

# College Students: Rural vs. Urban Health Issues

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# Rural vs. Urban Health Issues

- Do college students with health care needs who attend schools in rural areas have different intermediate or final health outcomes than those in urban areas?

# Rural vs. Urban Health Issues

- If there are differences in intermediate or final health outcomes for these college students with health care needs, what other factors contribute to those differences (e.g. travel distances)?

# Rural vs. Urban Health Issues

- Are the types/numbers of providers or process (likelihood of referral) of health care different for college students with health care needs who live in rural vs. urban environments?

# Rural vs. Urban Health Issues

- If there are differences in the types/number of providers or the process (likelihood of referral) of care in rural vs. urban environments, do those differences contribute to variations in the overall or intermediate health outcomes for college students with health care needs?

# Rural vs. Urban Definition

- The Census Bureau identifies two types of urban areas:
  - Urbanized Areas (UAs) of 50,000 or more people.
  - Urban Clusters (UCs) of at least 2,500 and less than 50,000 people.
- "Rural" encompasses all population, housing, and territory not included within an urban area.

*Source: U.S. Census Bureau*

# Rural Areas

- In New York the state legislature has defined “rural” areas to be those with less than 200,000 in population.
- By this standard, 44 of the state’s 62 counties are rural.

# Urban Living

Advantages: (Urban areas tend to offer-)

- social and cultural opportunities
- museums, theaters
- music venues, comedy clubs
- parks
- assorted bars , restaurants
- street festivals



# Urban Living

## Advantages:

- Multiple public transportation options (trains, buses, taxis) eliminate the need for a car on a daily basis. It may also be easier to access a train station, airport, bus terminal for those times you need to travel.

# Urban Living

## Advantages:

- Surrounded by a large number of varied businesses, internship opportunities are more plentiful. There are also more job opportunities if you need to work while you're attending school.

# Urban Living

## Disadvantages:

- City schools often lack the picturesque appearance and ambiance encompassed by traditional campuses. If you love nature and solitude, you might be turned off by the crowds, pollution and noise of a big-city campus.

# Urban Living

Disadvantage:

- The cost of living in urban areas can be significantly more expensive.

# Urban Living

Disadvantage:

- The crimes rates are typically higher than in rural areas.

# Rural Living

## Advantages:

- With the community tending to center around the campus, there can be a greater sense of unity and camaraderie among the student body.

# Rural Living

## Advantages:

- Depending on the geographic location, rural areas can offer more abundant outdoor activities.

# Rural Living

Advantages:

- The cost of living is typically cheaper.



# Rural Living

Disadvantage:

- Shopping, dining and cultural outlets can be limited.

# Rural Living

Disadvantage:

- With the towns being smaller, it is not uncommon to frequently run into professors and other faculty, and the population of the town itself may be less diverse than it would be in an urban environment.

# Rural Living

Disadvantage:

- With fewer internship prospects in town, a number of students cannot hold them during the school year. They have to secure a position in another area or city during the summer.

# Rural Health Snapshot

	<b>Rural</b>	<b>Urban</b>
● Percentage of USA Population	<b>nearly 25%</b>	<b>75% +</b>
● Percentage of USA Physicians	<b>10%</b>	<b>90%</b>
● Num. of Specialists per 100,000 population	<b>40.1</b>	<b>134.1</b>
● Population aged 65 and older	<b>18%</b>	<b>15%</b>
● Population below the poverty level	<b>14%</b>	<b>11%</b>
● Average per capita income	<b>\$19K</b>	<b>\$26K</b>
● Population who are White (non-Hispanic Whites)	<b>83%</b>	<b>69%</b>

2007-12 National Rural Health Association

# Rural Health Snapshot

	<b>Rural</b>	<b>Urban</b>
• Adults who describe health status as fair/poor	28%	21%
• Adolescents (Aged 12-17) who smoke	19%	11%
• Male death rate per 100,000 (Ages 1-24)	80	60
• Female death rate per 100,000 (Ages 1-24)	40	30
• Population covered by private insurance	64%	69%

# Physicians Workforce

- Nationwide, there were 258.7 active physicians per 100,000 people in 2010, according to new statistics from the Assn. of American Medical Colleges.
- In individual states, ratios range from a high of 415.5 physicians per 100,000 people in Massachusetts to a low of 176.4 per 100,000 in Mississippi.

