Party On, Party Over . . . Alcohol Use from Underwriting through Claim

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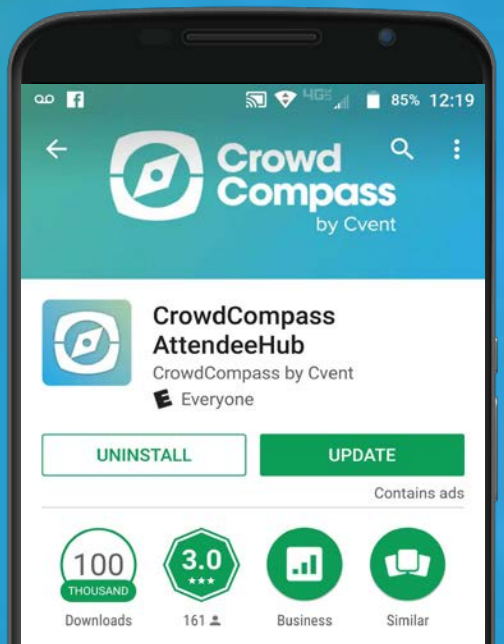

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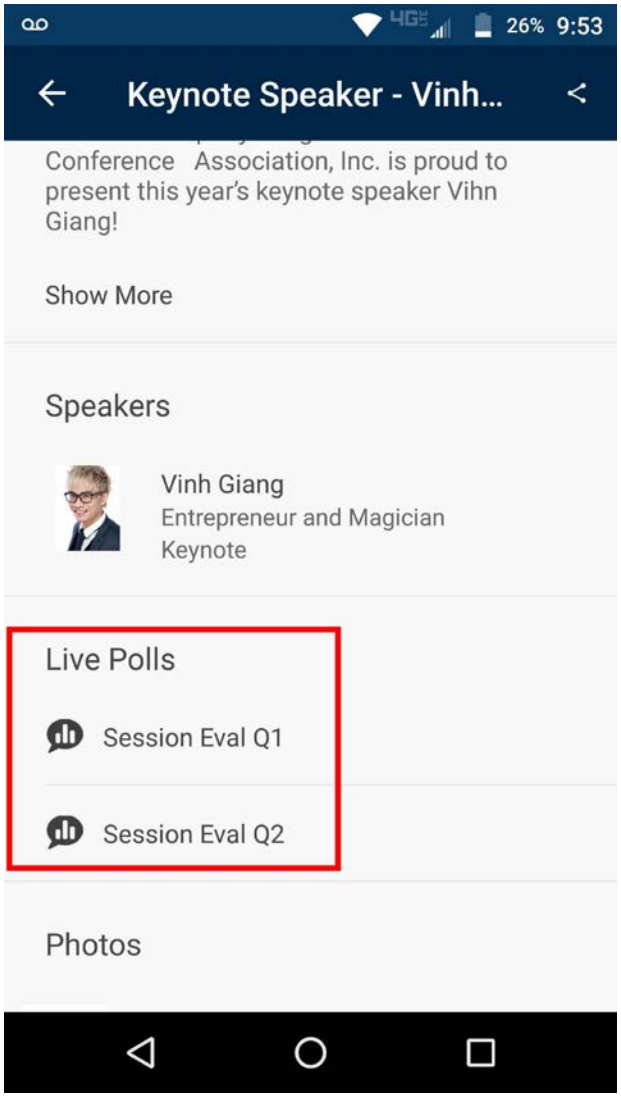

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Alcohol's Impact on Society

- More than 85,000 deaths a year in the United States (US) are directly attributed to alcohol use
- The annual economic cost of alcohol use in the U.S. is estimated to be over $250 billion
- Roughly 1 in 10 deaths among working age adults results from excessive drinking
- An estimated 4 to 40% of medical and surgical patients experience problems related to alcohol while in the hospital

Increased Health Risks

The U.S. National Institute on Alcohol Abuse and Alcoholism (NIAAA) has estimated consumption amounts of alcohol that increase health risks:

- Men under age 65 years
  - More than 14 standard drinks per week on average
  - More than 4 drinks on any day
- Women under 65 years and adults older than 65 years
  - More than 7 standard drinks per week on average
  - More than 3 drinks on any day

Amounts are based on a “standard drink,” which is defined as 12 grams of ethanol, 5 ounces of wine, 12 ounces of beer, or 1.5 ounces of 80 proof spirits.

