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5 A TALE OF TWO STATES

Victor R. Fuchs

In the western United States there are two contiguous states that enjoy about the same levels of income and medical care and are alike in many other respects, but their levels of health differ enormously. The inhabitants of Utah are among the healthiest individuals in the United States, while the residents of Nevada are at the opposite end of the spectrum. Comparing death rates of white residents in the two states, for example, we find that infant mortality is about 40 percent higher in Nevada. And lest the reader think that the higher rate in Nevada is attributable to the "sinful" atmosphere of Reno and Las Vegas, we should note that infant mortality in the rest of the state is almost exactly the same as it is in these two cities. Rather . . . infant death rates depend critically upon the physical and emotional condition of the mother.

The excess mortality in Nevada drops appreciably for children because, as shall be argued below, differences in life-style account for differences in death rates, and these do not fully emerge until the adult years. As [Table 5-1] indicates, the differential for adult men and women is in the range of 40 to 50 percent until old age, at which point the differential naturally decreases.

The two states are very much alike with respect to income, schooling, degree of urbanization, climate, and many other variables that are frequently thought to be the cause of variations in mortality. (In fact, average family income is actually higher in Nevada than in Utah.) The numbers of physicians and of hospital beds per capita are also similar in the two states.

What, then, explains these huge differences in death rates? The answer almost surely lies in the different life-styles of the residents of the two states. Utah is inhabited primarily by Mormons, whose influence is strong throughout the state.

Table 5-1. Excess of Death Rates in Nevada Compared with Utah, Average for 1959–61 and 1966–68

Age Group	Males	Females
<1	42%	35%
1–19	16%	26%
20–29	44%	42%
30–39	37%	42%
40–49	54%	69%
50–59	38%	28%
60–69	26%	17%
70–79	20%	6%

Devout Mormons do not use tobacco or alcohol and in general lead stable, quiet lives. Nevada, on the other hand, is a state with high rates of cigarette and alcohol consumption and very high indexes of marital and geographical instability. The contrast with Utah in these respects is extraordinary.

In 1970, 63 percent of Utah's residents 20 years of age and over had been born in the state; in Nevada the comparable figure was only 10 percent; for persons 35–64 the figures were 64 percent in Utah and 8 percent in Nevada. Not only were more than nine out of ten Nevadans of middle age born elsewhere, but more than 60 percent were not even born in the West.

The contrast in stability is also evident in the response to the 1970 census question about changes in residence. In Nevada only 36 percent of persons 5 years of age and over were then living in the same residence as they had been in 1965; in Utah the comparable figure was 54 percent.

The differences in marital status between the two states are also significant in view of the association between marital status and mortality discussed in the previous section. More than 20 percent of Nevada's males aged 35–64 are single, widowed, divorced, or not living with their spouses. Of those who are married with spouse present, more than one-third had been previously widowed or divorced. In Utah the comparable figures are only half as large.

The impact of alcohol and tobacco can be readily seen in [Table 5-2] the comparison of death rates from cirrhosis of the liver and malignant neoplasms of the respiratory system. For both sexes the excess of death rates from these causes in Nevada is very large.

Table 5-2. Excess of Death Rates in Nevada Compared with Utah for Cirrhosis of the Liver and Malignant Neoplasms of the Respiratory System, Average for 1966–68

Age	Males	Females
30–39	590%	443%
40–49	111%	296%
50–59	206%	205%
60–69	117%	227%

The populations of these two states are, to a considerable extent, self-selected extremes from the continuum of life-styles found in the United States. Nevadans, as has been shown, are predominantly recent immigrants from other areas, many of whom were attracted by the state's permissive mores. The inhabitants of Utah, on the other hand, are evidently willing to remain in a more restricted society. Persons born in Utah who do not find these restrictions acceptable tend to move out of the state.

SUMMARY

This dramatic illustration of large health differentials that are unrelated to income or availability of medical care helps to highlight the [following] themes . . .

1. From the middle of the eighteenth century to the middle of the twentieth century rising incomes resulted in unprecedented improvements in health in the United States and other developing countries.
2. During most of this period medical care (as distinct from public health measures) played an insignificant role in health, but, beginning in the mid-1930s, major therapeutic discoveries made significant contributions independently of the rise in real income.
3. As a result of the changing nature of health problems, rising income is no longer significantly associated with better health, except in the case of infant mortality (primarily post-neonatal mortality)—and even here the relationship is weaker than it used to be.

4. As a result of the wide diffusion of effective medical care, its marginal contribution to health is again small (over the observed range of variation). There is no reason to believe that the major health problems of the average American would be significantly alleviated by increases in the number of hospitals or physicians. This conclusion might be altered, however, as the result of new scientific discoveries. Alternatively, the *marginal* contribution of medical care might become even smaller as a result of such advances.
5. The greatest current potential for improving the health of the American people is to be found in what they do and don't do to and for themselves. Individual decisions about diet, exercise, and smoking are of critical importance, and collective decisions affecting pollution and other aspects of the environment are also relevant.

