

Dr. Alison Davis



Dr. Brian Whitacre

# The Economic Importance of Health Care

Presented by Center for Economic Analysis of Rural Health Articulate and communicate the traditional measures of the economic impact of hospitals and health care systems on rural communities.

Consider other techniques and measures that also capture the value of rural health care.

# SESSION GOALS

# SESSION OUTCOMES

- Participants will understand best practices for communicating the value of health care institutions to key stakeholders
- Participants will understand how to communicate the value of their local healthcare system



# TODAY'S AGENDA

- Brief overview of CEARH
- Traditional Economic Impact Analysis
- Return on Investment Methods
- Other mechanisms for measuring importance
- Three case studies
- Communicating your message
- Useful resources



# Why CEARH?

To increase public and stakeholder awareness of the economic importance of rural health care sectors on rural, state & national economies, as well as the relationship between community economic development & health outcomes of rural residents.



# What CEARH does

- Responds to pressing issues facing rural communities that are identified through the Federal Office of Rural Health Policy, the Center's advisory council, and other partners.
- Creates timely, relevant, and useful research-based tools that health care leaders, elected officials, economic development professionals, and community leaders can use to sustain their rural health economy.
- Provides face-to-face and online trainings and workshops, as well as widely disseminates resources nationally through its advisory council, rural health conferences, and rural health online repositories.





# **CEARH** Team



Dr. Alison Davis CEARH Director University of Kentucky



Ms. Simona Balazs CEARH Research Coordinator University of Kentucky



Mr. Andrew L. Owen CEARH Researcher University of Kentucky



Ms. Melody Nall CEARH Engagement Coordinator University of Kentucky



Dr. Brian Whitacre CEARH Faculty Oklahoma State University



Ms. Sarah Bowker CEARH Communications Coordinator University of Kentucky



Mr. Ernie Scott Kentucky Office of Rural Health CEARH Trainer

### **CEARH Advisory Council**

#### ACADEMIC PARTNERS





University of Wisconsin

#### Dr. Mark Skidmore Michigan State University

#### **HEALTH CARE PRACTITIONERS & TECHNICAL ASSISTANCE PROVIDERS**



Ms. Linda Weiss, LCSW National Cooperative of Health Networks Association



Dr. Chris Salyers National Organization of State Offices of Rural Health



Dr. Tom Harris University of Nevada - Reno



Dr. Bill Auxier **Rural Health Leadership Radio** 

Ms. Corie Kaiser **Oklahoma** Office of Rural Health



Mr. Ernie Scott Kentucky Office of Rural Health

# **Traditional Economic Impact Analysis**

- What is economic impact analysis?
- How do you do EIA?
- What are the most important takeaways from EIA?
- Pitfalls associated with EIA





# POLL How familiar are you with Economic Impact Analysis (EIA)?

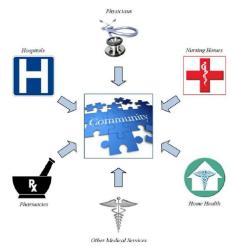


## What is economic impact analysis?

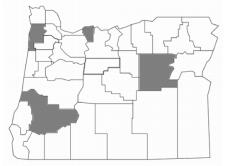
"Economic Impact" studies document how one element of an economy affects others.

- For example, a hospital hires workers, buys supplies, and purchases services – often from a variety of local industries.
- Those workers and businesses then spend a portion of their money locally again impacting others.
- Quantifying these impacts on the local economy helps tell the story about how your hospital benefits the community BEYOND simply providing healthcare
- Many hospitals use EIA studies as part of their engagement with the local community





Oregon County Fairs: An Economic Impact Analysis

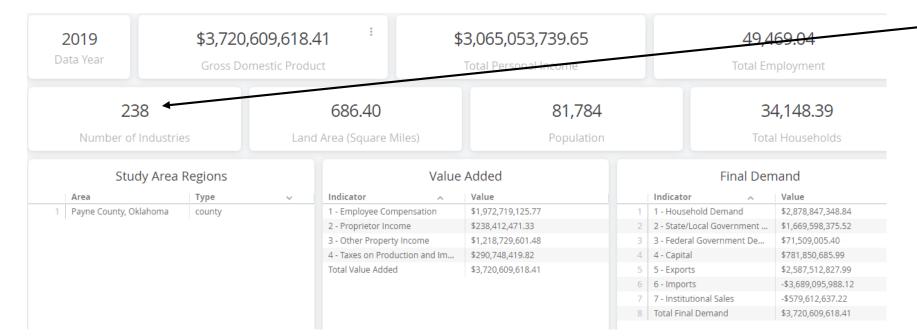


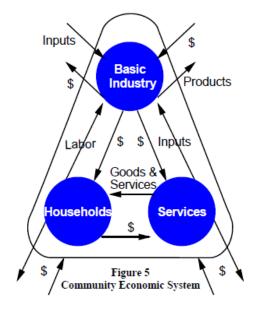
# POLL What do you think a typical "Job Multiplier" value is for rural hospitals?