Alcohol Use by Older Individuals

- Upwards of 55% of those over the age of 65 years imbibe on a yearly basis (a 22% increase over the past two years)
- The proportion of older adults engaged in “high-risk drinking” jumped 65% to 3.8 percent (males: 5 drinks a day; females: 4 drinks a day)
- Alcohol use disorder has doubled to 3% of those over 65 years
- This increased use is complicated by underlying medical conditions, multiple medications, etc.

Definitions

- Low Risk Drinking
- Heavy Alcohol Use
- Alcohol Abuse or Alcohol Abuse Disorder
- Binge Drinking

Binge Drinking

Binge Drinking is defined by the NIAAA as "drinking so much within about two hours that blood alcohol concentration (BAC) levels reach 0.08g/dL"

- In women, this typically occurs after about four standard drinks, and
- In men, after about five standard drinks.

Binge drinking is associated with acute injuries due to intoxication and may be associated with an increased cardiovascular risk.

So What is Too Much Alcohol?

- "At risk" U.S. Nat. Inst. On Alcohol and Alcoholism
  - Males under 65: more than 14 standard drinks/week
  - Females under 65: more than 7 standard drinks/week
- One definition of "moderate" drinking from a study done in Bordeaux, France
  - 3 to 4 standard glasses of wine/day
  - Letenneur found that moderate drinking significantly decreased odds of developing dementia and Alzheimer's
- Chronic Heavy alcohol use:
  - Cote found that 4-5 standard drinks/day for over 5 years was level that predisposed to alcoholic pancreatitis

Alcohol Use Disorder Definition

Alcohol use disorder (DSM-5):

- A problematic pattern of alcohol use leading to clinically significant impairment or distress, as manifested by multiple psychosocial, behavioral, or physiologic features

Epidemiology

2011 US National Survey on Drug Use and Health estimated that of Americans over the age of 12 in the past 30 days

- 52.7% used alcohol at least once
- 23% reported binge drinking (defined by the survey as five or more drinks on one occasion)
- 6.2% reported heavy drinking (defined as five or more drinks on each of five or more days)

Unhealthy and Risky Use

Nearly three in ten adults in the United States use alcohol in an unhealthy manner and therefore require some form of intervention as part of their healthcare. A 2005 survey showed

- 28 percent exceed NIAAA thresholds for risky use
  - 16 percent exceeding just the daily limit
  - 10 percent exceeding both the daily and weekly limits
  - 2 percent exceeding just the weekly limit
- 72 percent never exceed NIAAA thresholds for risky use

Data from the third National Epidemiologic Survey on Alcohol and Related Conditions showed that 14% of adults met criteria for a current alcohol use disorder and 29% had met criteria for an alcohol use disorder in their lifetime

Risk Factors

Higher rates of alcohol use disorders seen among:

- Younger adults – 16.2% among 18 to 29 year olds, 9.7% among 30 to 44 year olds
- Males – 12.4% among men, 4.9% among women
- Native Americans – Lower rates have been seen among black, Asian or Hispanic individuals
- Those with significant disability, other substance use disorders, or a mood disorder
- Those with genetic risk factors

“Typical” Course of Alcohol Dependence

- Schuckit studied 636 hospitalized men, mean age 45
  - By late twenties: 96% drank before noon
  - By early thirties:
    - withdrawal symptoms 91%
    - morning shakes 76%
  - By age 34: report of losing control 86%
  - By late thirties
    - divorced 61%
    - lost job: 43%
  - By early forties
    - withdrawal convulsion: 5%
    - hepatitis./pancreatitis: 26%
    - **MD documented health problems due to alcohol: 37%**

