	31.571
12. Admin. and waste management services	1.128	16.635	0.652	32.128
13. Educational services	1.422	2.176	0.891	47.422
14. Health care and social assistance	1.542	2.383	1.004	39.413
15. Arts, entertainment, and recreation	0.007	0.010	0.004	0.196
16. Accommodation and food services	5.100	7.621	2.538	142.552
17. Other services	0.570	0.848	0.279	13.709
18. Households	30.091	20.811	6.060	267.230
Sub-total	85.604	100.954	30.094	1,341.3
Add Initial Change		85.604^a	30.091	1,325.0^b
Total Impact		186.558	60.185	2,666.3

a Direct household earnings.

b Approximately 66% of 669 student workers and 95% of 930 faculty and staff employed by the university in FY 2004, resided in Lyon County (i.e., 1,325 employment in Emporia area).

impacts, when added to the initial changes, yielded \$213.8 million in output, \$67.6 million in earnings, and 2,882 jobs in the Emporia area. The four most important economic sectors in the Emporia area are transportation and warehousing, real estate, rental and leasing, accommodation and food services, and the households sectors. These sectors together generated \$69.2 million in output, \$20.7 million in earnings, and 1,051 jobs in the Emporia area. Comparable figures for the lower bound are reported at the lower half of Table 6.

In Table 7, the upper bound estimates for the University's direct expenditure of \$144 million in Kansas yields an additional \$196 million in output, \$54.8 million in earnings, and creates 2,420 jobs in the state economy. The lower bound estimates for output, earnings, and employment are \$170 million, \$47.3 million, and 2,075 jobs, respectively.

Again, the four most important sectors remain the same. For example, the University's direct expenditure of \$97.7 million in transportation and warehouse, real estate, rental and leasing, accommodation and food services, and households together generated \$119.1 million in output, \$33.5 million in earnings, and 1,645 jobs (upper bound in Table 6). From Table 7, the University's average output multiplier is calculated as 1.35 and the household income/earnings multiplier as 0.37. This implies that for every dollar of direct expenditure by the University there will be an additional \$1.35 output and \$0.37 household income generated in the state economy.

Table 7. Total Economic Impact of University Expenditures on Output, Earnings, and Employment for Kansas, FY 2004

UPPER BOUND				
Economic Sectors	Direct Exp (mill \$)	Impacts		
		Output (mill \$)	Earnings (mill \$)	Employ (jobs)
1. Agr. forestry, fishing, and hunting	0.028	0.044	0.012	0.7
2. Utilities	8.807	13.623	2.884	70.7
3. Construction	0.024	0.042	0.014	0.5
4. Manufacturing	6.539	13.083	2.195	95.2
5. Wholesale trade	3.757	5.722	1.711	49.5
6. Retail trade	5.050	8.015	2.479	126.9
7. Transportation and warehousing	18.814	32.797	10.577	601.2
8. Information	0.073	0.115	0.029	0.8
9. Finance and insurance	12.512	19.949	5.649	166.8
10. Real estate and rental and leasing	20.010	26.352	5.632	231.5
11. Professional, sci. and technical services	2.539	4.086	1.614	49.7
12. Admn and waste management services	1.752	2.739	1.018	49.4
13. Educational services	2.139	3.605	1.368	71.5
14. Health care and social assistance	2.658	4.586	1.793	70.1
15. Arts, entertainment, and recreation	0.011	0.017	0.006	0.3
16. Accommodation and food services	11.443	18.965	5.978	326.2
17. Other services	0.952	1.541	0.487	23.5
18. Households	47.427	41.017	11.346	485.8
Sub-total	144.535	196.298	54.792	2,420.3
Add Initial Change		144.533	47.427	1,599.0
Total Impact		340.831	102.219	4,019.3
LOWER BOUND				
Economic Sectors	Direct Exp (mill \$)	Impacts		
		Output (mill \$)	Earnings (mill \$)	Employ (jobs)
1. Agr. forestry, fishing, and hunting	0.026	0.040	0.011	0.667
2. Utilities	7.628	11.798	2.498	61.263
3. Construction	0.004	0.006	0.002	0.070
4. Manufacturing	5.788	11.526	1.946	84.265
5. Wholesale trade	3.420	5.209	1.558	45.050
6. Retail trade	4.447	7.057	2.182	111.748
7. Transportation and warehousing	15.716	27.395	8.860	503.831
8. Information	0.070	0.109	0.027	0.714
9. Finance and insurance	11.289	17.995	5.097	150.498
10. Real estate and rental and leasing	17.500	23.042	4.921	202.320
11. Professional, sci. and technical services	2.311	3.720	1.469	45.214
12. Admn and waste management services	1.611	2.520	0.936	45.403
13. Educational services	2.032	3.424	1.300	67.958
14. Health care and social assistance	2.328	4.016	1.571	61.329
15. Arts, entertainment, and recreation	0.010	0.016	0.006	0.285
16. Accommodation and food services	8.074	13.441	4.251	232.368
17. Other services	0.814	1.318	0.416	20.099
18. Households	43.216	37.360	10.335	442.530
Sub-total	126.284	169.992	47.386	2075.6
Add Initial Change		126.284	43.216	1,512.0^a
Total Impact		296.276	90.602	3,587.6

^a ESU student employment is adjusted for lower bound by 13 percent reducing the number of student employment to 582 and the total employment to 1,512.

Table 7 also reveals the University's initial employment between 1,599 and 1512 full- and part-time employees would generate an additional 2,420 and 2,075 jobs, respectively, in the Kansas economy leading to the University's average direct employment multiplier of 1.44. This implies that for every job the University creates, there will be 1.44 additional jobs created in the Kansas economy.

