**The Economic Impact of a Typical Veterinary
Clinic Practice on an Appalachian County**

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The most important outcome from a veterinarian establishing a practice in an

Appalachian County is the care given to large and small animals. There is also an economic

impact from the clinic. By establishing a clinic practice, a veterinarian is creating jobs and

generating income. To create the methodology for determining the economic impact, a research

team of veterinary medicine, statistics and agriculture-economic experts was enlisted during all

stages of the research. The methodology described below is one of the results of the research

team.

1. Determining "Typical Practice" Employment

Even though there isn't a "typical practice" defined for veterinary clinics, for the

purposes of measuring the economic impact, we are assumed that a typical established veterinary

clinic practice has one veterinarian and five employees, (Table 1).

Table 1
Employment and Income for Typical Established Veterinary Clinic

Employee	Full- time equivalent Employees	Estimated Income
Veterinarian	1	$124,051
Credentialed Technician	1	$31,129
Non-credentialed Technician	1	$31,116
Veterinary assistant	1	$22,464
Other Staff	2	$49,504
Total	**6**	**$258,264**

SOURCES: American Veterinary Medical Association. (2013). Report *on Veterinary practice business measures*
(2013 ed.). Schaumburg, IL: n.a.

This employment configuration was derived through research and expert advice from the veterinary professionals affiliated with Lincoln Memorial University College of Veterinary and Comparative Medicine and data from the recent AVMA business practice report. In this report, a mixed animal veterinary clinic had an average of 5.8 full-time equivalents. Wage data were also taken from that report. A typical veterinary clinic would generate annual wages of $258,264.

As the veterinary clinics and employees spend money locally, they create secondary economic impact in other businesses in the county. The secondary benefits are estimated from economic multipliers derived through methodology described below.

2. Methodology for Estimating Multipliers

The multipliers are estimated using an input-output model and IMPLAN data. This report focuses on the impact in terms of employment and wages. Before presenting these impacts, the base concepts of employment and wage multipliers will be discussed. **Figure 1** illustrates the major flow of goods, services, and dollars of any economy. The foundation of a county's economy includes those businesses which sell some or all of their goods and services to buyers outside of the county. Such a business is considered to be a "basic" industry. The flow of products out of, and dollars into, a county are represented by the two arrows in the upper right portion of **Figure 1**. To produce these goods and services for "export" outside the county, the basic industry purchases inputs from outside of the county (upper left portion of **Figure 1**), labor from the residents or "households" of the county (left side of **Figure 1**), and inputs from service industries located within the county (right side of **Figure 1**). The flow of labor, goods, and services in the county is completed by households using their earnings to purchase goods and services from the county's service industries (bottom of **Figure 1**). The interrelationships in

Figure 1 illustrate that a change in any one segment of a county's economy will have

reverberations throughout the entire economic system of the county.

Consider, for instance, the opening of a veterinary clinic. The dollars going to households

will increase as employees receive wages. Likewise, the veterinary clinic will purchase goods

from other businesses and dollar flow to other businesses will increase. This, in turn, increases