# Physicians Workforce

- New York State there are 347.5 total active physicians per 100,000 population.
- New York State, there are 104.5 primary care physicians FTEs per 100,000 population.
- New York State, there are 85.7 patient care primary care physicians FTEs per 100,000 population.

# Physicians Workforce

- In seven regions encompassing 48 counties in New York, the number of primary care physicians FTEs per 100,000 population is below the statewide average.



# Physicians Workforce

- Those with the lowest ratios include the Mohawk Valley (six counties) at 70.5 per 100,000.
- The North Country (seven counties) at 72.8 per 100,000.

# Physicians Workforce

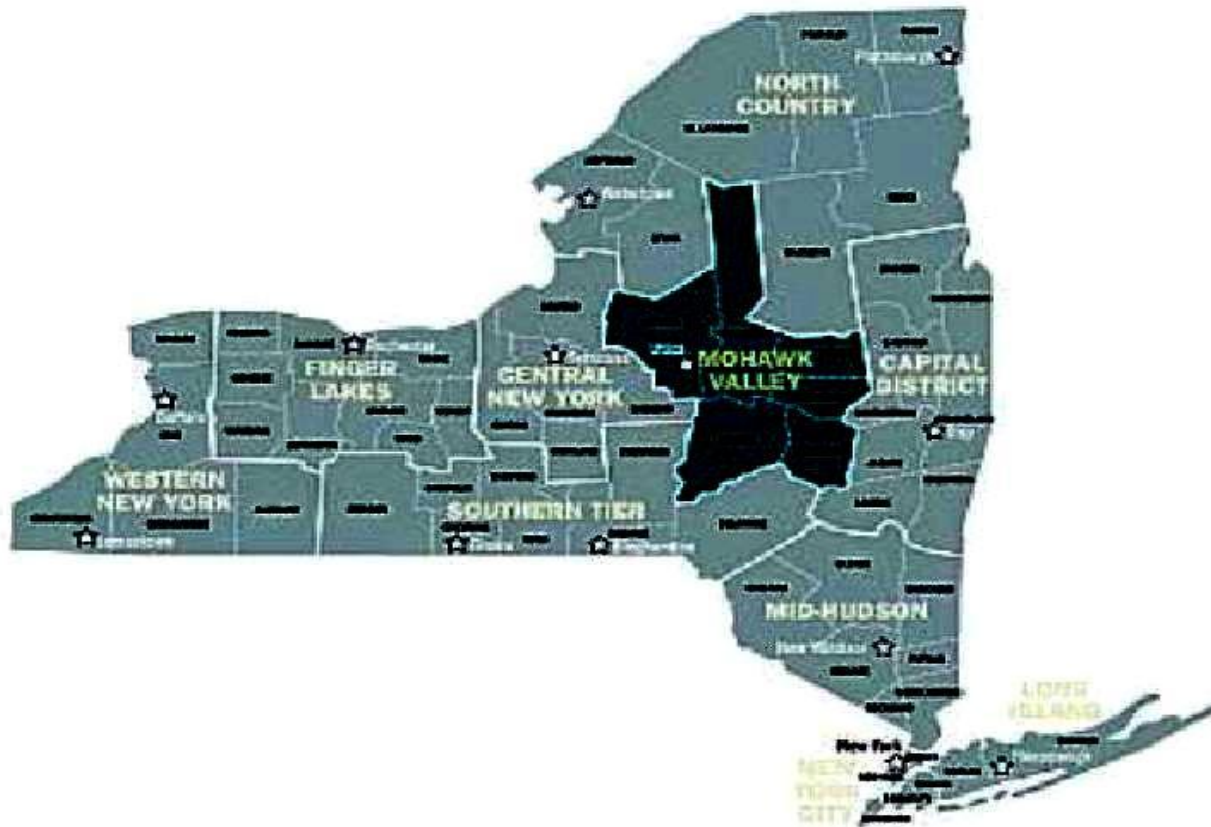


# Physicians Workforce

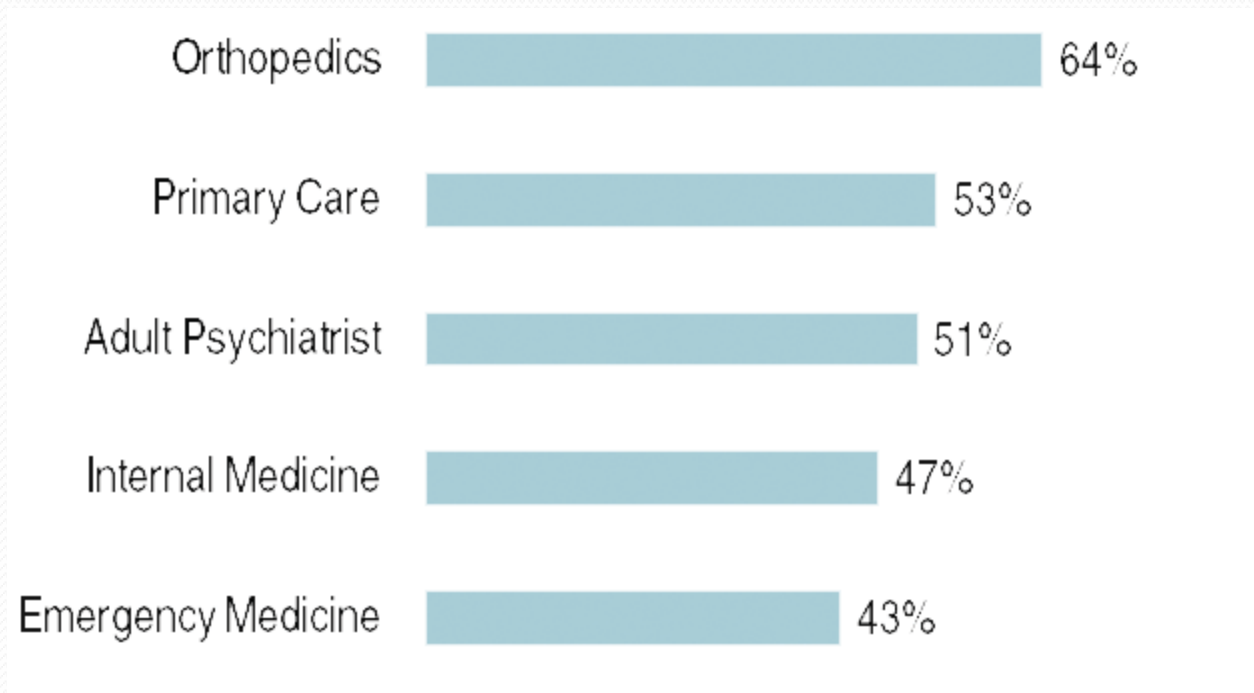
- Central New York (four counties) at 75.9 per 100,000
- Western New York (five counties) at 79.0 per 100,000
- Southern Tier (nine counties) at 84.5 per 100,000

Healthcare Association of New York State: January 2011

# Physicians Worforce



# Most Difficult Specialist to Recruit In Rural Areas



# College Students Health Issues

- Freshman dormitories and college classrooms are not the most hygienic places.
- Classroom attendance may be mandatory, so sick students show up even when they should be in bed.

# College Students Health Issues

- They may cough freely in the air, put soiled tissues on their desks for the next class to share, or fail to wash their hands during a busy dash to class.