Schuckit, *Am J Psych, 1993*

Pathogenesis

Alcoholism is likely the result of a complex interplay of:

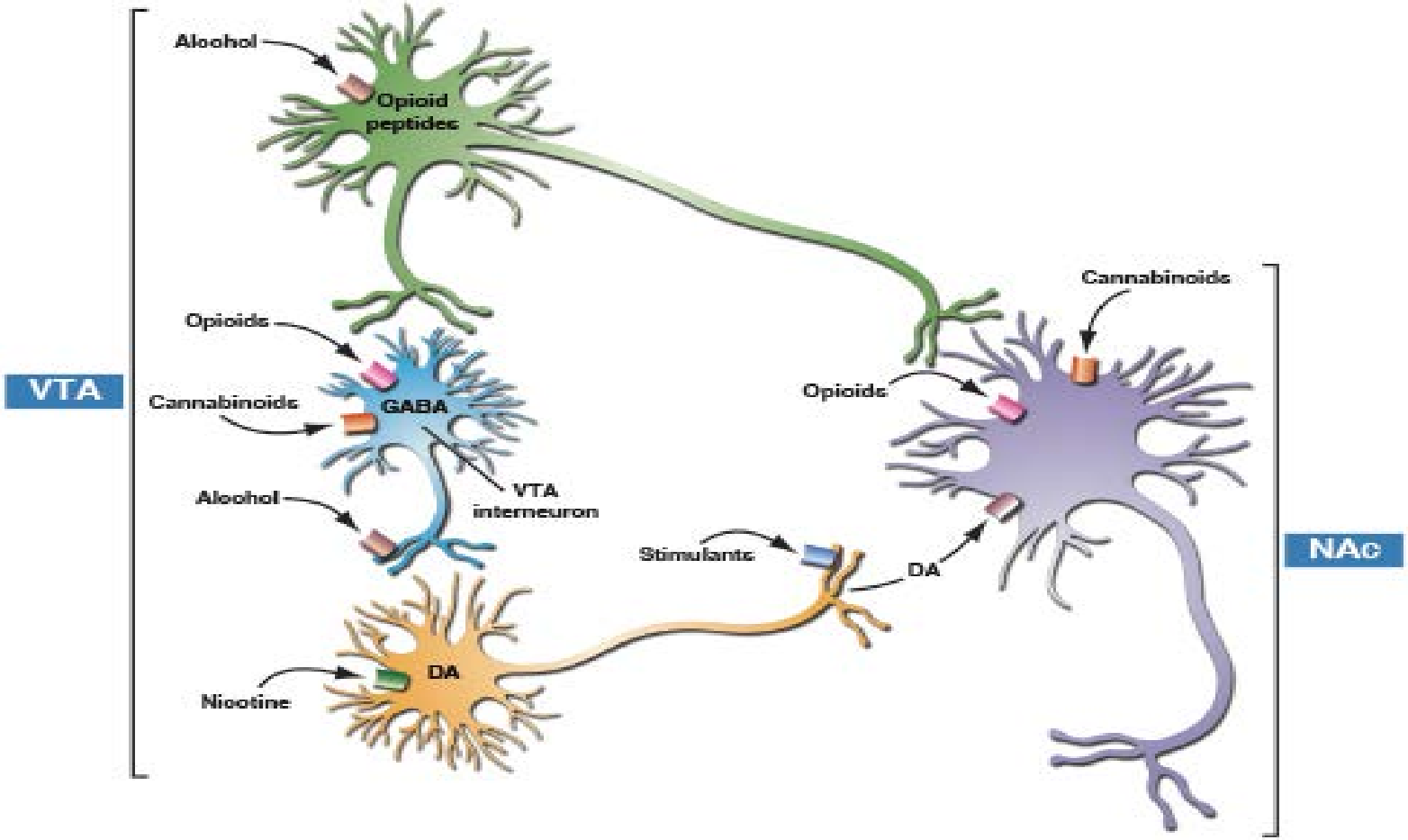
- Genetics
- Environmental influences
- Specific personality traits
- Cognitive functioning

Pathogenesis

Several theories have emerged to explain why some drinkers go on to develop an alcohol use disorder.