## What is economic impact analysis?

- The main idea is that every dollar spent locally is "multiplied" as it changes hands
- Software packages used have immense amounts of data about how industry interactions take place





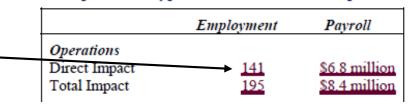
#### 238 industries... just in Payne County, OK

Display Code	<b>Display Description</b>	Employment
	Oilseed farming	0.88
2	Grain farming	19.84
}	Vegetable and melon farmi	0.99
ļ.	Fruit farming	0.67
i i	Tree nut farming	5.23
483	Offices of physicians	165.71
484	Offices of dentists	259.41
485	Offices of other health pra	190.63
486	Outpatient care centers	187.94
487	Medical and diagnostic lab	17.35
488	Home health care services	57.92
489	Other ambulatory health c	145.48
490	Hospitals	223.40

Example of industries in IMPLAN (546 total)

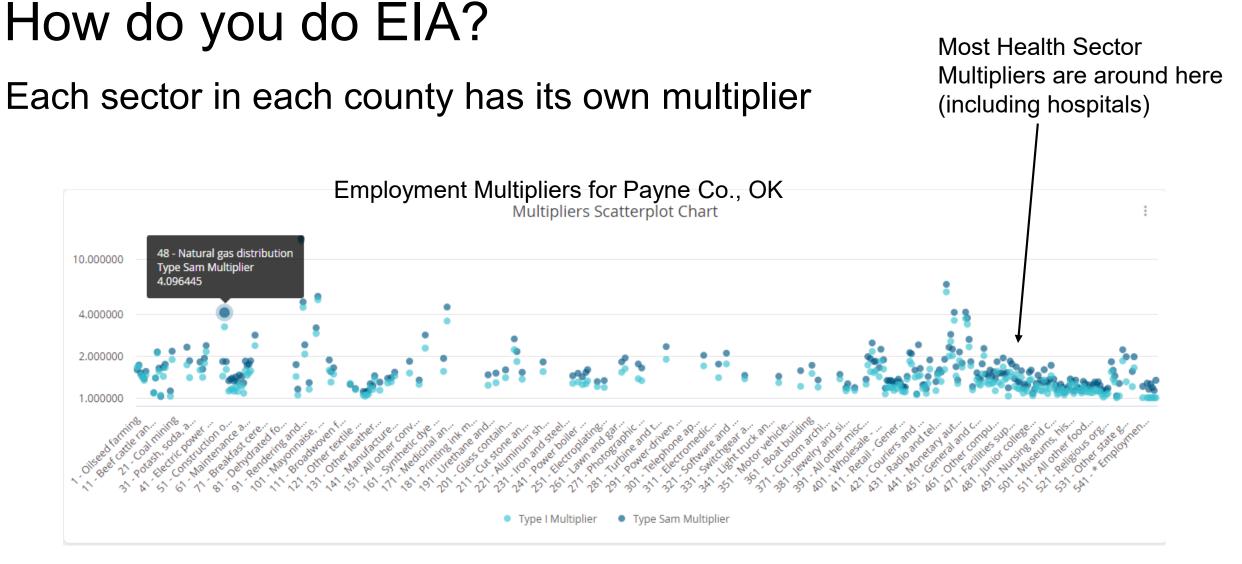
- Hospitals provide information relevant to their unique situation:
  - Total annual payroll and number of employees
    - Could include other spending by category, if known
  - Total construction cost (if applicable)
  - Definition of local area (typically a single county, but could be regional)
- Software packages use multipliers based on what businesses exist in the local area and historical data on how they interact
- Outputs typically defined in terms of # jobs, total income, and others (retail sales, local tax revenue contribution)