- Within the first few weeks of college, students may be facing illness for the first time without a parent.

# Common Conditions Seen in College Students

- Sinus Infection
- Strep Throat
- Urinary Tract Infection
- Ear Infection
- Mononucleosis
- Chlamydia Infection



# Common Conditions Seen in College Students

- Genital Herpes
- Gonorrhea
- Hepatitis
- Tuberculosis
- HIV Infection
- Allergies

# Common Conditions Seen in College Students

- Back Pain
- Broken bone/sprain
- Migraine Headache
- ADHD
- Psychiatric condition
- Chronic Illness (i.e. Diabetes Mellitus)
- Hypertension

# College Students Report Being Treated By A Professional For The Following Conditions:

- Allergies: 21.2%
- Sinus Infection: 17.7%
- Back Pain: 12.9%
- Strep Throat: 11.5%
- UTI: 9.4%

## College Students Report Being Treated By A Professional For The Following Conditions:

- Asthma: 9.0%
- Migraine Headache 8.2%
- Broken Bone/Fracture/Sprain: 7.7%
- Ear Infection: 7.2%
- Bronchitis 6.2%

# College Students Reported

- Attention Deficit and Hyperactivity Disorder (ADHD) 6.7%
- Psychiatric Condition 5.6%
- Chronic Illness 4.9%  
(e.g. cancer, diabetes, autoimmune disease)

# College Students Health Insurance

- Many colleges require students to have health insurance so that they are protected in case of illness or injury.