- Positive-affect regulation
- Negative-affect regulation
- Pharmacological vulnerability
- Deviance proneness

Actions of Addictive Substances on the Brain



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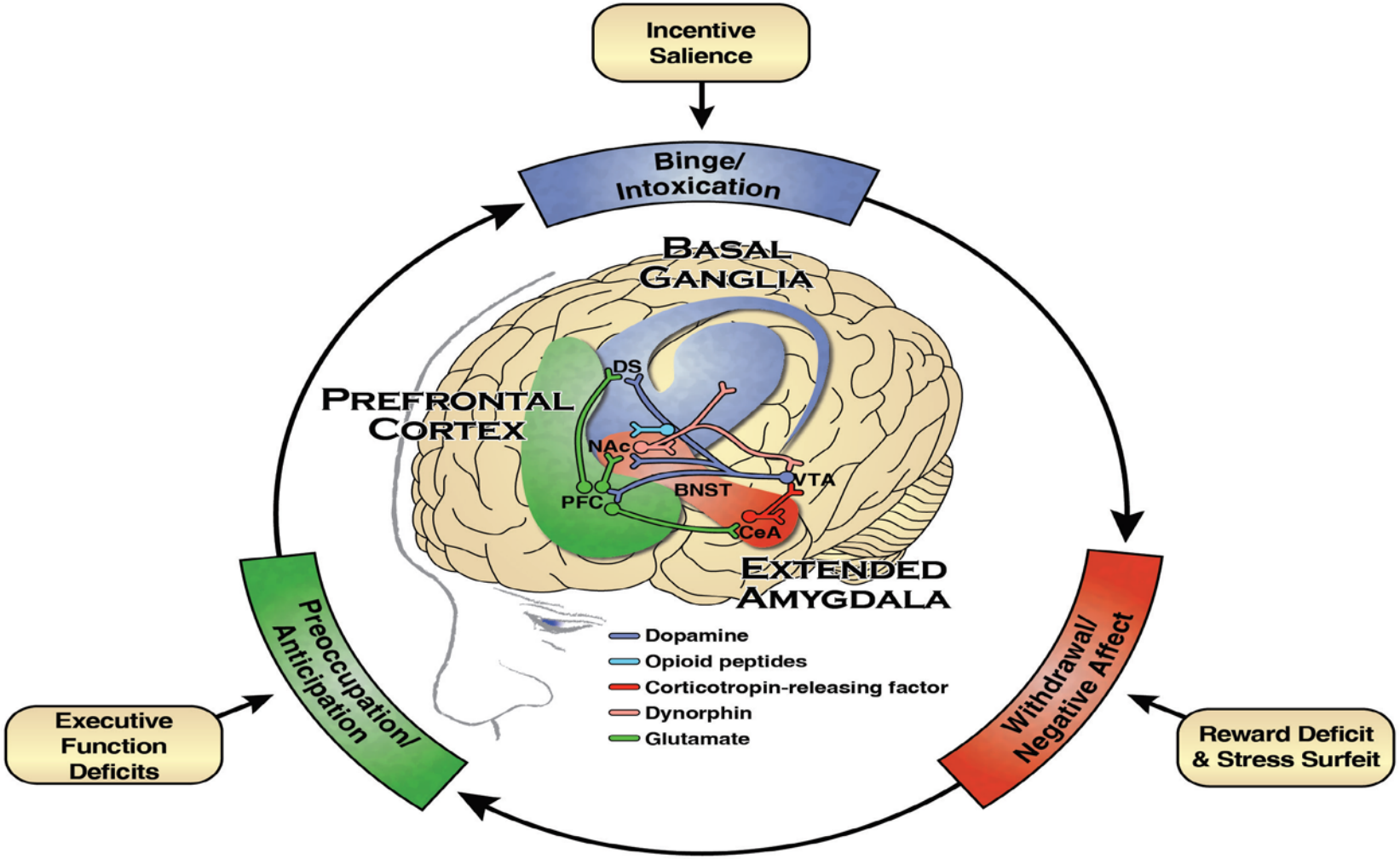
Three Stages of the Addiction Cycle