These conclusions notwithstanding, the demand for medical care is very great and growing rapidly. As René Dubos has acutely observed, "To ward off disease or recover health, men as a rule find it easier to depend on the healers than to attempt the more difficult task of living wisely."[1]

NOTE

1. René Dubos, *The Mirage of Health* (New York: Harper, 1959), p. 110.

6 *Population Health in Utah and Nevada: An Update on Victor Fuchs' Tale of Two States*

Victor G. Rodwin and Melanie J. Croce-Galis

In 1974, after examining age-specific mortality rates in Utah and Nevada, health economist Victor Fuchs noted that Utah's population was healthier than Nevada's even though these states had similar densities of physicians and hospital beds.[1] Since Utah and Nevada had similar levels of average family income, urbanization, and education, Fuchs concluded that access to medical care makes only a marginal contribution to population health. He suggested, therefore, that a policy of increasing the number of hospitals and/or physicians would be of little benefit to population health. In comparison to Nevada, Utah's residents are part of a more homogeneous, predominantly Mormon state with less migration, more family stability, and fewer risky health behaviors. Fuchs' "Tale of Two States" illustrates the powerful role of lifestyle and other social determinants of population health.[2]

Do Fuchs' findings hold up after three decades? Has Utah's health advantage been maintained? Since state-level data on risk factors for disease and measures of health status that go beyond mortality are more easily available today, we present 2000 data on these indicators to shed more light on the characteristics of both states.

What did we find? Sure enough, these two contiguous states continue to share some important characteristics (Table 1). They also differ in important ways with respect to risk factors for disease, age-specific mortality rates, and a range of other health-status indicators. Thirty years later, the population of Utah continues to live longer, on average, and appears, by all measures, to be in better health than Nevada's residents.

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CONVERGENT CHARACTERISTICS

Based on the latest data available—in 2000—Utah and Nevada still share similar levels of income—whether measured by household or family units. They share similar levels of poverty, urbanization, and education. Also, Utah and Nevada have similar levels of medical resources: Utah has a slightly higher physician density; Nevada has a slightly higher hospital bed density.[3] Finally, Utah and Nevada have similar levels of health care coverage. Nevada has a slightly higher level of coverage, perhaps because it has a higher percentage of its population over the age of 65 (10.5% versus 8.5%) that are covered by Medicare.

DIVERGENT CHARACTERISTICS

One of the most striking differences between Nevada and Utah concerns patterns of community stability (Table 2). In Utah, 63 percent of the population was born in the state in contrast to only 21 percent in Nevada. Utah's Hispanic and African-American population is under 10 percent whereas Nevada's comes to 26 percent. Utah's families are characterized by lower divorce rates and its residents drink far less alcohol and smoke far less tobacco than Nevada. In summary, The Behavioral Risk Factor Surveillance Survey (BRFSS) indicates that rates of binge drinking, chronic drinking, and cigarette consumption are about twice as high in Nevada than in Utah.

POPULATION HEALTH IN UTAH AND NEVADA

Although Nevada's infant mortality rates have increased proportionately more than Utah's over the past thirty years, they continue to lag significantly in comparison to Utah (6.5 versus 5.2[4]). Age-specific mortality rates in Nevada also exceed Utah's for every age cohort (Table 3). What is more, for those 50 years of age and over, there is an *even greater* excess of death rates in Nevada in 2000 than thirty years ago.

Mortality, by selected causes, is also higher in Nevada than in Utah (Table 4). For example, the higher mortality rates from malignant neoplasms of the respiratory system and from cirrhosis of the liver probably reflect the cumulative effects of different health behaviors, noted earlier (Table 2).

Beyond the comparison of mortality differentials, we found a range of other health status indicators that reveal, in more depth, some of the ways in which Utah's residents are healthier

Table 6-1. Utah and Nevada: Convergent Characteristics

	Utah	Nevada
Socioeconomic Characteristics		
Average household income	$45,726	$44,581
Average family income	$51,022	$50,849
% Families below poverty level	6.5%	7.5%
Individuals below poverty level	9.4%	10.5%
Level of urbanization	88%	92%
Education: high school diploma or higher	88%	81%
Medical Care Resources and Coverage		
Hospital Beds *(per 1,000 pop'n)*	2.2	3.1
Physicians *(per 10,000 pop'n)*	31	29
%Have some kind of health insurance coverage	86.4%	88.9%

Sources: 2000 U.S. Census; Utah Health Data Committee, Office of Health Care Statistics; Nevada Bureau of Licensure and Certification, Department of Human Resources; 2000 BRFSS Utah and Nevada.