# College Students Health Insurance

- Since September of 1989, Massachusetts law, G.L. c.15A, § 18, has required every full-time and part-time student enrolled in an institution of higher learning in Massachusetts to participate in a student health program or in a health benefit plan with comparable coverage.

# New York College / University Coverage Requirements

- Some New York colleges and universities may require that students have some form of health insurance coverage.



# College Students Health Plans

- Students with private health insurance are often functionally uninsured as well, since most schools refuse to accept this traditionally elite calling card on campus.
- Consequently, the large uninsured and functionally uninsured populations often rely on school-sponsored health insurance plans for access to care.

# College Students Health Plans

- College-sponsored health plans often pay out far less in benefits than they collect in premiums, skirting state regulations and shortchanging students, according to an investigation by the New York attorney general's office.

New York Times April 8, 2010

# College Students Health Plans

- Many plans also do not cover common situations that affect students, including injuries sustained in suicide attempts or while drunk. And some colleges force students to buy college-sponsored coverage even if they are enrolled in a parent's plan or covered by Medicaid.

New York Times April 8, 2010

# Coverage Options for New York Students

- **Stay on Parent's Plan** - fulltime students may be eligible to remain on their parent's plan. It is easier since parents will most likely handle the bills, but if students go to schools out-of-state, coverage levels may not be as robust as they would be in their home state.

# Coverage Options for New York Students

- **School Sponsored Plan** - Some colleges offer their own health plan. Some common concerns with these plans is that they may not cover services off-campus or students can lose eligibility if they are a part-time student.

# Coverage Options for New York Students

- **Student Health Plan** - These plans are for full-time students typically between 17-29 years old. The major advantage with this plan is that the coverage will travel with the students wherever they go in the US. However, it may require students to pay their premium in a single lump-sum and it is not available in every state.

# Coverage Options for New York Students

- **Individual and Family Plans** - Students can also purchase an individual and family health plan. Individual and family health insurance is a type of health insurance coverage that is made available to individuals and families and offers a range of coverage benefits depending on the actual plan they select.

# Primary Source of Health Insurance

- Parents Plan: 64.4%
- College/University Sponsored plan 14.7%
- Another plan: 12.5%
- Don't Have Health Insurance: 7.0%
- Not sure if have plan: 1.4%



# College Students Health Issues

- Local colleges and universities used to have staffed infirmaries with nurses to treat students who experienced pain or illness during the off hours. But in recent years, many colleges have decided to scale back their center hours, as it was not cost-effective to keep infirmaries open overnight.

# College Students Health Issues

- The limited availability of on-campus care comes at a time when college-age students are showing up by the thousands in already-overburdened emergency rooms in the city.

# College Students Health Issues

- A recent report by the Boston Public Health Commission found that more than 40,000 college-age students are admitted to Boston ERs yearly. While many of those visits required hospital care, the ER also has become the only option for injured or sick college students after regular hours.

# College Students Health Issue

- College-age patients tend to come to the emergency room for infectious diseases and trauma-related injuries, such as fractures, the flu, dehydration, food borne illness, sporting injuries, car accidents and alcohol-related issues.

# College Students Health Issues

- Junior theatre major noticed that her hands were sweaty, her feet were tender and a bumpy rash was starting to form on her arms, days after being prescribed antibiotics from the university health center.

# College Students Health Issues

- She woke up with a swollen mouth. Her roommate brought her to the emergency room, where clinicians prescribed her steroids for the allergic reaction and advised her to see her primary care doctor.

# College Students Health Issues

- **Stevens-Johnson syndrome –**

A severe inflammatory eruption of the skin and mucous membranes, usually occurring in children and young adults following a respiratory infection or as an allergic reaction to drugs or other substances.

# College Students Health Issues

- A 19 year old female student presents to the emergency room with complaint of discharge and vaginal pain after intercourse.
- Her past medical history was significant for an abnormal PAP test before starting school.



# College Students Health Issues

Pelvic exam:

- cervix - erythematous/strawberry color cervix
- white discharge noted in cervical os
- Send for - culture, gram stain and DNA testing

# College Students Health Issues

Treatment :

- Rocephin (ceftriaxone) 250 mg IM
- Azithromycin 1 g orally
  
- Return to clinic for f/u report

# College Students Health Issues

## Follow Up Report

- *Neisseria gonorrhoeae* +
- *Chlamydia trachomatis* +
- Human Papilloma Virus (DNA) +

# College Students Health Issues

- A 19 year old male was brought to the emergency room by his freshman dorm roommates because of changes in mental status.
- On physical exam, he is febrile and hypotensive. His sensorium is depressed but he responds to sternal rub with moans.