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Genetics

Genetic factors are responsible for approximately 50% percent of the vulnerabilities related to alcohol use disorder

Genetic influences produce alcohol-related phenotypes that, in combination with environmental factors, result in increased risk for alcohol-related problems

- A low level of response to alcohol
- Personality characteristics, such as impulsivity and behavioral disinhibition
- Alcohol-related psychiatric symptoms

Course of Alcohol Use Disorder

The severity of alcohol use patterns does not appear to be strongly correlated with the natural history of the disease.

Of drinkers initially meeting criteria for DSM alcohol abuse:

- 46 percent were in remission
- 24 percent continued to meet abuse criteria
- 30 percent went on to meet criteria for alcohol dependence

Of drinkers initially meeting criteria for DSM alcohol dependence:

- 39 percent were in remission
- 15 percent met criteria for abuse only
- 46 percent continued to meet dependence criteria

Lab Abnormalities

- **Liver enzymes** – Aspartate aminotransferase (AST), alanine aminotransferase (ALT), bilirubin, and albumin to test for liver damage.
- **Hemoglobin, complete blood count** – Anemia, pancytopenia, and macrocytosis. .
- **Gamma-glutamyltransferase (GGT)** – An indicator of excessive alcohol use when elevated (normal reference ranges: 8 to 40 units/L for females and 9 to 50 units/L for males).
- **Carbohydrate deficient transferrin (CDT)** – A CDT level above 0.12 suggest chronic excessive alcohol use.
- **Phosphatidal ethanol (PEth)** – PEth is specific for ethanol use and currently mostly in research protocols.

Clinical Manifestations

- Electrolyte disturbances
- Hepatitis manifest by increased liver enzymes including:
  - elevated gamma-glutamyl transpeptidase (GGT)
  - aspartate transaminase (AST)
  - alanine transaminase (ALT)
- Gastrointestinal symptoms
  - reflux esophagitis
  - gastritis and peptic ulcer disease
  - acute and chronic pancreatitis

Other Morbidity Associated with Alcohol

- Hypertension
- Cardiac disorders
  - cardiomyopathy
  - palpitations, atrial fibrillation
- Bone marrow suppression
  - macrocytic anemia
  - thrombocytopenia
  - suppressed immune system with chronic infections
- Avascular necrosis of hip
- Malignancies
  - mouth, esophagus, throat, liver and breast

But Wait, There's More

- Neurologic disorders
  - peripheral neuropathy
  - convulsions
  - delirium (withdrawal), cognitive impairment (Alcohol-induced Persisting Amnestic Syndrome) and dementia (Wernicke-Korsakoff) Amnestic Disorder
  - black outs
- Psychiatric disorders
  - anxiety and /or depressive disorders
  - posttraumatic stress disorder
  - eating disorders
  - other substance use disorders
  - sleep disorders

Behavioral Morbidity

- Trauma due to accidents
- Social and legal problems
  - DWI
  - assaults
  - loss of job
- Non-compliance with medical care, e.g.,
  - poor diabetic control
  - non-compliance with bipolar medications