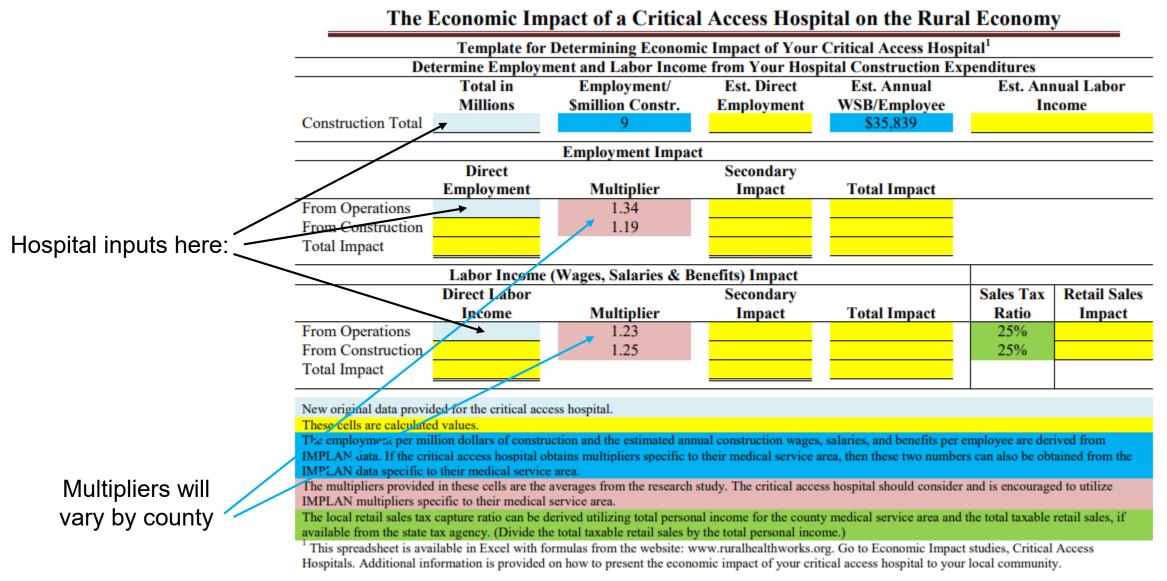
Impact of a Typical Critical Access Hospital