# College Students Health Issues

- Temp (103 F) Respiration (22)
- He had a petechial rash on his extremities
- Cerebrospinal Fluid Results:
- CSF Protein > 500 mg/dl
- CSF glucose < 45 mg/dl
- CSF WBC > 10 wbc/ul

# College Students Health Issues

- **Neisseria meningitidis-**
- Meningitis (inflammation of the membranes surrounding the brain and spinal cord) is a common form of meningococcal disease and is characterized by fever, severe headache, and stiff neck.

# College Students Health Issues

- Health Department is informed.
- Antibiotic prophylaxis was recommended for all close contacts.
- Half the dormitory.

# College Students Health Issues

TABLE 1. Number of cases and rates of meningococcal disease — United States, September 1998–August 1999\*

	No. of cases	Population	Rate*
All persons aged 18–23 years	304	22,070,535†	1.4
Nonstudents aged 18–23 years	211	14,579,322†§	1.4
All college and university students	96	14,897,268§	0.6
Undergraduates	93	12,771,228§	0.7
Freshmen¶	44	2,285,001§	1.9
Dormitory residents	48	2,085,618§**	2.3
Freshmen§ living in dormitories	30	591,587§**	5.1

Source: Bruce MG, Rosenstein NE, Capparelle JM, Shutt KA, Perkins BA, Collins M. Risk factors for meningococcal disease in college students. *JAMA* 2001;286:688–93.

\* Per 100,000 population.

† 1998 census data.

§ Source: National Center for Education Statistics, U.S. Department of Education, 1996–1997.

¶ Students enrolled for the first time in any postsecondary educational institution.

\*\* Source: National College Health Risk Behavior Survey (NCHRB) — United States, 1995.



# College Student Health Issues

Most common Sexually Transmitted Disease  
among College Students:

- Human Papilloma Virus (HPV)
- Chlamydia
- Genital Herpes
- Gonorrhea

<http://www.cdc.gov/condomeffectiveness/lates.htm>

# College Students Health Issues

Most common reason college students contract STD's.

- Intoxication
- Oral Contraceptives

# College Students Health Issues

## Contraception:

	Percent(%)	Male	Female	Total
Uses some form:		53.2	58.7	56.8
Do not use any/ Can't recall:		46.8	41.3	43.2

# Leading causes of Death among College Students

- Suicide (6.18, CI 4.97-7.38 )
- Non-Alcohol vehicular (3.51, CI 2.6-4.41)
- Alcohol related vehicular (3.37, CI 2.48-4.26)
- Non-alcohol non-traffic injury (2.39, CI 1.64-3.13)
- Cancer (1.94, CI 1.27-2.62)
- Alcohol related non-traffic injury (1.49, CI 0.90-2.09)
- Homicide (0.53, CI 0.18-0.88)

James C. Turner, MD, University of Virginia, November 2011

# College Students Health Issues

- six in every 100,000 students committed suicide.
- fewer than five in 100,000 students died from alcohol-related incidents.
- no regional differences found among college students suicide rate .

James C. Turner, MD, University of Virginia, November 2011

# College Students Health Issues

- The rate of suicide was 47 percent lower among college students than among the general population of 18- to 24-year-olds.
- Similarly, alcohol-related deaths were 60 to 76 percent lower among college students as compared to the same general population.

James C. Turner, MD, University of Virginia, November 2011

# Recognizing Suicide Warning Signs

- Suddenly worsening school performance
- Fixation with death or violence
- Unhealthy peer relationships
- Violent mood swings or a sudden change in personality
- Indications that the student is in an abusive relationship
- Signs of an eating disorder
- Difficulty in adjusting to gender identity
- Depression

# Selected Primary Substance of Abuse among Rural and Urban Admissions

	Urban Admissions %	Rural Admissions %
● Alcohol	36.1%	49.5%
● Marijuana	17.0%	20.9%
● Cocaine	11.9%	5.6%
● Heroin	21.8%	3.1%
● Non-heroin Opiates	4.0%	10.6%
● Methamphetamine	6.1%	6.3%



# Comparison of Rural and Urban Substance Abuse Treatment Admissions

- Rural admissions were younger and less racially and ethnically diverse than urban admissions