Cognitive Impairment

- 10% of “alcohol dependent” individuals (severe Alcohol Use Disorder) have severe cognitive impairment.
  - dementia
  - alcohol-related persisting amnestic disorder
- Diminished Reserves
  - Post-detoxified alcohol admissions had similar neuropsychiatric results as those admitted with brain injury.
  - Chronic alcohol abuse associated with generalized cerebral atrophy and white matter degeneration
  - Cerebral blood flow reduced
    - involves frontal and parietal lobes
    - functional studies show more areas recruited in heavy alcohol users than in non-alcohol individuals to perform the same task

Rourke, Neuropsychological Assessment, 2009

Treatment of Alcohol Addiction

Three medications have been approved by the FDA for treating alcohol addiction

- **Disulfiram (Antabuse®)** interferes with the breakdown of alcohol. Acetaldehyde builds up in the body, leading to unpleasant reactions that include flushing (warmth and redness in the face), nausea, and irregular heartbeat if the patient drinks alcohol.
- **Acamprosate (Campral®)** may reduce symptoms of long-lasting withdrawal, such as insomnia, anxiety, restlessness, and dysphoria (generally feeling unwell or unhappy).
- **Naltrexone** blocks opioid receptors that are involved in the rewarding effects of drinking and in the craving for alcohol.
- **Extended-release injectable Naltrexone** effects last 30 days

Underwriting – The Challenges

Alcohol Use

- Self report - “The alcohol effect” – minimizing use
- Inconsistent inquiry by physicians
  - Standardized ETOH questionnaires exist
  - Rarely used on a regular basis
- Lack of standard dosage and potency
  - Big gulp versus a shot glass
  - A few beers versus a six pack
  - Coors Light (4.2% alcohol) versus Bacardi 151 (75.5% alcohol)
- Biomarkers for alcohol misuse occur late in the disease process
- Social markers of alcohol misuse rarely used in LTC underwriting

Underwriting Standards

Set a weekly use Standard

- Acknowledge under reporting in all forms of RMI
- Pay attention to the type of alcohol consumed
- Look for admonishments to stop or slow down in the APS

Complications of excessive ETOH

- Lab abnormalities – liver inflammation, anemia
- Hepatomegaly, GI bleeds, splenomegaly, portal hypertension
- Evidence of DUIs or frequent falls, accidents, job loss, etc.

Look for evidence of past alcohol treatment

- Current ETOH in the setting of past treatment is unacceptable
- Current treatment of alcoholism is generally unacceptable

Look for Functional Disorders

- Formerly: “Alcohol Abuse” =>“Alcohol Dependence”
- Now the “Alcohol Use Disorder” from mild (2-3 criteria) to moderate (4-5) to severe (6 or greater)
  - Failure to fulfill obligations
  - Use in hazardous situations
  - Continue use despite social and interpersonal problems
  - Unsuccessful attempts to stop or reduce
  - Significant time obtaining, using, or recovering from use
  - Important activities given up or reduced due to use
  - Use despite knowledge of physical and mental problems
  - Craving
  - **Evidence of tolerance**
  - **Withdrawal symptoms**
  - **Compulsive drinking more than intended**

Approach

- Admitted or documented use is taken with a “grain of salt”
  - Some one who drinks “2 beers a day” is likely drinking more than that
  - Look for binge frequency potential
    - e.g. “two beers a day with maybe four on the weekends”
    - binges should be < weekly to be considered moderate
- Positive biomarkers are supportive of heavy chronic use
  - CDT used in insurance for suspect heavy use
  - Positive CDT correlates to 5-6 drinks per day for at least 2 weeks
  - Remains positive for 2-4 weeks after cessation

Sensitivity Increased When Functional Considerations Added to Medical Markers

- Biomarkers: 2 or more suggests increased alcohol use
  - AST > 100
  - AST/ALT ratio > 2.0
  - GGT > 100
  - HDL elevation > 80 males and > 90 females
  - MCV > 100
- Increased Risk when combined with functional signs
  - DWI recent or multiple
  - Medical documentation from “You might want to cut back” to “You need to discontinue”
  - Use of alcohol associated with accident or trauma
  - Use of alcohol associated with active symptoms of anxiety and or depression
  - Any suicidal ideation