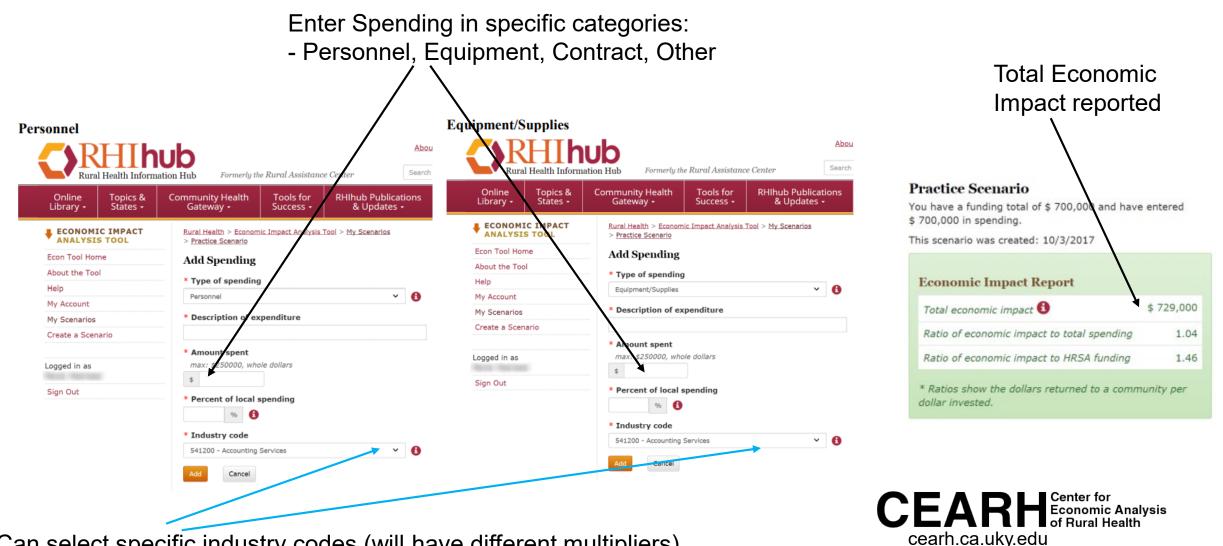




**Example from Rural Health Works** 

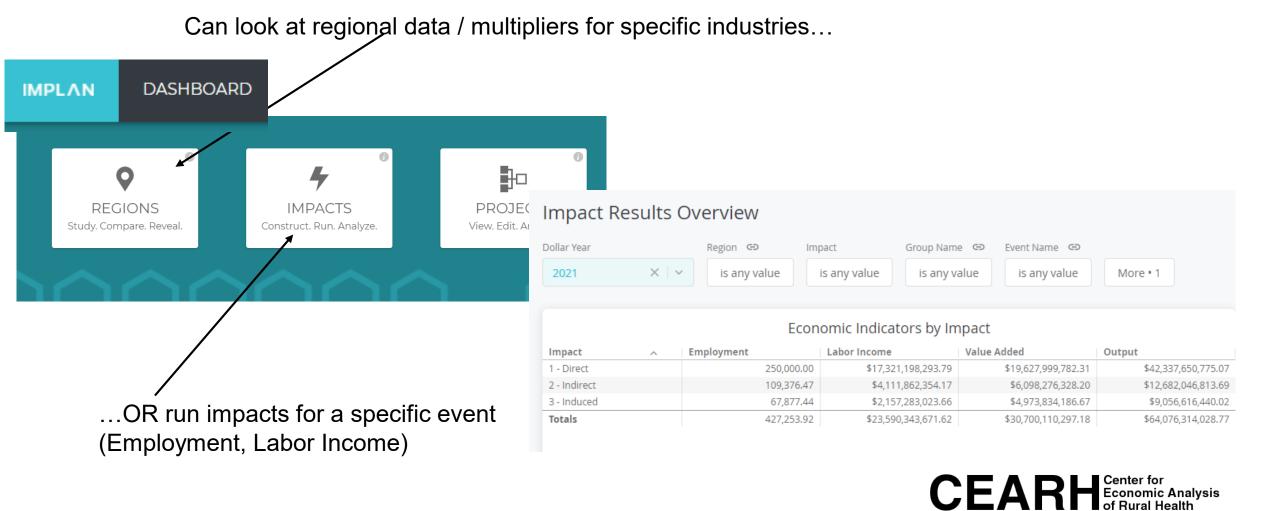


Example from RHIhub



Can select specific industry codes (will have different multipliers)

Analysis in IMPLAN



cearh.ca.uky.edu

# Framing your EIA

Most EIA's include employment and revenue impacts as well as federal, state, and local tax impacts

# Be sure to also include "industries impacted' because it helps to personalize the story

Table 3. Top Ten Industries Most Impacted by Hospitals.	
---	--

Local industry	Dollars Spent Locally
Other financial investment services	\$289,815
Other ambulatory healthcare services	\$273,540
Real estate	\$270,865
Employment services	\$172,779
Wholesale	\$172,125
Electric power distribution services	\$129,251
Management consulting services	\$102,029
Insurance	\$92,454
Legal services	\$64,070
Limited-service restaurants	\$47,033
Maintenance and repairs of nonresidential structures	\$46,113

Table 4. Top Ten Industries Most Impacted by Hospital Employee Spending.							
Local industry	Dollars Spent Locally						
Limited-service restaurants	\$145,611						
Offices of physicians	\$140,119						
Real estate	\$124,857						
Retail trade – general merchandise stores	\$94,506						
Wholesale trade	\$84,860						
Used and secondhand goods	\$72,584						
Monetary authorities and depository credit services	\$68,054						
Electric power transmission and distribution	\$63,953						
Retail services – nonstore retailers	\$60,155						
Retail services – food and beverage stores	\$47,761						
Retail services – motor vehicle and parts dealers	\$40,862						



# Important takeaways from EIA

- Widely-recognized tool that is useful for sharing how a hospital contributes to the local economy
- Constructed from current hospital data on # employees / spending, but requires "multipliers" that capture local business relationships
- Multipliers / tools for constructing EIA are available from several different sources...don't buy IMPLAN yourself!
- Should be considered only PART of the overall discussion about the value of a rural hospital





# Pitfalls associated with EIA

- EIA makes lots of assumptions! They don't always hold.
  - Based on a single year's data
  - Local prices (including wages) not affected by input changes
  - No constraints for local input suppliers can they handle a huge order?
  - Don't account for reorganization of economic activity
- They require a significant amount of data (can be costly)
- Not everyone using the tools understands the complexity of the economic relationships involved
  - Selecting what industries to exclude / include can change the results
  - Do you include the Dr. / Technician located on hospital grounds?
- Even the best data available lags the current "on-the-ground" situation by several years



### How does a community or hospital do EIA?

There are multiple options!

- In the past, the National Rural Health Works Program provided training to individual states (running IMPLAN, report templates, etc.)
- RHIhub currently has an Economic Impact Analysis Tool on their site: <u>https://www.ruralhealthinfo.org/econtool</u>
- Most land-grant universities have people working in economic development who can complete these reports
  - Often found in agricultural economics departments
- Some SORH's have this capability (Lara Brooks in OK)
- Several state Hospital Associations do this for all of their members



### Other evaluation methods to showcase value

#### **Return on Investment (ROI)**

How well an investment has performed.

While not useful for institutions as a whole, a very useful tool for evaluating tax-payer funded projects and programs.

Helps normalize across different investments to point to the "biggest bang for the buck."

#### **Cost-Effectiveness Analysis**

Examines both the costs and health outcomes of one or more interventions.

It compares an intervention to another intervention (or the status quo) by estimating how much it costs to gain a unit of a health outcome, like a life year gained or a death prevented.





# ROI vs Cost-Effectiveness analysis

ROI = Financial gains / Improvement investment costs CEA = Improvement investment costs / Effectiveness

How do you know when to use these measures?