Table 6-2. Utah and Nevada: Divergent Characteristics

	Utah	Nevada
Community Stability/Migration		
% of persons (age 5 +) that were living in same residence in 1995	49%	37%
% of residents born in state	63%	21%
Socio-Demographic Characteristics		
% African-American and Hispanic	9.7%	26.3%
% Non-Hispanic White	85%	65.2%
Family Stability		
Divorce rate	4.3 per 1,000	7.3 per 1,000
Married couple/family households	63.2%	49.7%
Risky health behaviors		
Alcohol use: binge drinking	10. 2%	22.6%
Tobacco use: Ever smoked 100 cigarettes and a current smoker?	12.9%	29.0%

Sources: 2000 U.S. Census; 1999 BRFSS, 2000 BRFSS, Nevada State Health Division: Center for Health Data and Research; Utah Department of Health: Center for Health Data; Utah Vital Statistics, Marriages and Divorces 1999 and 2000.

than Nevada's (Table 5). For example, differences in years of potential life lost (YPLL) before the age of 75 indicate that heart disease, homicides, and suicides exact far greater costs on residents of Nevada than on their counterparts in Utah. This is consistent with measures of self-assessed health status, which indicate that residents of Utah perceive themselves to be in better health than those of Nevada.

CONCLUDING OBSERVATIONS

Although Utah and Nevada share a host of convergent characteristics, Utah's distinctive features—community and family stability, population homogeneity, and fewer risky health behaviors—highlight the social factors that appear to make its residents healthier. All of these factors are influenced by the dominant Mormon

Table 6-3. Excess Mortality Rates in Nevada Compared with Utah: 1960s and 2000

Average for 1959–61 and 1966–68			2000	
Age Group	*Males*	*Females*	*Age Group*	*Males and Females*
<1	42%	35%		
1–19	16%	26%	<24	31%
20–29	44%	42%	25–34	45%
30–39	37%	42%	35–44	43%
40–49	54%	69%	45–54	65%
50–59	38%	28%	55–64	53%
60–69	26%	17%	65–74	45%
70–79	20%	6%	75–84	13%

Sources:
1960s: Fuchs in Conrad, Table 5.1, p. 50, 1974.
2000: Utah and Nevada Vital Statistics: Births and Deaths; 2000 U.S. Census.

Table 6-4. Excess of Death Rates in Nevada Compared with Utah for Cirrhosis of the Liver and Malignant Neoplasm of the Respiratory System: 1960s and 2000

Cirrhosis of the Liver and Malignant Neoplasms of the Respiratory System Average for 1966–68			Cirrhosis of the Liver 2000			Malignant Neoplasms of the Respiratory System 2000		
Age	*Males*	*Females*	*Utah Rate*	*Nevada Rate*	*Excess*	*Utah Rate*	*Nevada Rate*	*Excess*
30–39	590%	443%	6	14	133%	18	57	217%
40–49	111%	296%						
50–59	206%	205%	Rate is per 100,000 population					
60–69	117%	227%						

Sources:
1960s: Fuchs in Conrad, Table 5.2, p. 50, 1974.
2000: Utah and Nevada Vital Statistics: Births and Deaths; 2000 U.S. Census.

Table 6-5. Utah and Nevada: Health Status Indicators

	Utah	Nevada
Motor Vehicle-Related Deaths *(per 100,000 population)*	17.7	18.9
Years of Potential Life Lost (YPLL) Before Age 75	6503	8970
YPLL<75 by Cause:		
Homicides	98	397
Suicides	494	660
Heart disease	759	1581
Self-Assessed Health Status As Very Good or Excellent	61.6%	55.7%
Self-Assessed Health Status As Poor	2.4%	5.0%
Average Number of Days with Limited Activity (per 30 Days)	2.8	3.3

Sources: 1999 National Vital Statistics System, National Center for Health Statistics, Age-Adjusted YPLL<75 years per 100,000 population; 2000 BRFSS Survey (http://health2k.state.nv.us/nihds/brfss/Brfss%202000/General%20Health/genhlth.htm); Kaiser Family Foundation State Health Facts Online: United Health Foundation analysis of 2001 BRFSS.

culture in Utah and probably account for the confluence of many behavioral choices that lower Utah's mortality rates across a wide range of health risks and raise its population's health status.

Do residents of Utah have a better quality of life? Do they derive more happiness from life? We still do not have the kinds of indicators and data we might like to answer such questions. But thirty years later, Fuchs' citation from René Dubos continues to ring true: "To ward off disease or recover health, men as a rule find it easier to depend on the healers than to attempt the more difficult task of living wisely."[5]

NOTES

1. Fuchs in P. Conrad (Ed.) *The Sociology of Health and Illness* (6th ed.) (pp. 50). New York, NY: Worth Publishers, 2001. Fuchs' tale was originally published as a chapter in his book, *Who Shall Live? Health Economics and Social Change.* New York, Basic Books, 1974.
2. Evans, R.G. (1994). Why Are Some People Healthy and Others Not? NY: Aldine de Gruyter.
3. Utah/Nevada Department of Licensure, personal communication April 23, 2003. Part of the difference in divorce rate figures may be due to the fact that Nevada grants divorces to Nevada residents who have resided in the state for at least six weeks, whereas in Utah residents must have resided in the county where the divorce is filed for at least three months prior to filing; in addition, residents of Utah have a mandatory ninety-day waiting period after the filing before the divorce is granted.
4. Utah/Nevada Vital Statistics, 2000.
5. Fuchs in Conrad, 2001, p. 51.

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