Summary and Conclusions

This study examines the interlinkages of Emporia State University with the local and state economies of Kansas. The university started in 1863 as Kansas State Normal School, dedicated to the education of teachers, and changed to its current name of Emporia State University in 1977. Over the past 142 years, this institution has evolved where it not only educates the teachers through its Teachers College, but also offers degrees in business, liberal arts, sciences, and library and information management. Athletic events and cultural activities have enhanced the quality of life for the local population and attracted visitors from other states. The historic role of ESU in educating Kansans has been well recognized (99 percent of ESU graduates are either pursuing higher education or are employed) and a recent report lists ESU among the top 100 entrepreneurship schools in the nation (*Wichita Business Journal*, April, 2005).

This study examines the interlinkages of Emporia State University with the local and state economies of Kansas for FY 2004 by applying an input-output procedure and

estimated output, income, and employment impacts from university expenditures. The economic impact of University expenditures on the local economy is reflected through the Emporia area economic multipliers. The average for upper and lower bound output, earnings, and employment multipliers for the Emporia area (Table 6) are 1.15, 0.35, and 0.95; and for Kansas (Table 7) are 1.35, 0.37, and 1.44, respectively. The magnitude of the earnings multiplier for the Emporia area and for Kansas is close, but the output and employment multipliers differ considerably. The reason for such differences is the higher linkages of some of the economic sectors, such as retail trade (sector 6) and health care and social assistance (sector 14) in the state economy than in the local economy.

When the total impact of University related expenditures for the state as a whole is considered (Table 7)

the University’s output multiplier (1.35) indicates that \$144.5 million direct expenditures yields a total of \$340.8 million of economic activity throughout the state’s economy. The total direct employment multiplier for the University is estimated as 1.44, which indicates that for every job the University creates there are additional 1.44 jobs created in the state economy. This study is a fairly conservative estimate of Emporia State University’s impact on the local economy because the impact of federal and state tax revenues generated by the activities of the university and its community and the benefits of lifetime earnings by ESU graduates are not included in the study. However, the results of this study found that substantial economic linkages within the local and state economy exist with Emporia State University, which is often neglected during legislative hearings and public opinion polls.

Appendix A. Simple Input-output Model

Let X_j = Total output of sector j
 x_{ij} = Flow of input from sector i to sector j
 Y_j = Total final demand or consumption for j ’s product such that we can write:

$$X_j = x_{j1} + x_{j2} + x_{j3} + \dots + Y_j$$

$$X_j = \sum_{i=1}^n x_{ji} + Y_j \quad j = 1, \dots, n \quad (1)$$

Let $a_{ij} = \frac{x_{ji}}{X_j}$

Where a_{ij} is the direct requirement coefficient i.e. purchase by sector j from sector i to produce \$1 worth of output by sector j , and X_j is the value of total output by sector j .

$$X_j = \sum_i \left(\frac{x_{ji}}{X_i} * X_i \right) + Y_j \quad j = 1, \dots, n \quad (2)$$

$$X_j = \sum_i a_{ji} X_i + Y_j \quad j = 1, \dots, n \quad (3)$$

$$X_j = \sum_{i=1}^n a_{ji} X_j + Y_j \quad j = 1, \dots, n \quad (4)$$

Let $A = (n \times n)$ matrix of direct requirement coefficient of a_{ij} ,
 $X = (n \times 1)$ vector containing total output of n sectors,
 $I = (n \times n)$ identity matrix

Then, $(I - A)X = Y \quad (5)$

$$X = (I - A)^{-1}Y \quad (6)$$

Matrix X shows the effect on the regional economy from changes in sales to final demand.

Appendix B. RIMS Industry Aggregations

Aggregate industry code and title		RIMS II detailed industry codes ¹
Agriculture, forestry, fishing, and hunting		
1	Crop and animal production	1111A0-112A00
2	Forestry, fishing, and related activities.....	113A00-115000
Mining		
3	Oil and gas extraction.....	211000
4	Mining, except oil and gas.....	212100-212390
5	Support activities for mining.....	213111-21311A
Utilities		
6	Utilities	2211A0-221300
Construction		
7	Construction.....	230000
Manufacturing		
8	Wood product manufacturing.....	321113-321999
9	Nonmetallic mineral product manufacturing.....	327111-327999
10	Primary metal manufacturing.....	331111-33152B
11	Fabricated metal product manufacturing.....	332111-332999
12	Machinery manufacturing.....	333111-33999A
13	Computer and electronic product manufacturing.....	334111-334613
14	Electronic equipment and appliance manufacturing.....	335110-335999
15	Motor vehicle, body, trailer, and parts manufacturing.....	336110-336300
16	Other transportation equipment manufacturing.....	336411-336999
17	Furniture and related product manufacturing.....	337110-337920
18	Miscellaneous manufacturing.....	339111-33999A
19	Food, beverage, and tobacco products.....	311111-312229
20	Textile and textile product mills.....	313100-31499A
21	Apparel, leather, and allied product manufacturing.....	315111-316900
22	Paper manufacturing.....	322110-322299
23	Printing and related support activities.....	32311A-323122
24	Petroleum and coal products manufacturing.....	324110-324199
25	Chemical manufacturing.....	325110-325998
26	Plastics and rubber products manufacturing.....	326110-326290
Wholesale trade		
27	Wholesale trade.....	420000
Retail trade		
28	Retail trade.....	4A0000
Transportation and warehousing		
29	Air transportation.....	481000
30	Rail transportation.....	482000
31	Water transportation.....	483000
32	Truck transportation.....	484000
33	Transit and ground passenger transportation*.....	485A00
34	Pipeline transportation.....	486000
35	Other transportation and support activities*.....	48A000-492000, 491000
36	Warehousing and storage.....	493000

(cont.)

