
Underwriting Co-Morbidities and the Vices: *Art or Science?*

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Vices Affecting LTC Insurance

- **Current Smoker:** Daily use of cigarettes, cigars or pipe tobacco
 - One cigarette a day,
 - One cigar a day or
 - One bowl of pipe tobacco a day
 - **Alcohol**
 - **Eating Disorders**
 - Obesity
 - Anorexia
 - Bulimia
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Costs Impacted

- Hospital
 - Assisted Living
 - Nursing Home
 - Additional Services: Speech, OT, PT
 - Home Care Services
 - Durable Medical Equipment
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Smoking and Mortality

- Leading cause of preventable death in U.S.
- Produces substantial health related economic costs to society
- Adult male & female smokers lost average of 13.2 & 14.5 years of life
- 1998: smoking attributable health care medical expenditures of \$75.5 billion (\$1,623 per smoker)
- Caused 8% of the total medical expenses

Smoking Co-morbid Risks

- Cardiovascular disease: HTN, Ischemic heart disease, atherosclerosis
 - Cerebrovascular disease
 - Respiratory: COPD, emphysema, bronchitis, pneumonia
 - Neoplasms: lung, esophagus, oral, bladder, kidney
 - Diabetes complications
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New Illnesses Affected

- Cataracts: 2-3 times risk of non-smokers
- Pneumonia
- Acute myeloid leukemia
- Abdominal aortic aneurysm
- Peptic Ulcers
- Stomach cancer
- Pancreatic cancer
- Cervical cancer
- Kidney cancer
- Periodontitis

Smoking Contributing Factors

- Reduces bone density among postmenopausal women
- Hip fractures
- Complications from diabetes
- Increased wound infections following surgery
- Reproductive complications

Smoking Cessation

- Stop smoking before age 50 years & live longer
 - Former smokers have same stroke risk as non-smokers after 5-15 years
 - Previously diagnosed myocardial infarction or stroke, smoking cessation reduces risk for recurrent heart attack & death from stroke by 50%
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Cardiovascular Disease

- 61+ million Americans
 - Coronary Heart Disease: HTN, CHF, atherosclerosis
 - Leading causes of death & major causes of disability
 - Expected to increase sharply as this country's "baby boom" generation ages.
 - Deaths are projected to increase sharply between 2010 and 2030
 - Survivors expected to grow much faster rate than the U.S. population as a whole.
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Cerebral Vascular Disease

- Smokers have a 70% greater level of CVD risk than nonsmokers
 - Smoke > 2 packs of cigarettes per day have a two- to threefold greater risk for CVD
 - Risk increases with greater depth of inhalation & years of smoking
 - Stroke is the major result of CVD
 - Cognitive impairment & dementia may occur in 30% of stroke survivors, & people without a clear history of stroke.
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Survivors in 2000

- 450,000 people had survived a first heart attack for more than 1 year.
 - 450,000 people had survived with heart failure for more than 1 year.
 - 375,000 people had survived a first stroke for more than 1 year.
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Prevalence in 2000

- 12.9 million people were living with coronary heart disease.
 - 4.9 million people were living with heart failure.
 - 4.7 million people were living with stroke
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Respiratory Disease

- COPD top 10 chronic health conditions
 - 16 million persons with COPD in 1994, 60% more than 1982
 - Current smoking and age account for >85% of risk for COPD
 - Smokers have higher COPD mortality & higher incidence respiratory symptoms
 - COPD begins to develop at 40-50 years, but physician intervention starts at 50-60's
 - Chronic bronchitis & emphysema develops
 - Asthma due to constricted airways
 - Smoking accelerates disease onset
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Neoplasms and Smoking

- Risk increases with number of cigarettes smoked and number of years
- Risk decreases after quitting
- Lung
 - Men 23 times more likely to develop
 - Women 13 times more likely to develop
- Oral cavity
- Larynx
- Bladder
- Esophagus: 12,300 new cases annually

Underwriting Considerations

- Exclude all diabetic smokers
 - Exclude diabetics with history of stroke or TIA
 - Exclude all smokers with cardiac disease
 - Adjustment Period: full 48 months of no smoking, increased from 24 months
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Eating Disorder Co-morbid Risks

- Obesity
 - Diabetes
 - Anorexia
 - Malnutrition
 - Electrolyte Imbalance
 - Bulimia
 - Malnutrition
 - Electrolyte Imbalance
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Stated versus Measured Weight

- Applications: Stated weight
- APS and F2F assessments: Measured weight
- Comparison
 - Normal weight: misstate weight +/- 8.5 lbs.
 - Extremes of weight
 - High end: Understate weight 35 lbs. on average
 - Low end: Overstate weight by 18 lbs. on average

Old News: The APS is Essential to Risk Management

Is Obesity an LTCI Burden?