# How to conduct an ROI

Need to know two things:

1) How much was invested

2) What were the financial gains

To do this:

- a) Define the scope of services affected by the improvement action
- b) Define the timeline
- c) Define the comparison group
- d) Identify the health care quality or health care utilization affected by the program





# **Useful ROI** applications

- EHR implementation
- Patient navigator program
- Cancer screening program





# Other measurable economic and community impacts

- Reduced access to emergency care
- Reduced access to specialty care
- Reduced tax base (reduction in income, sales, and property taxes)
- Loss of export base
- Difficulty in attracting and retaining industry
- Difficulty in attracting and retaining residents





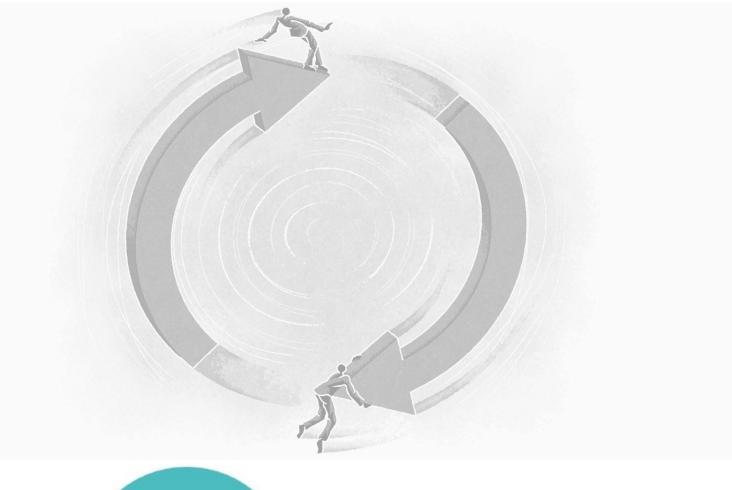
# Identify and Address Patient Bypass

- Most rural hospital bypass studies found bypass rates that ranged from 25 percent to 50 percent with extremes ranging up to 70 percent.
- Depending on the extent of the bypass behavior, hospitals may experience lower patient volumes, reduced service offerings, financial distress, and/or eventually closure (Radcliff et al, 2003).
- Malone and Holmes (2020) found that rural hospitals are more likely to be bypassed by local residents if they are a Critical Access Hospital (CAH), smaller, less profitable, and do not offer obstetric services. Patients who bypassed were slightly more likely to be seeking elective care, obstetric services, and/or services related to the circulatory system or musculoskeletal system.
- Can communicate and monetize the consequences of bypass





# Vicious Cycle

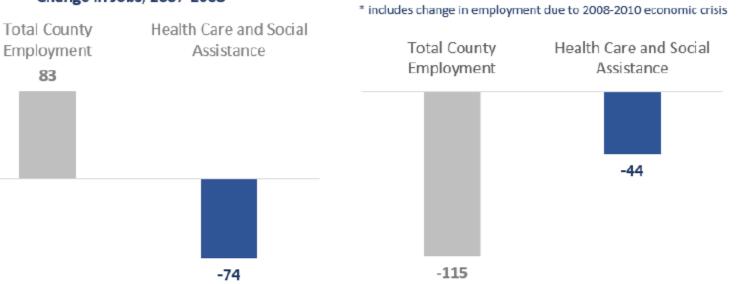




# Case Study 1

#### 0 Hospital Pawnee Municipal Hospital Address: 1212 FOURTH STREET City: Pawnee State: Oklahoma RUCA 10 CBSA: Metro Rurality Isolated Rural Medicare Payment Classification: PPS Closure Date: August, 2007 # of Beds: 25 Complete or Converted: Complete 00

#### Pawnee County, Oklahoma



#### Change in Jobs, 2007-2008

#### Pawnee Municipal Hospital

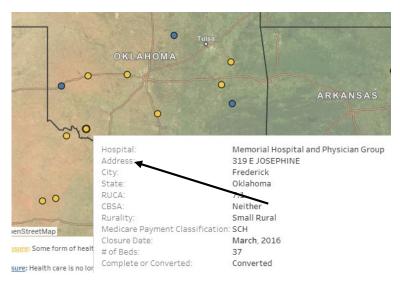
- Closed in August 2007
- Lost 74 Health Care Jobs by 2008
- Health Care jobs remained significantly lower even in 2012
- Total jobs also declined by around
   200 between 2008 2012 (4.5% loss)

Pawnee County	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total Employment	4,493	4,456	4,624	4,442	4,403	4,392	4,475	4,275	4,319	4,351	4,277
(number of jobs)											
Health Care &	870	922	1,056	879	774	745	671	639	696	642	701
Social Assistance											
Hospitals	202	193	175	166	155	167	119	75	113	79	173