Inputs $

$ **Basic Industry**   Products

Labor $ $ Inputs

Goods & Services

Households   **Services**

$

$ $
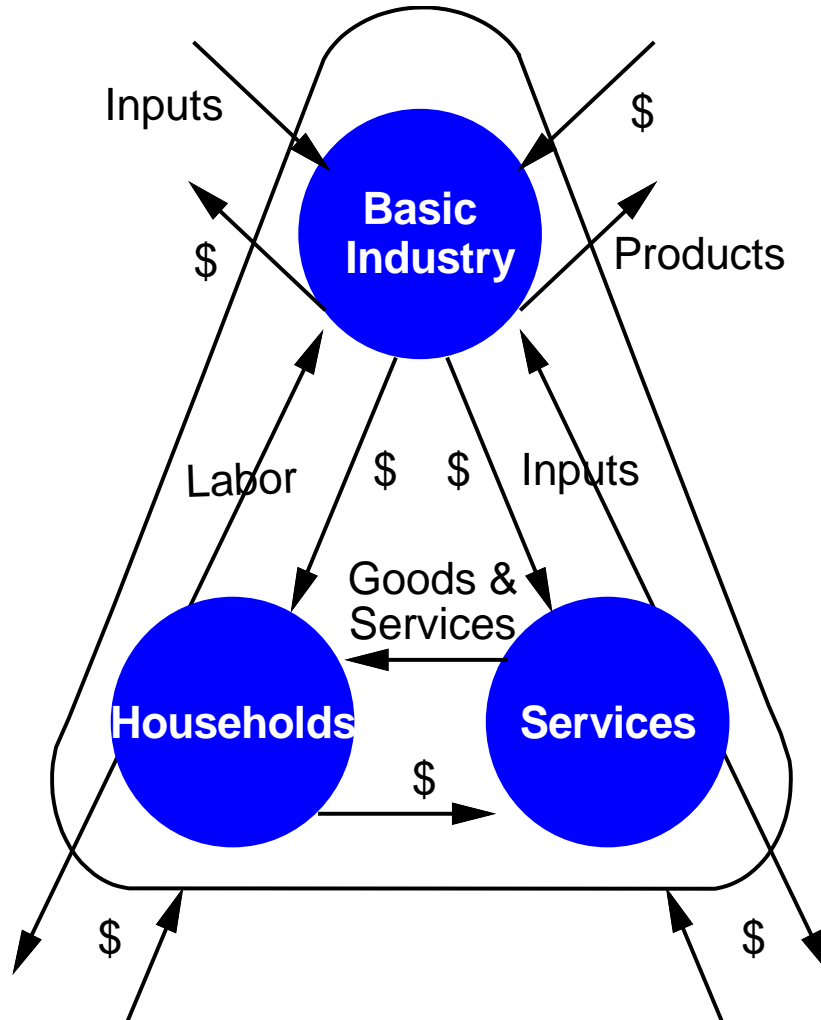
these businesses' purchases of labor and inputs. Thus, the changes in the economic impacts affect

the entire local economy.

Figure 1
Community Economic System

A measure is needed that yields the effects created by an increase or decrease in economic activity. In economics, this measure is called the *multiplier effect*. Multipliers are used to indicate the ratio between direct impacts and the total impact. An employment multiplier of 2.0 indicates that if one job is created by a new industry, such as a veterinary clinic, 1.0 job is created in other sectors due to business and household spending.

3. Total Impacts of a Typical Veterinarian in an Appalachian County

Employment and wage multipliers were derived by running the model on 37 Kentucky counties, 42 Tennessee counties and 22 Virginia counties. All counties were in the Appalachian Region. The average of these multipliers was used to estimate secondary impacts. The data in **Table 2** illustrates the secondary and total impacts from a veterinary clinic. Based upon the results of other economic impact research conducted by the National Center for Rural Health Works, the variance in the economic multipliers from state to state is insignificant therefore justifying the utilization of results in **Table** 2 across the region.

Table 2

Total Economic Impact of a Typical Veterinary Clinic Practice on an Appalachian County

Employment Impact	
Jobs from Veterinary Practice	6
Veterinary Sector Employment Multiplier	1.32
Secondary Employment Impact	2
Total Employment Impact	8
Wage Impact	
Wages from Veterinary Practice	258,264
Veterinary Sector Wage Multiplier	1.26
Secondary Wage Impact	67,149
Total Wage Impact	$325,413

The average employment multiplier for a rural veterinarian is 1.32 (**Table 2**). This indicates that for each job created by the veterinarian, .32 jobs are created throughout the county due to business and employee spending. Applying the average multiplier to the average

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veterinary clinic of six employees yields a secondary impact of two employees. The total estimated average employment of a veterinarian is six, the secondary average employment income estimate is two jobs, and the total average employment impact is estimated to be eight.

The average wage income multiplier for a rural veterinary practice is 1.26 (**Table 2**). This indicates that for each dollar created in that sector, an additional $.26 is created throughout the county due to business and employee spending. The veterinary clinic generates an average wage of $258,264. Applying the average wage multiplier of 1.26 to the average direct impact results in an estimated average secondary wage impact from the clinic of $67,149. The total average direct wages of the veterinary clinic is estimated to be $258,264 and the average total wage impact is estimated to be $325,413.