Facts

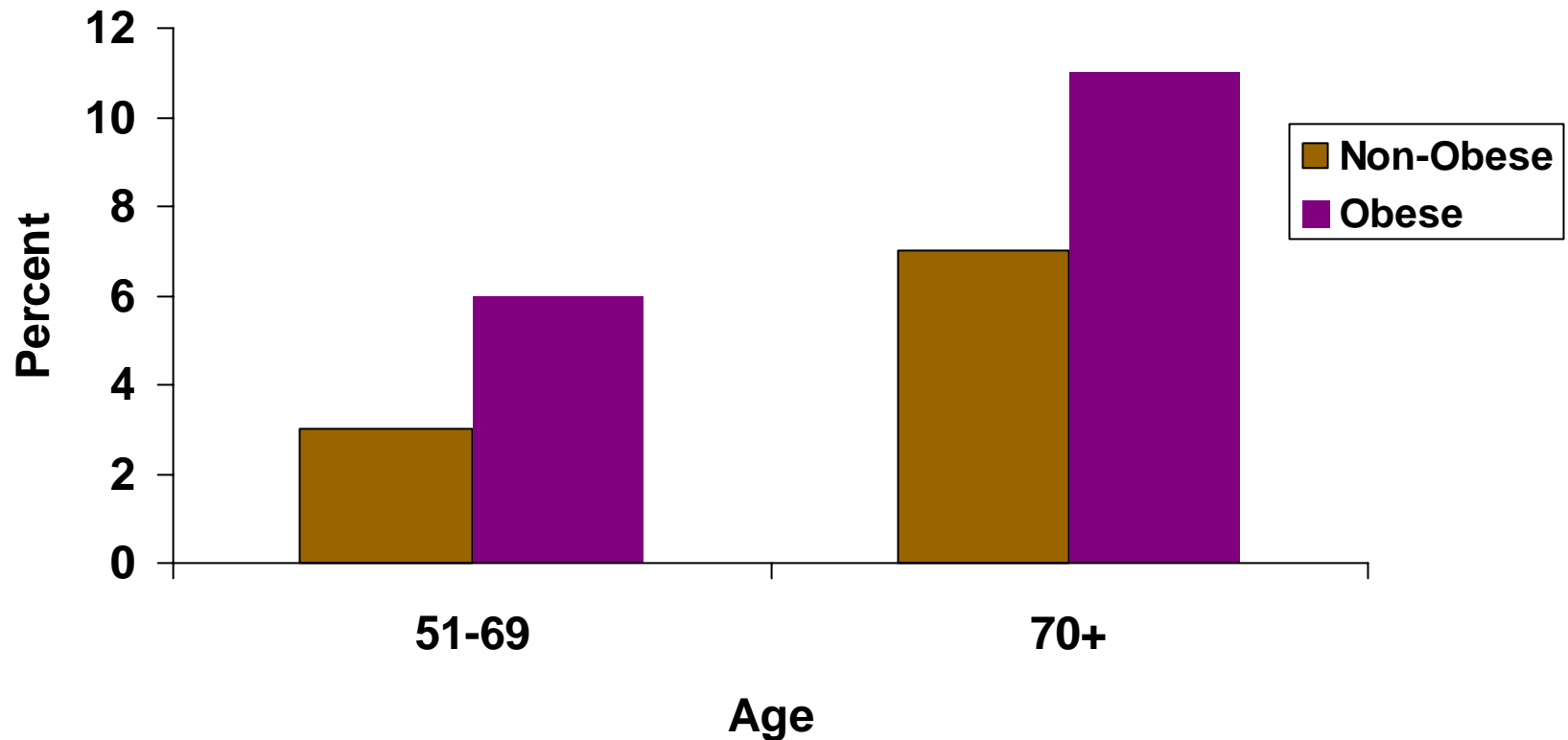
- 61% US adults overweight or obese
- Less than 1/3 adults engage in recommended physical activity
- 40% US adults do not participate in any leisure time physical activity
- Economic cost of obesity in US estimated at \$117B₍₂₀₀₀₎
 - Approximately 8% healthcare budget
 - 365,000 deaths/year in US associated with obesity
 - 15.2% of all deaths

Is Obesity an LTCI Burden?