Net Change in Jobs, 2007-2012\*

# Case Study 2

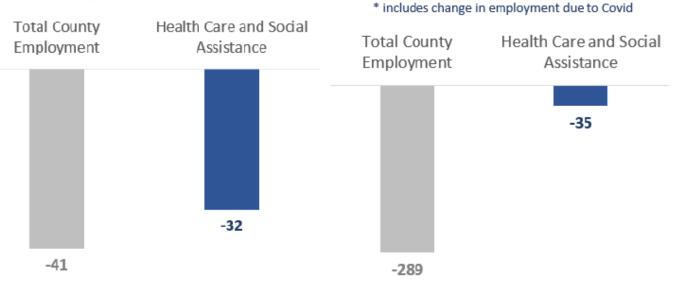


#### Memorial Hospital

- Closed in March 2016
- Lost ~100 Hospital jobs between 2014
  2017
- Health Care jobs remained significantly lower even by 2019
- Total jobs also declined by around 200 between 2016 – 2019 (8.7% loss)

#### Tillman County, Oklahoma

Change in Jobs, 2016-2017



Tillman County	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Employment (number of jobs)	2,372	2,442	2,462	2,393	2,370	2,316	2,275	2,186	2,125	2,027
Health Care & Social Assistance	369	363	325	300	280	223	191	196	169	188
Hospitals	125	117	147	154	138	85	66	90	74	102



Net Change in Jobs, 2016-2020\*

# Case Study 3

#### ABC County Healthcare Sector Highlights

The ABC Hospital is an important part of the Healthcare and Social Assistance industry. The Healthcare and Social Assistance industry\* includes:

- Ambulatory Healthcare Services (offices of physicians, dentists, other healthcare practitioners, outpatient care centers, labs, home healthcare services),
- Hospitals,
- · Nursing and Residential Care facilities, and
- Social Assistance (individual and family services, community food, housing and emergency and other relief services, vocational rehabilitation services and child daycare services)

The healthcare and social assistance industry is the second largest industry in ABC County. Within that, ABC Hospital is the largest employer.

ABC County is designated as a Medically Underserved Area and a Health Professional Shortage Area by the Health Resources and Services Administrations (HRSA). These designations mean that the County does not meet the current need for healthcare services and professionals.

In addition, the County's elderly population data projects a 38.7% increase in the 65 and older population between 2018 and 2030. This will increase the need for healthcare services.

The healthcare industry can be a useful economic development tool because it:

- · Helps keep healthcare dollars in the local economy
- Brings in external dollars through private insurance and Medicare and Medicaid
- Helps retain businesses and attract new ones
- Ensures a healthy and productive workforce

A decline in hospital employment would have a negative impact on:

- Access to emergency care
- Access to specialty care
- Tax base
- Business retention and attraction
- · Overall employment in the county



In 2016, the ABC County healthcare industry\* was directly responsible for:

\$54 million in output

\$23 million in income

576 employees

REPORT PREPARED BY:

cedik.ca.uky.edu

Community and Economic

Development Initiative of Kentucky

CEDIK

\*Not including social assistance. Data from Implan, 2016.

L University of

🌃 Kentuckv

College of Agriculture.

Food and Environment

# Contribution to local economy

EIA



#### Economic Development

Access to Care

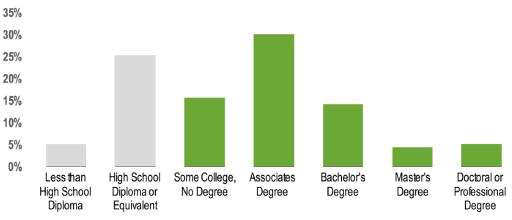
# Case Study 3 Continued

 Table 1. Current and 5 Year Projections for Employment\* and Wages in
 County.

 Healthcare and Social Assistance is the industry sector projected to gain the largest number of jobs in the next five years.
 Output

Top 10 Industries by Employment	Current Employment	Average Annual Wages	LQ	5 Year Forecast Employment	5 Year Average Annual Rate of Growth
Retail Trade	612	\$24,987	1.22	1	0.00%
Healthcare & Social Assistance	610	\$30,953	0.91	31	1.00%
Agriculture, Forestry, Fishing & Hunting	544	\$15,564	8.33	8	0.30%
Educational Services	544	\$27,862	1.41	-9	-0.30%
Construction	460	\$43,236	1.76	20	0.80%
Manufacturing	333	\$44,638	0.86	-10	-0.60%
Accommodation & Food Services	287	\$15,956	0.68	5	0.40%
Public Administration	268	\$28,365	1.21	-2	-0.10%
Other Services (except Public Administration)	214	\$18,053	1.04	1	0.10%
Wholesale Trade	209	\$40,302	1.14	-8	-0.80%
Total - All Industries	4,686	\$30,471	1.00	43	0.2%

Figure 2. Hospital Employee Educational Attainment. 70% of Hospital Employees have education beyond a High School Diploma.