Appendix B. (cont.)

Aggregate industry code and title		RIMS II detailed industry codes ¹
Information		
37	Publishing including software.....	511110-511200
38	Motion picture and sound recording industries.....	512100-512200
39	Broadcasting and telecommunications	512100-513300
40	Information and data processing services.....	513100-513300
Finance and insurance		
41	Federal Reserve banks, credit intermediation, and related services..	52A000-522A00
42	Securities, commodity contracts, investments.....	523000
43	Insurance carriers and related activities.....	524100-524200
44	Funds, trusts, and other financial vehicles.....	525000
Real Estate and rental and leasing		
45	Real estate.....	531000, S00800
46	Rental and leasing services and lessors of intangible assets.....	532100-533000
Professional, scientific, and technical services		
47	Professional, scientific, and technical services.....	541100-5419A0
Management of companies and enterprises		
48	Management of companies and enterprises.....	550000
Administrative and waste management services		
49	Administrative and support services.....	561300-561900
50	Waste management and remediation services.....	562000
Educational services		
51	Educational services.....	611100-611B00
Health care and social assistance		
52	Ambulatory health care services.....	621A00-621B00
53	Hospitals and nursing and residential care facilities.....	622000-623000
54	Social assistance.....	624400-624A00
Arts, entertainment, and recreation		
55	Performing arts, museums, and related activities.....	711100-712000
56	Amusements, gambling, and recreation.....	713940-713A00
Accommodation and food services		
57	Accommodation.....	7211A0-721A00
58	Food services and drinking places.....	722000
Other services*		
59	Other services*.....	8111A0-813B00, S00A00
Households		
60	Households.....	H00000

*Includes Federal Government enterprises.
¹ Appendix B identifies the RIMS II detailed industry codes.

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Being Underinsured in Kansas

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Background

For many good reasons there has been much attention, research and debate dedicated to policy issues surrounding the lack of health insurance among Kansans.^{1,2,3,4} Recent policy initiatives such as those floated by the Governor and the State Insurance Commissioner focus on this population.⁵ While there is widespread agreement that something needs to be done to address the health needs and economic consequences of the approximately 300,000 uninsured Kansans,⁶ the strategies being forwarded to reduce this number vary, largely by political philosophy. Expanding access to public programs such as the State Children's Health Insurance Program (SCHIP, called *Healthwave* in Kansas) or Medicaid are favored by persons whose preferences lean more towards expanded use of existing governmental resources to address the problem. Equal enthusiasm exists among many policy makers and others for market-based approaches that they feel would improve access to lower cost insurance coverage for businesses to offer their employees and individuals to purchase for themselves. As the newly formed Kansas Health Policy Authority begins in earnest its deliberations on how healthcare will be purchased and administered in Kansas in the coming year,⁷ these two contrasting but not necessarily mutually exclusive approaches will both likely be drawn upon in deciding on policy that will decrease the rate of uninsured persons living in Kansas in future years.

If other states' discussions are a guide, one issue that will arise out of these deliberations is the question of what, exactly, constitutes adequate insurance coverage? Is having some form of insurance which places most of the short-term financial risk on the insured individual much different than not having insurance at all in its net effect? Will deliberations on developing new products to cover the uninsured lead to state endorsed health coverage that protects insurers and providers more than the persons they allegedly are designed for? While likely to receive less attention, having insurance that gives persons inadequate health care protection could arguably be considered of equal significance to not having any insurance at all, at least in terms of economic impact and potential adverse

health outcomes. There is increasing evidence that the consequences of having an inadequate amount of health insurance are similar to the consequences of not having any health insurance at all. A June 14, 2005 research study, *Insured but Not Protected: How Many Adults Are Underinsured?*, published in the policy journal *Health Affairs* chronicles the hardships faced by the approximately sixteen million Americans classified as underinsured.⁸ The study reports the extent to which underinsured Americans have difficulty accessing and paying for health care. It suggests that, like the uninsured, underinsured people "commonly choose to not fill prescriptions, forgo doctor visits even when they have medical problems, skip medical tests, treatment and follow up care and do not follow up with specialists because of the expense." While this work did much to draw parallels faced by persons with inadequate health insurance to those not having any, what it lacked was much of the context behind how people came to being underinsured or its impact on their and their family's lives. For Kansas policy makers, understanding the reasons and consequences of having inadequate health insurance is important before making any wide-ranging decisions that could have consequences for many years to come.

The purpose of this research was to investigate the nature of being underinsured in Kansans by interviewing persons and letting them tell their stories in their own words. The study uses qualitative analytic methods to interpret guided interview responses of 15 underinsured residents of Kansas. Major themes identified among respondents are then discussed in the context of current published data on being underinsured and consequences of having inadequate health insurance.

Introduction

Until recently, much of the policy discussion about health insurance has focused on whether or not a person has insurance, with far less concern about the quality of the insurance coverage. Recent groundbreaking legislation passed in Massachusetts that mandates health insurance for all residents has shifted this discussion significantly.^{9,10} In their efforts to provide health insurance to all Massachusetts residents, policy makers there have, in the view of numerous advocates, embraced a trade-off of quality health insurance for universal coverage through a statewide mandate that requires businesses to provide insurance without commensurate mandates on minimizing co-payments, deductibles or similar out of pocket

expenses.¹¹ In some respects, this recasting of health insurance away from a primary purpose of protecting insured persons to that of protecting the viability of the insurance system builds on the model of the “donut hole” in the recent Medicare Part D prescription drug benefit.¹² This was probably the single most visible and influential effort to recast the entire nature of health insurance away from comprehensive individual protection to comprehensive insurer financial protection in our country.