- Health Consequences
 - Hypertension
 - Type 2 Diabetes/Metabolic Syndrome
 - Coronary Artery Disease
 - Stroke
 - Osteoarthritis
 - Sleep Apnea
 - Cancer
 - Depression
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Is Obesity an LTCI Burden?

Proportion of Adults 51+ Having Difficulty with 3 or More ADLs



Is Obesity an LTCI Burden?

Relative Risk of Developing Diabetes

BMI	Women (Nurses Health Study)	Men (Health Prof. Study)
18.5-21.9	1.0	1.0
22.0-24.9	2.2	1.8
25.0-29.9	8.1	5.6
30.0-34.9	17.9	18.2
≥ 35	30.1	41.2

Alcohol

- The term alcohol, ethanol, ethyl alcohol is the name for the widely abused recreational drug found in beer, wine and hard liquor.
 - Alcohol is a psychoactive drug.
 - CNS depressant, which will diminish environmental awareness, reduce response to sensory stimulation, depress cognitive functioning, decrease spontaneity, and reduce physical activity
 - Causes a graded response, increase doses produce increasing drowsiness, lethargy, amnesia, antiepileptic effects, hypnosis, and anesthesia.
 - Is a sedative, tranquilizer, anxiolytic, or hypnotic just like any other CNS depressant
 - Effects of any CNS depressant potentiate the effects of any other CNS depressant
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Alcohol

- Like all CNS depressants risk of inducing physiological dependence, psychological dependence and tolerance
 - Physiological-occurrence of withdrawal signs and symptoms when the drug is not taken
 - Psychological-follows from the positive reinforcement effects of the drug
 - Tolerance-result of the induction of drug metabolizing enzymes in the liver and to the adaptation of the brain
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Alcohol-related morbidity

- Alcohol use is related to a wide variety of negative health outcomes including morbidity, mortality, and disability.
 - Research on alcohol-related morbidity takes into account the varying effects of overall consumption and drinking patterns
 - Results indicate alcohol use increases the risk for many chronic health consequences
 - 113 million Americans classified as current drinkers
 - 10.6 million can be classified as alcoholics
 - 7.3 million either alcohol abusers or have experienced negative consequences of alcohol use
 - 23.8% of men and 4.7% of women meet DSM-IV criteria for dependence.
 - Alcohol-related social, legal and health problems result in annual economic costs to society totaling more than \$166 billion
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Medical Consequences

- Alcohol is known to exert harmful effects on a number of the body's organ systems
 - All major organ systems can be affected, but the primary organ systems involved include the nervous system, cardiovascular system, liver, GI system and pancreas
 - Many individuals with alcohol problems may be without evidence of any chronic medical manifestations for many years
 - Evidence of increased postoperative morbidity after surgical procedures
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Alcohol and Gender

- Women are more vulnerable than men to many of the medical consequences of alcohol use.
 - Cirrhosis, alcohol induced damage of the heart muscle (cardiomyopathy), nerve damage(peripheral neuropathy) after fewer years of heavy drinking than do men
 - Men and women had similar brain shrinkage, learning and memory problems although women reported drinking for only about half as long as the men in the studies
 - Studies comparing men and women's sensitivity to alcohol-induced brain damage have not been conclusive
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Alcohol's Effects on the Brain

- Difficulty walking, blurred vision, slurred speech, slowed reaction times, impaired memory
 - Heavy drinking-ranges from simple “slips” in memory to permanent and debilitating conditions that require lifetime custodial care-established risk factor for dementia
 - Custodial care may be necessary for the 25% of persons who have permanent brain damage and significant loss of cognitive skills
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Alcohol's Effects on the Liver