\*Does not include self-employment.



# Case Study 3 Continued

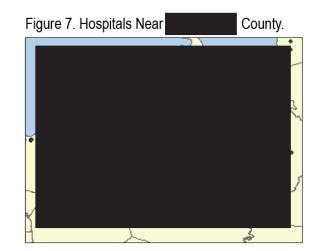
#### What if there is a decline or loss in hospital employment?

Previous literature that examines what happens if a county is facing a decline or loss in hospital employment highlights several key economic and community impacts:

**Reduced access to emergency care.** There is evidence that increased distance to healthcare raises infant mortality rates and it increases deaths from unintentional injuries and heart attacks (Buchmueller & al, 2004).

The transportation challenges can be fatal in case of life-threatening diseases or emergencies. CDC lists health attack, stroke, and accident injuries as the top three causes of death in emergencies (CDC, 2017).

Previous studies have shown that the EMS response intervals are strongly associated with cardiac arrest survival rates, with longer response intervals linked to worse outcomes. Response intervals include the time required to receive and process the initial 911 call, notify closest EMS responders, and for responders to arrive on scene with a defibrillator. Survival decreases by approximately 7 to 10 percent for every minute after witnessed cardiac arrest that passes without administration of CPR (Graham, McCoy & Schultz, 2015). For example, the closest hospital for residents in Breckinridge County would be more than 20 miles away (Figure 7).



**Reduced access to specialty care.** Hospitals in smaller rural communities cannot afford to offer the range of specialty services available in hospitals in larger communities. Thus, residents in these communities already have to travel outside of the area for some specialty services, particularly for complex medical needs. These "pre-existing difficulties in accessing specialty care" increase if there is a decline in employment and services offered by a hospital.

**Reduced tax base.** The loss in jobs and residents has a negative impact on the tax base for the county. A reduction in the tax revenue will lead to a decline in the resources available for schools and other public services, including a potential decline in jobs in the public sector as well. Secondary data suggest that a ten percent loss in hospital employment would result in about \$110,000 total state and local tax revenues, including income tax, sales, and property taxes (Implan, 2016).

**Difficulty in attracting new businesses.** Having access to a good healthcare system is one of the main criteria in business relocation. A loss or decline in hospital employment in the area makes it difficult for a rural community to attract new industries or businesses, particularly since some of the industries are required to have access to a hospital emergency department in close proximity due to hazardous jobs (Davis, 2015; Doesken, Loewen & Strawn, 1990).

**Loss in jobs**. The loss in jobs is two-fold. On one hand, there is a direct loss in employment for the healthcare sector. Generally, rural communities face difficulties recruiting and retaining providers. If there is additional decline, many physicians and other providers leave the community, resulting in a healthcare workforce shortage in the county. On the other hand, there will be an indirect loss in employment in the industries that are interacting with the healthcare sector. In many rural communities, the hospital is the largest employer and many businesses around it depend on their interaction with the hospital and its employees (Wishner et al, 2016).



### Communicating Your Impact You have the numbers and/or stories, now what?

- Start early
- Define your audience
- Community engagement
- CHNA as an opportunity
- Create a communications strategy





## **Define** your audience

- Federal: Rural Health Policy Institute
- State: State legislators, Hospital Systems
- Local: Local providers (those who provide referrals), elected officials, economic development professionals, and community-at-large





# Community Engagement

- Essential to be active participants and leaders in the community
- Participate or lead local healthcare networks
- Participate in economic development
- Use the CHNA as a positive marketing tool





### **CHNAs** should be widely disseminated

#### Barbourville ARH



#### 2016 community health needs... addressed!

Goal: Increase community awareness of services and improve communication with patients.

Physician and staff communication with patients improved in 2016 through the implementation of HCAPHS surveys so that patient satisfaction could be better monitored. In 2018, this process moved to real-time. Our focus is patient care, discharge readiness and the overall rating of the hospital.

We increased our efforts to promote hospital services and improve community participation through hospital involvement at several Health Fairs, as well as offering weekly education opportunities at the Knox County Farmers Market. The hospital now has a social media presence on Facebook to highlight services and share event information. Hospital administration has become more involved with the Knox County Chamber of Commerce and participated in the 2017 Leadership Tri-County class.

Our hospital has been successful in reducing Emergency Department wait times. We created a multidisciplinary team that meets monthly; as a result the hospital improved patient flow to shorten the time between patient/physician interaction. Between 2016 and 2018, there was a 6% improvement in arrival to admission times, a 15% improvement in arrival to discharge times and a 66% improvement in arrival to physician evaluation times. Our Emergency Department satisfaction scores continue to improve, which indicates that the community perception of the Emergency Department has improved.