# Comparison of Rural and Urban Substance Abuse Treatment Admissions

- Rural admissions were more likely than urban admissions to report primary abuse of alcohol (49.5 vs. 36.1 percent) or non-heroin opiates (10.6 vs. 4.0 percent)

[http://www.samhsa.gov/data/2k12/TEDS\\_043/TEDSShortReport043UrbanRuralAdmissions2012.htm](http://www.samhsa.gov/data/2k12/TEDS_043/TEDSShortReport043UrbanRuralAdmissions2012.htm)

# Comparison of Rural and Urban Substance Abuse Treatment Admissions

- Urban admissions were more likely than rural admissions to report primary abuse of heroin (21.8 vs. 3.1 percent) or cocaine (11.9 vs. 5.6 percent)

[http://www.samhsa.gov/data/2k12/TEDS\\_043/TEDSShortReport043UrbanRuralAdmissions2012.htm](http://www.samhsa.gov/data/2k12/TEDS_043/TEDSShortReport043UrbanRuralAdmissions2012.htm)

# Demographic Characteristics among Urban and Rural Admissions

	Urban Admissions %	Rural Admissions %
<b>Race/Ethnicity</b>		
Non-Hispanic White	38.1%	77.1%
Non-Hispanic Black	33.7%	8.7%
Hispanic	22.7%	6.6%
American Indian or Alaska Native	1.3%	5.5%
Other	4.2%	2.1%

# Demographic Characteristics among Urban and Rural Admissions

	Urban Admissions %	Rural Admissions %
<b>Age</b>		
Aged 12 to 17	7.1%	8.3%
Aged 18 to 25	16.4%	25.9%
Aged 26 to 49	60.6%	55.4%
Aged 50 or Older	15.9%	10.5%

# Access to Care

- Rural patients are more likely to report having a usual source of care—long identified as an important component of access to care and crucial for ensuring continuity of care.

JD Reschovsky and A Staiti Access and Quality: Does Rural America Lag Behind? *Health Affairs*, 24, no.4(2005):1128-1139

# Access to Care

- The average number of days needed to get an appointment with PCP did not differ significantly between urban and rural patients.
- The time reported traveling to the physician was longer in rural area, although difference were not great.

JD Reschovsky and A Staiti Access and Quality: Does Rural America Lag Behind? Health Affairs, 24, no.4(2005):1128-1139

# Access to Care

- Travel times to specialists were longer for rural patients, with a twenty minute urban-rural differential.
- There were no significant urban-rural differences in wait times in PCP or specialists offices.

JD Reschovsky and A Staiti Access and Quality: Does Rural America Lag Behind? Health Affairs, 24, no.4(2005):1128-1139



# Access to Care

- Rural physicians were more likely to accept Medicare, Medicaid, and uninsured patients. They also provided more charity care, although differences are not statistically significant.

JD Reschovsky and A Staiti Access and Quality: Does Rural America Lag Behind? Health Affairs, 24, no.4(2005):1128-1139

# Access to Care

- Despite the low specialist supply in rural area, there was little difference across urban and rural areas in the ability to obtain referrals to high quality specialist.
- However rural physicians were more likely to report problems obtaining inpatient mental health services.

# Alternatives to Access to Care

- Two specific alternatives were identified to assist rural communities in having access to care in their communities:
- Telemedicine
- Mid-level practitioners.

Healthcare Association of New York State: January 2011

# Alternatives to Access to Care

- Eighty-five percent of rural hospitals currently use some form of telemedicine:
- the vast majority (76%) use it for radiology.
- approximately 10% are stroke centers.

Healthcare Association of New York State: January 2011

# Summary:

## College Students Health Issues

- Approximately 80% of students have insurance; of this number, most (67%) have access to health insurance coverage through employer-sponsored plans.
- Importantly, these students (87%) are generally dependents and access health insurance coverage through another person's policy (such as a parent).

## Summary:

# College Students Health Issues

- Most common illnesses-no significant difference found in rural vs. urban college students.

# Summary:

## College Students Health Issues

- Although there was a profound shortage of physicians in rural areas, other providers and the use of telemedicine provides adequate access to care on par with the urban areas.

# Summary:

## College Students Health Issues

- College students with health care needs who attend schools in rural areas have no significant difference in intermediate or final health outcomes than those in urban areas.



# Summary:

## College Students Issues

- Differences were found in the types/number of providers in rural and urban areas, however those differences did not contribute to variations in the overall or intermediate health outcomes for college students with health care needs.



College Students Health Issues

**THANKS**

# College Students Health Issues

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