- Liver is a vital organ involved in processing fats, sugars, proteins, and vitamins and in regulating blood clotting
 - Plays a central role in the body's defenses, filtering toxins from the blood
 - Long- term heavy alcohol use is the leading cause of illness from liver disease in the US
 - 3 common forms: fatty liver, usually reversible with abstinence; alcoholic hepatitis, persistent liver inflammation; and cirrhosis, progressive scarring of liver tissue
 - Number of persons with liver disease is conservatively estimated at more than 2 million
 - Can have more than one type of liver disease
 - Persons with both cirrhosis and alcoholic hepatitis have a death rate of more than 60 % over a 4 year-year period with a lingering loss of functional capacity
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Alcohol's Effects on the Immune System

- Increased illness from infectious diseases
 - Increased susceptibility to bacterial pneumonia, pulmonary TB and hepatitis C
 - Hepatitis C is the leading cause of liver transplants in the US
 - Increase in Hepatitis C may reflect impaired immune function(immunodeficiency)caused by high consumption of alcohol
 - Researchers are investigating whether alcohol consumption itself may increase susceptibility to HIV infection or hasten the progression from HIV infection to full blown AIDS.
 - Some alcohol-related organ damage may result in part from immune system overactivity in which the immune system attacks the body's own tissues)autoimmunity
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Alcohol's Effects on the Cardiovascular System

- Chronic drinking is a leading cause of cardiovascular illnesses such as degenerative disease of heart muscle (cardiomyopathy); disorders associated with decreased blood supply to the heart muscle (coronary heart disease); high blood pressure; heart rhythm disorders (arrhythmias); and stroke
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Alcohol and Cardiomyopathy

- Long-term drinking can cause the heart to become enlarged and lose some of its ability to contract
 - SOB and insufficient blood flow to rest of body
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Alcohol and Blood Pressure

- An association between heavy alcohol consumption and increased blood pressure has been observed in more than 60 studies in diverse cultures and populations
 - The effects of moderate alcohol consumption on blood pressure are unclear
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Alcohol and Arrhythmias

- The heart's ability to function effectively depends on regular, synchronous contraction of heart muscle
 - Heavy drinking disrupts the rhythm acutely and chronically
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Alcohol and Stroke

- Heavy consumption may increase the risk of both ischemic and hemorrhagic strokes(bleeding within the brain)



Alcohol and Bone

- Studies have found a significant association between alcohol consumption and risk for bone fracture
 - Increase in accidental injury thru gait and balance impairment
 - Generalized decrease in bone mass making bones more fragile
 - Lead to osteoporosis
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Alcohol and Breast Cancer

- More than 200,000 women developed breast cancer in 2005
 - 50 epidemiologic studies conducted point to an increase in breast cancer associated with alcohol consumption
 - Scientists have identified plausible biological mechanisms for alcohol's actions in pre-menopausal and postmenopausal women
 - Cumulative lifetime exposure to estrogen is considered an important contributor to breast cancer risk
 - Studies have examined whether alcohol raises estrogen levels
 - Although some studies report such an effect, the evidence is not conclusive
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Alcohol and other Cancers

- Evidence supports that alcohol is a carcinogen and works synergistically with tobacco to produce tumors in the upper digestive tract-oral cavity, pharynx, larynx, trachea and esophagus
 - Alcohol intake also decreases the immune system's ability to detect and destroy cancer cells
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Alcohol and Mood

- Alcohol use is associated with worse outcomes with respect to depression and bipolar disease
 - Associated with the misuse of prescription drugs
 - Interactions between alcohol and medications
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Other “Red Flags”

- Include any of the other medical conditions mentioned earlier, including especially otherwise unaccounted for tremor, gastritis or hepatitis and a combination of an elevated MCV and SGGT and other elevated liver enzymes
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Conclusion

- Co-morbidity is defined as two or more medical conditions that occur at the same time.
 - When considering underwriting co-morbidities and vices, should one be underwritten while ignoring the other, or should both be considered
 - What if one is low risk now, but the vice continues, should they be underwritten together
 - We need to consider that the Co-morbidities may be induced by the vices and these vices are factors that can be predictive of a claim
 - The reality of Co-morbidities is that the conditions are equally important, equally at risk and in many cases induced by the vices
 - Underwriting Co-morbidities and the vices must be approached scientifically
 - Improving the scientific accuracy of underwriting is good business practice
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Art or Science?

Questions?