But even before these recent developments, the spiraling costs of health insurance have been causing businesses to reduce or drop coverage and forcing public insurance programs such as Medicaid and Medicare to limit eligibility, benefits and provider reimbursement. Similar to the late 1980s and early 1990s, employers in Kansas and most other states are seeing double-digit increases in health care premiums for employees and retirees. While state newspapers report that more and more employers are “shifting” this increase in costs to their employees in the form of higher deductibles, premiums, and co-payment fees,¹³ the result of this cost shifting is an increasing number of workers with very basic, no-frills health insurance coverage.

The work by Schoen, et al. established criteria for what it meant to be underinsured. In their study, an underinsured person was defined as someone who has health insurance coverage all year but still lacked adequate financial protection. This inadequacy was indicated by having one of three following conditions: 1) an annual out-of-pocket medical expense of 10% or more of their income; 2) among low-income adults, out-of-pocket medical expenses of 5% or more of their income; or 3) having their health plan deductible equal to or exceeding 5% of their annual household income.⁸

By using these criteria, in addition to the forty-five million uninsured adults in America, there are also sixteen million underinsured. Because these sixteen million Americans are considered insured, they are frequently an after-thought in policy debates, in spite of evidence that indicates that individuals with minimal health coverage have similar health outcomes as people who have no coverage at all. In fact, research suggests that their health outcomes, health behaviors, and medical debt are almost identical to the uninsured.^{8,14,15,16} There is every likelihood that this population will boom in the coming years as the affordability of health insurance declines and alternative approaches to health insurance such as health savings accounts and other forms of so-called “consumer driven” options gain wider acceptance because of their initial lower expenses and incentives to ration services.

Methodology

In defining our sample, we undertook the same definition of underinsured that Schoen, et al. used for their earlier research: (1) annual out-of-pocket medical expense of 10% or more of household income; (2) among low-income adults, out-of-pocket medical expenses of 5% or more of household income; or (3) health plan deductible amounts equal to or exceeding 5% of annual household income. Subjects were found using snowball sampling methodology, most being referred to the research team by individuals based on their knowledge of individuals who may meet similar selection criteria. We screened approximately two persons for every person selected for our final sample. Our final sample of 15 persons represented persons in northeast and northwest parts of the state, both rural and urban. All interviews were conducted by phone or in-person between October 2005 and December 2005. Qualitative analyses of written responses were explored using manual techniques of data reduction as described by Strauss and Corbin¹⁷, and both themes and statements that best illustrated these themes pulled from the resulting data.

Those identified as underinsured were asked a series of questions (Appendix) about their experiences as an underinsured individual. The overriding research questions behind this inquiry were:

1. Who is underinsured? (*Who?*)
2. Why are Kansans underinsured? (*Why?*)
3. What are the consequences of being underinsured in Kansas? (*What?*)

Approval for this research was obtained by the Human Subjects Committee of the University of Kansas Medical Center (Project #10146) in the Fall of 2005.

Findings and Discussion

Research Question One: *Who is underinsured?*

Characteristics of our sample are described in Table 1. With respect to being underinsured, what they all had in common were their exposure to financial risk based upon the nexus of *employment/position and medical need*. Perhaps best illustrated by Respondent #8, it appears that persons aren't prepared to consider themselves underinsured until circumstances—in this respondent's case, cumulative medical procedures administered to his/her son in the previous five years—require resources that diminishing or non-existent employer benefits are unable to meet, placing the burden of economic responsibility on the insured individual or family.

“My son has had thirteen surgeries and multiple diagnostic procedures over the last five years. My company switched to a high deductible, high co-insurance plan two years ago and my out-of-pocket responsibility jumped substantially to the point that we don’t always follow the doctors’ advice anymore because we can’t afford to pay for it and because of our large medical bill debt.” Respondent #8

As we already know from national data, many Kansans with health insurance face significant cost sharing and limits on benefits that “affect its usefulness in accessing or paying for needed health services.”¹⁸ Those considered underinsured typically have plans that offer low levels of coverage and are greatly limited in their ability to provide financial protection for the policyholder. Respondent #15 spoke clearly to this:

“I don’t feel like I would make it financially if I was in an accident or sick. At the moment I wouldn’t even be able to cover my \$1,000 deductible.” Respondent #15

If Schoen’s estimate of 12% of persons with health insurance being underinsured can be used to project gross estimates for states, there are 270,000 Kansans who are underinsured, in addition to the approximately 300,000 with no health insurance. As suggested in recent research from the Kaiser Family Foundation,

this methodology may well lead to an underestimate since persons may not recognize their insurance gaps until medical needs present themselves.¹⁹ Most underinsured people do not know they are underinsured until they incur health expenses. As the remarks of Respondents #7 and #13 illustrate, families who are underinsured try to position themselves, through employment or school, to be in a position where they will be able to receive insurance coverage that helps them minimize their financial risks when these expenses occur:

“We don’t have enough money to get insurance except through the employer. My spouse is trying to get a job with better insurance coverage.” Respondent #7

“We are pretty lucky in the regards that my wife is still a college student. Therefore we can go to the campus health center for a reasonable price. However if we would have gone to the hospital, insurance would not have covered it and we would not have had the money for her to get the treatments that she needed.” Respondent #13

Another subset of individuals may reflect the experience of the farm family that understood their position with some degree of stoicism; if someone got sick, they would have to simply go bankrupt:

Table 1. Respondent Characteristics

Respondent	Annual Insurance Deductible	Health Insurance Premium Expense	% Gross Income Spent on Premium	% Gross Income Spent on Health Care	Did Not Seek Care because of Cost	Did Not Fill Script. because of Cost	Did Not Follow Doctor’s Advice because of Cost
#1	\$500 - \$1000	>\$1500	5% to 10%	0 to 5%	No	Yes	Yes
#2	\$500 - \$1000	>\$1500	5% to 10%	5% to 10%	Yes	Yes	Yes
#3	>\$1000	>\$1500	0 to 5%	10% or more	Yes	Yes	Yes
#4	\$500 - \$1000	\$500 - \$1499	10% or more	10% or more	Yes	No	Yes
#5	\$500 - \$1000	\$500 - \$1499	0 to 5%	5% to 10%	yes	Yes	Yes
#6	>\$1000	>\$1500.00	10% or more	10% or more	No	Yes	Yes
#7	>\$1000	<\$500	10% or more	10% or more	Yes	Yes	Yes
#8	>\$1000	>\$1500	5% to 10%	5% to 10%	Yes	Yes	Yes
#9	>\$1000	\$500 - \$1499	0% to 5%	5% to 10%	Yes	No	Yes
#10	>\$1000	>\$1500	10% or more	10% or more	No	No	No
#11	\$500 - \$1000	\$500 to \$1499	5% to 10%	10% or more	Yes	Yes	Yes
#12	\$500 - \$1000	>\$1500	5% to 10%	0% to 5%	Yes	No	No
#13	>\$1000	<\$500	0% to 5%	5% to 10%	No	No	No
#14	\$500 - \$1000	\$500 - \$1499	0% to 5%	10% or more	No	No	No
#15	>\$1000	<\$500	0% to 5%	0% to 5%	Yes	No	Yes

Note: Professions of sample included insurance adjuster, MRI technologist, surgery scheduler, legal secretary, attorney (2), caregiver (2), farmer, receptionist, billing/collections agent, student (2), manual laborer, small business owner.

"I know people who don't try to have insurance because all they have is a house and a vehicle. So, when they get sick, they declare bankruptcy. Since we are farmers and have machinery and a few assets we'd lose everything. Seems unfair for self-employed, small business owners." Respondent #6

Research Question #2: Why are Kansans underinsured?

Costs are the overriding issue why Kansans are underinsured; both the costs of obtaining good insurance by employers and the costs of purchasing comprehensive insurance by employees and others.

Respondent #3 and her husband are themselves employers and want to provide their employees with better health insurance. They are insured by the same health plan, and now face large medical bills because of coverage gaps and the lack of financial protection that the plan provided them. The insurance plan they provide for themselves and their employees is the only one they can afford. As they state:

"My husband and I just took over a business in July and pay 100% of the health insurance premiums for our employees and for us. We have looked for other coverage...but the cost is prohibitive. A plan that would cover 50% of our prescriptions and cover doctor office visits would be almost three times higher than what we pay now in premiums...it is hard to justify spending that portion of our business income on health insurance premiums. It is a no-win situation for small businesses that want to offer their employees good health insurance." Respondent #3

Their situation is not unique. Employers are under increased pressure to control their spending on health insurance premiums that are growing at a rapid rate. The percentage of businesses offering health insurance to their employees has decreased steadily over the last five years as the cost of "providing coverage continues to outpace inflation and wage growth."¹⁹ Recent estimates by Mercer Human Resource Consulting predicted a 10% increase in employer health care costs in 2006 if benefits remain the same.²⁰ Rather than discontinuing health insurance coverage for their employees, another way employers cut their costs is to offer them less expensive insurance plans. And yet, as illustrated by the remarks of Respondent #2, employees may not hold employers directly responsible for this problem:

"...I understand that the employer does not have to provide health benefits. But, if the employer does provide health benefits, oftentimes they are limited in the type of plan they offer or the coverage of the policy they have in place. So, the employer often has to look at cost they incur by providing such a benefit and so they are forced to pass any additional costs to the employee." Respondent #2

Our data suggest that employees understand the need for employers to offer plans that have large deductibles and bring with them more employee responsibility than traditional plans, even if they don't particularly like it, suggested in two comments by Respondent #1:

"The high cost of premiums, I think, is a big factor in why employers can't provide adequate insurance coverage for their employees." Respondent #1

"I don't have a lot of control over my group health insurance coverage. That is all decided by the office manager. I don't see office insurance changing due to illness of some employees, or getting any better due to the cost to the employee and employer." Respondent #1

High deductible health plans have increased in popularity recently because of their initial affordability. The Kaiser Family Foundation estimated that 20% of employers that provide health insurance to their employees now offer them some form of high-deductible health plan.¹⁹ But as inferred by the comments of Respondent #15, they do not appear popular, as much as necessary:

"I tried for a year to carry insurance with a smaller deductible, but was unable to really make the payments and afford my other bills." Respondent #15

Research Question #3: What are the consequences of being underinsured in Kansas?

There are *four major themes* that emerged as consequences of being underinsured for our Kansas sample: *1) reduced access to medical services; 2) the omnipresent influence of medical bills in their daily lives; 3) living with the reality of gaps in coverage that may not necessarily coincide with their need for health services; and 4) dealing with the trade-off of having some insurance versus none at all.*

The underinsured face significant access issues, and appear much more likely than better insured individuals to go without recommended medical care because of the cost of medical care. These circumstances are poignantly illustrated through the following statements we received:

"I have tried to stay away from doctors offices. I have been ignoring the tests that I need. I need to have preventative tests done as I am a cancer survivor and cannot afford to have it done." Respondent #12

"It mostly affects me personally rather than my children. I make sure they seek medical attention. However, many times I avoid going to the doctor in order to curb costs. I feel that by doing this I can

ensure that my kids can receive the medical attention that they need.” Respondent #2

“It stinks not getting the care you feel that you need.” Respondent #9

“...I only go to the doctor when it is critical, thereby I forego preventative care.” Respondent #7

“...I have not sought medical care for some situations (i.e. sciatica, dental needs) because out of pocket co-pays are too high.” Respondent #5

Most respondents had a large amount of medical debt and are very cautious when seeking medical attention and whether or not to follow medical advice. As seen in Table 1, 10 out of the 15 underinsured Kansans that participated in the study told us that during the last 12 months there was a time when they or a family member covered by their health insurance policy had a medical problem but postponed or did not seek medical care when it was needed because of the cost of the care. Eleven of the 15 respondents in the last two years did not follow medical advice or treatment, get a recommended test or see a referred doctor because of the cost. During the last twelve months, eight of the 15 respondents did not get a prescription filled because of the cost of the medicine.