Goal: Provide educational programs and support outreach initiatives to increase community health literacy and provide opportunities for prevention education.

The hospital participated in numerous health fairs during the past 3 years. KCEOC, Knox County Health Department, and our Health Fair. We continue to work within our community to become smoke free.

The hospital provides a full time BeneFind Healthcare Specialist to assist anyone needing help with their medical bills.

Sponsored drunk/impaired driving simulator for students of Knox Central High School.

#### Our greatest success...

...has been the ability to bring Specialists into the community. So many patients in our community have difficulty traveling for many reasons; bringing these providers into the area has improved access to advanced care for many people.



80 Hospital Dr, Barbourville, KY 40906

www.arh.org/Barbourville

### **Communication strategy**

	Federal	State	Local
Job impacts	Х	Х	XX
Tax impacts		Х	XX
Financial impacts (ROI)	XX	Х	
Population impacts			XX
Access to care	Х	XX	XX
Access to specialists		Х	XX
Industry impacts	Х	Х	XX
Health impacts	XX	XX	XX
Patient bypass			XX
Importance of Medicaid/Medicare	XX	XX	

CEARH Center for Economic Analysis of Rural Health cearh.ca.uky.edu

### **Communications** objectives

- Are you trying to educate or provide new information?
- Are you trying to change behavior?
- Are you calling your target audience to action?





# POLL Which communication tactic do you think has the most impact for your organization/institution?



# **Communications Tactics**

### **Public Relations**

- Community relations
- Government relations
- Organization outreach
- Website

### **Paid Advertising**

- Print
- Radio & TV
- Outdoor billboards
- Social media

### Word of Mouth

- Board Development
- Internal/employee relations
- Local providers
- Public meeting attendance & participation
- Personal contacts





# Bright Spots Report (Texas A&M)

**Bright Spot Commonalities** 

- Multiple sources of leadership are vital
- All bright spots possessed cultures of innovation and excellence
- Data are needed to inform leadership, demonstrate impact of culture change, and communicate with rural communities
- A spirit of inquiry and upstream thinking (constant improvement)





## **Useful** Resources

IMPLAN: <a href="https://www.implan.com">https://www.implan.com</a>

ROI:<u>https://www.ahrq.gov/sites/default/files/wysiwyg/professionals/systems/</u> hospital/qitoolkit/combined/f1\_combo\_returnoninvestment.pdf

CEARH Data Website: <a href="http://cearh.ca.uky.edu/resources">http://cearh.ca.uky.edu/resources</a>

RHIhub: https://www.ruralhealthinfo.org/econtool/about

Texas A&M Rural and Community Health Institute (ARCHI). 2021. Bright Spots: Case studies of innovative rural healthcare. Retrieved from <u>https://architexas.org/rural-health/bright-spots.html</u>

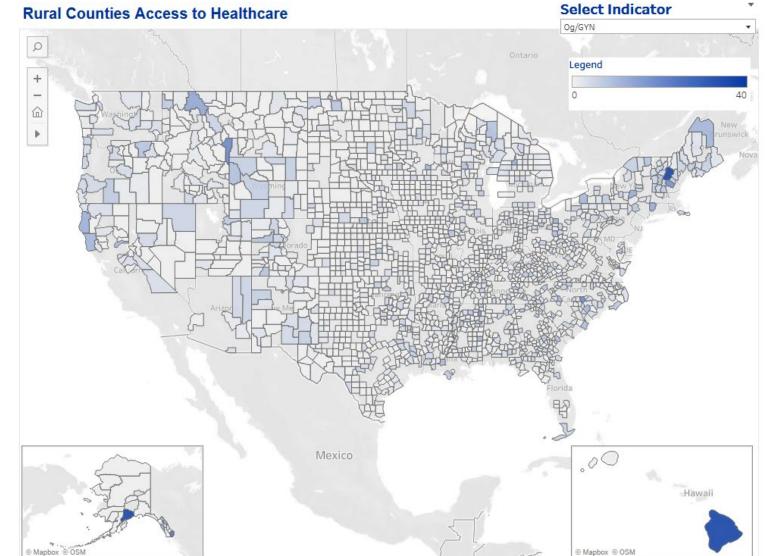




#### cearh.ca.uky.edu/resources

Data Available from CEARH





# CEARH wants to hear from you

### What economic impact questions do people have? Open time for Q&A from attendees



# NOSORH

National Organization of **State Offices of Rural Health** 

# THANK YOU!

## November 2021 Webinar

- All about housing
- Rural housing toolkit in development with national partners
- List general goals of that webinar
- NOSORH has graciously agreed to partner with CEARH to offer the webinar – be on the lookout for the announcement!
- Sign up for our newsletter if you would like to be notified directly





### cearh.ca.uky.edu

Sign up for updates, link is on home page



CEARHposts

University of Kentucky.