An especially striking finding in our data was the apparent need to make difficult choices about who in the household should receive improved access to health care. We sense the need for parents to make value decisions in a household on who is the most deserving of scarce resources. Usually, the children received care first, as suggested by Respondent #3:

“If our kids are sick or injured, we take them in to be seen. If my husband or I are sick or injured we usually don’t go to a doctor because we know it won’t be covered. ...At this point we would rather spend the out of pocket money on making sure our children are getting the healthcare the need.” Respondent #3

But even this has its limits, as alluded to in the remarks of Respondent #8:

“My son has a brain tumor that doctors believe is benign. Doctors have recommended he have an annual MRI to make sure that the tumor does not change. We have not taken him for an MRI this year because of medical debt. We are holding off until I get a new job with better insurance coverage.” Respondent #8

Access to care includes more than simply visiting medical facilities, of course, and one of the most well documented ways in which persons ration medical treatment is through reducing their dosages to needed

prescription drugs, especially among the elderly. We heard this from Respondent #6:

“My Advair is \$216.77—I’m supposed to take it twice a day. I take it once a day so it will last two months instead of one month. I do the same with my Allegra, which is \$144.84.” Respondent #6

As more employers shift more of their cost of health-care to their employees, more insured Americans are facing financial stress and collection agencies as a result of larger medical bills. This affects their decisions to seek care:

“I don’t schedule procedures recommended because of debt already accumulated” Respondent #4

Millions of Americans with health insurance are at risk of financial hardship as a result of their personal health care cost.²¹ This struggle is often a hidden one. When someone is injured or faces a serious illness one can clearly see his or her struggle for recovery. Less apparent is his or her ensuing financial hardship. It is generally assumed that if someone is insured, his or her health insurance will substantially lighten the financial burden of healthcare. Nationally, 46% of the underinsured reported that they were contacted by a collection agency during the past year about the money they owe for medical bills. Thirty-five percent said they had to change their way of life dramatically to pay their medical bills. A large number of these individuals took on a high level of credit card debt or a second mortgage against their home in order to pay their medical bills.¹⁴

Yet 66% of people that have medical bill problems have health insurance of some kind. Thirty-five percent of families that have high out-of-pocket costs (\$2,000 or more in the past year) reported problems paying medical bills compared to about seven percent of families with out-of-pocket medical expenses of \$250 or less.²² Many of our respondents find themselves in what may be described as “double jeopardy.” They fail to get needed or recommended care at the same time that they struggle with medical bills, collection agencies, and decisions on whether to purchase clothes, food, or pay other bills. Some illustrations of this are:

“I have to make monthly payments on medical bills and I could be using it for other things my kids need like clothes” Respondent #7

“I’m still paying on hospital bills from a humerus fracture in 2002 and my gallbladder removal in 2004. ...Even four years later I am still making payments on this only not to the hospital, but to a collection agency. Even though I was making pay-ments on this I was sent to a collection agency to clear the hospital books of old

AR. Do you make the house payment or your health insurance payment?" Respondent #1

"I can't afford car payments due to medical bills from a year ago" Respondent #4

"We have to go without a lot things in order to pay medical bills accumulated." Respondent #12

"My wife started working and I work as many hours as I can for extra money. We do not eat out and we do without a lot of material things we used to think we needed." Respondent #8

"There have been times that due to my financial responsibility for medical bills that I had to borrow money from family in order to have ends meet. Also, when there are medical expenses often the spending habits or monthly budget needs to be adjusted in order to pay the medical bills." Respondent #2

Dealing with collection agencies and the subsequent disruption in the lives of families was a constant theme:

"(I) work overtime when possible, (I) have a small business of my own. (The) extra money goes to medical bills. Due to untimely insurance payments our credit rating has been affected negatively. (I have) endured constant harassment from creditors and collection agencies." Respondent #10

"My medical bill from my son's delivery was extremely high. ...The office wouldn't take monthly payments and turned me over to collections. Then that went on my credit report and their monthly minimum payment was very high making it hard to pay other monthly bills—causing us (my family) to struggle just to make it." Respondent #11

We heard among some a degree of hopelessness, in which it appears that our respondents did not feel that it would ever be possible to work their way out of medical debt in spite of having some form of health insurance:

"When you live paycheck to paycheck an unexpected medical bill is financially crippling." Respondent #15

"I'm still paying \$200 a month since 1999 on this bill. I still have over \$5000 to pay. I pay \$700 per month for prescriptions and \$700 a month on insurance coverage." Respondent #6

"...One would think that the cost for insurance would limit the amount of out of pocket expenses that one actually incurs. Even with insurance coverage, one's responsibility for medical bills can create a financial hardship." Respondent #2

Many of our respondents expressed stoicism at the situation in which gaps in coverage led to these problems. While they all realized that their insurance may not have been as good as they would have liked, they responses to dealing with these gaps varied. To some, like Respondent #13, having a health insurance policy was essentially protection from catastrophe, only to be used in an absolute emergency:

"...The insurance I have doesn't cover really cover much of anything. The deductible is \$2,500 so I really just keep the insurance in case of the event of a major accident." Respondent #13

Others, like Respondent #12, rationed care:

"My son needs to have his wisdom teeth pulled and I can't afford what the insurance won't pay." Respondent #12

Most appeared to be resigned to taking on the burden of increased medical debt through their gaps in coverage because they appeared not to have any other choice:

"We have three children so our greatest cost is doctor office visits, ER and Pharmacy, all of which are not covered by our insurance carrier." Respondent #3

"I am insured through the Kansas Health Insurance Association because no standard company will insure me. The premiums are twice as high and I'm limited to who I can go to for treatment. ...After I meet my \$3000.00 out of pocket expense, they only pay 50 percent. I pay \$700.00 per month for prescriptions and \$700.00 per month for insurance coverage." Respondent #6

Insured or uninsured people with medical bill problems are less likely than insured people without medical bill problems to seek medical care.^{14, 23} Their access problems are two-fold. They are reluctant to add to their medical debt and don't seek medical care and their physicians may be reluctant to see them because they have an outstanding balance.

Inadequate health insurance coverage may not always be better than no health coverage at all.

Several of the subjects of this study would have saved money if they had not used their health insurance. All of the respondents who addressed this issue pay at least a portion of their insurance premium cost themselves. Respondent #4 pays between \$500 - \$1,500 annually for her health insurance premium. Respondent #3 pays more than \$1,500 a year on her insurance premium. These Kansans not only pay more for some healthcare procedures than someone without insurance, they also incur a significant insurance premium

expense that uninsured people do not pay. Some of this frustration was illustrated by Respondents #2 and #3:

“Those without coverage get their medicine free through doctor samples but since we have an insurance card we have to go through the pharmacy, which is not covered under our plan.” Respondent #3

“One would think that the cost for insurance would limit the amount of out of pocket expenses that one actually incurs. Even with insurance coverage, one’s responsibility for medical bills can create a financial hardship.” Respondent #2

Some, like Respondent #11, puts the blame on the nature of health insurance, where insurance companies can always adjust premiums to limit their financial risk:

“Insurance companies are making a killing off our monthly premiums. People may be better off being self-pay at doctors’ offices and just take that monthly payment you were paying and put that into an account for when you do need medical care. Some people would save a lot of money.” Respondent #11

As illustrated in remarks by Respondent #8, some even questioned the value of having any health insurance at all:

“Because my insurance does not cover my medical expenses I sometimes wonder if I would be better off without it. I pay almost \$600 per month just for the premium of a policy that does not cover the services our physicians think my family needs.” Respondent #8

While the cost of purchasing minimal health insurance is itself a source of hardship, the inequities that underinsured persons face when receiving services reinforces this hardship yet further. As suggested by three of our underinsured respondents, telling certain providers that they are uninsured in some cases would save them money:

“Last year my 2 year-old son had to have reconstructive surgery after breaking out his four front teeth in a falling accident. ...They (the hospital) gave us a letter when we arrived (for surgery) stating that they had a special option for patients without health insurance and those uninsured would pay \$1,550 for the hospital and anesthetic portion of the surgery. We told them we had insurance. We ended up paying several thousand dollars over the \$1,550. ...We would have been far better off not having insurance in this case. The total surgery, including the hospital, anesthesiology, and surgeon fees, after insurance cost us over \$9,000 out of pocket and we ended up having to take out a loan to cover the costs.” Respondent #3

“Working with health care procedures at my job, I have found that some procedures would be cheaper if a patient had no insurance. My present insurance has a \$500 co-pay and then insurance pays 50 percent. A certain surgery for a patient would be billed for \$4,000. If a patient has no insurance, the hospital will charge \$1,000 for this procedure. If I use my insurance, my insurance company will pay \$2,000 and I would owe the remaining \$2,000. My daughter has insurance through me and rarely uses her insurance card because it is much cheaper to go low-income and be charged on a sliding scale than to go through insurance.” Respondent #4

“It is upsetting when I go to get my kids immunizations and they inform me that if we do not have insurance the cost is \$5 per shot but if we do have insurance it is \$80 per shot. They don’t care if insurance covers it or not, that’s just their way of helping the less fortunate, which is fine, but it puts a hardship on us.” Respondent #3

Research shows that individuals with inadequate health coverage do not have significantly better health outcomes than people who have no coverage at all. In fact their health outcomes, health behaviors and medical debt are almost identical to that of uninsured people. Thirty-eight percent of underinsured Americans do not fill prescriptions; 32% do not to see a physician even when they have a medical problem; 30% do not have recommended medical tests, procedures or follow up care; and 18% decline specialist care because they can’t afford to do so financially.¹⁴ These behaviors more closely resemble those of the uninsured than they do people with more adequate coverage.

The conundrum we see in the trade-offs between purchasing inadequate health insurance and having no insurance at all are repeated in study findings released by the American Diabetes Association (ADA) in February, 2005 that relate to the consequences of having inadequate health insurance coverage and managing diabetes.²⁴ The study points to the importance of having adequate health insurance as essential to managing diabetes effectively. Yet one case highlighted a single mother with diabetes who worked at a fast food restaurant. This woman continued paying her insurance premiums for a plan that did not cover the diabetic supplies she needed to manage her disease. She could not pay for diabetic test strips, other diabetic medical supplies and her insurance premium at the same time, but was afraid to drop her insurance coverage because she did not want her children (with medical problems) to go without coverage. Instead of dropping her inadequate coverage, she chose to not

buy diabetic test strips and other medical supplies, using the money she saved to pay her insurance premium. She then lost control of her diabetes, leading to the need for intensive medical care. Keeping her inadequate insurance coverage in this case actually led to her diabetes getting worse. Nothing in our data disputes the truth behind this illustration.

Lessons Learned and Policy Implications

In the United States, the technology and standards of care exist to prevent or cure many diseases. Policy makers frequently extol the virtues of prevention, as Rep. Jerry Moran, R-Kan., did in a recent statement: "I think the biggest bang for our buck in reducing the cost of healthcare is for people to live more healthy lives. ...It is much less expensive, in addition to saving lives, to treat somebody before the cancer develops. So we could save a lot of money by reimbursing for preventative medicine."²⁵

Our study provides insight into why some Kansans with health insurance don't receive treatment before diseases such as cancer can develop. Poor health insurance coverage affects health care seeking behavior. The underinsured are less likely than those with better insurance coverage to seek medical care when they need it, fill prescriptions their physicians feel that they need, or undergo tests and procedures that could prevent illness. They are less likely to utilize preventative health care when it costs them too much to do so. Respondents in our study, considered insured by health policy makers, are not receiving mammograms, Pap smears and other tests that are proven to reduce adverse outcomes associated with disease. People who pay a substantial amount of their gross household income on health insurance are not monitoring diseases like diabetes because they cannot afford diabetic monitoring equipment in the face of their insurance premiums. People who pay up to 10% of their gross family income towards insurance premiums do not access health care because they can't afford it, in spite of their insurance.

Even as we know that insurance status is one of the most important determinants of access to health care,

simply having it does not ensure access to needed services or financial security. The adequacy of the insurance must be considered. People who are not able to afford adequate health insurance on their own, or do not work for a business that provides adequate health insurance do not have access to the same health system as those with adequate insurance. Their numbers are likely to rise as the price of providing insurance coverage rises, and if Health Savings Accounts (HSAs) and consumer-driven health care continue to be considered viable proxies for health reform in Kansas or elsewhere.

Including the underinsured in policy discussions is a first step. As the Kansas Health Policy Authority embarks on its historic mission to implement meaningful health reform in our state, discussions centering on improved health outcomes statewide may wish to start with not just the availability of health insurance, but also its affordability and adequacy of coverage. As our study helps illustrate, it is no longer sufficient to look at insurance status alone; it is also important to look at the quality of the insurance product itself.

Almost all of our study participants were not health professionals (see *Note*, Table 1). They were farmers, attorneys, computer programmers and receptionists, many of whom are frequently perceived as lacking the experience, information, and skills needed to make healthcare choices. Even if they could choose their course of treatments when receiving care, as with many other health consumers in Kansas, they lack the training to evaluate the cost, quality, and necessity of the services they received. They are dependent upon health insurance in ways that some health policy analysts who discuss "consumer-driven health care" and the ability of persons to make "informed decisions" on health care issues sometimes overlook. Increasing cost sharing as a matter of policy will likely result in more underinsured people, especially among modest and lower income families. If our goal is to improve health care for all Kansans and one of the directions that policy makers are considering is to offer more insurance of lower quality, understanding the experiences of persons who are underinsured should be a cautionary first step.

Appendix: Survey Instrument

- 1) From whom do you receive health insurance coverage?
 - A) My employer
 - B) Individual purchase
 - C) Public such as Medicaid or Medicare or Health Wave
 - D) Don't Know / Refused

- 2) What is your annual deductible for your health insurance? This is the amount you have to spend out of pocket until your insurance kicks in.
 - A) Less than \$500.00
 - B) \$500.00 - \$1000.00
 - C) >\$1000.00
 - D) Don't know / Refused

- 3) Please estimate what your current annual out of pocket expense is for your health insurance premium? How much do you have to pay?
 - A) Less than \$500.00
 - B) \$500.00 to \$1499.00
 - C) \$1500.00 or more
 - D) Don't Know / Refused

- 4) Approximately what percentage of your gross family income do you spend on health insurance coverage for yourself and your family members?
 - A) 0% to 5%
 - B) 5% to 10%
 - C) 10% or more
 - D) Don't know / Refused

- 5) Approximately what percentage of your gross family income does your family spend on health care that is not covered by your insurance policy (out of pocket expense)?
 - A) 0% to 5%
 - B) 5% to 10%
 - C) 10% or more
 - D) Don't know / Refused

- 6) During the last 12 months was there any time you or a family member covered by your health insurance policy had a medical problem but, postponed, or did not seek medical care when it was needed or recommended?
 - A) Yes
 - B) No
 - C) Don't know / Refused

- 7) If you have postponed or not sought health care for a medical problem when you felt you needed it during the last 12 months, was that because of cost or because of some other reason?
 - A) Cost
 - B) Some Other Reason (List _____).

- 8) Has there been a time in the last 2 years that you did not follow the advice or treatment, or get a recommended test or see a referred doctor?
 - A) Yes
 - B) No
 - C) Don't Know / Refused

- 9) If you did not follow the advice, get the recommended treatment or see a referred doctor, was that because of cost or for some other reason?
 - A) Cost
 - B) Some Other reason (List _____).

- 10) During the past 12 months did you forgo filling a prescription for medicine?
 - A) Yes
 - B) No
 - C) Don't Know / Refused

- 11) If you did forgo filling a prescription in the last 12 months was it because of cost or for some other reason?
 - A) Cost
 - B) Some other reason (List _____).

- 12) Why do you feel that you are underinsured?

- 13) Could you describe a situation / situations where being underinsured has led to a hardship for yourself or for persons in your family?

- 14) What are your greatest health care expenses currently?

- 15) Have you had to change your lifestyle in order to pay medical bills? If so please explain _____.

- 16) Has poor health insurance coverage ever influenced the medical care you or someone in your family received? If so, could you please describe?

- 17) How have you tried to improve your insurance coverage and what obstacles have stood in your way?

- 18) Is there anything else you would like to share about your experiences of being underinsured that we have not discussed in this interview? If so please explain _____.

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