Other Considerations

- Heavy use: suspected when level of consumption nears 28 + / week (males), 21 + / week (females), or binge drinking weekly especially with:
  - Positive lab biomarkers
  - Complications like episode of atrial fibrillation, gastritis, and peptic ulcer disease suggest moderately heavy use
  - Behavioral considerations suggest regular heavy use
- Mild to moderate use $\leq$ 21/ week (males), $\leq$ 14 / week (females)
  - low level daily use but regular binge drinking of weekly + is an increased risk similar to heavy daily use
  - especially a risk with younger individuals 30 and younger

Sobriety After Treatment

- Treatments
  - Detox centers
  - Medical: disulfiram, acamprosate, naltrexone
  - Behavioral: AAA, Church support groups, etc.
- Relapse rate National Institue Alcohol Abuse and Alcoholism: 90% at 4 years
- Questions
  - Can someone with a history of Alcohol Use Disorder safely drink modest amounts of alcohol?
  - Can a sober individual on Rx be considered?
  - How long is “long enough” for complete abstinence?

Wisconsin Case Study

- 37 yo male, drinks 2-3 beers night during week and usually 4-5 per night on Saturday and Saturday "watching football."
  - Average weekly intake 18-31 standard drinks per week.
  - Occasional binge of 6+ beers (New Year's, Super Bowl Sunday)
  - Acknowledges to his wife that he does fall asleep on the floor after dinner ("Stress from work.")
    - Does not play with the kids like he used to or do pleasurable reading much anymore.
  - Has to admit to his admonishing wife that he has been inebriated at times and should not have been driving.
  - Admits to MD he drinks 1-3 beers a day. (That is in the APS)
    - MD tells him he aught to decrease since he has put on some weight and is getting a gut.
- Is there a "drinking problem" or Alcohol Use Disorder?
  - If so, how severe is it?

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Redemption?

- 5 years later
  - Cut down his drinking to 1-2 beers a day two to three times a week, limits himself to three to four beers one weekend day. (Found in APS.)
  - “Binges” > 5 infrequently at home or allows his wife to drive home.
  - More energy at home with kids and with activities like working around home and reading for pleasure.
  - Lost his gut with some exercise. (Found in APS.)
- Still drinks. Does he have a current Alcohol Use Disorder?

Alcohol Use and Mortality

- Excessive alcohol consumption is the third leading preventable cause of death in the US.
- More than 85,000 deaths a year in the US are directly attributed to alcohol use
- Excessive drinking has been found to result in 1 in 10 deaths among working age adults
- Nearly 17,000 traffic fatalities in the US in 2000 were related to alcohol use, 40 percent of all traffic fatalities
- The risk of drowning has been reported to be 3.5 times greater for current drinkers than for age-adjusted controls
- Seventy percent of attempted suicides by college students involved frequent alcohol use in 1992
- The lifetime rate of suicide attempts among frequent alcohol users in US was 7%, well above the US general adult population rate of 1%

Underwriting Combo Products

- For Life: Mortality considerations
  - Heavy chronic use + 75-100 % “Standard” insured population”
  - Heavy chronic use with some “mild” complications (e.g. gastritis, esophagitis, episode of paroxysmal atrial fib) + 150 -200 % “Standard”
  - Severe Alcohol Use Disorder. Usually with dependence or severe complications (pancreatitis, cardiomyopathy, alcoholic hepatitis, etc.) + 300 % or greater
- For the LTC Rider
  - Concerns start at heavy chronic use.

Alcohol Related LTC Claims Experience

Chronic sequelae of excessive alcohol use

- Alcoholic liver disease, cirrhosis, liver failure
- Alcoholic cardiomyopathy
- Wernicke Encephalopathy
- Korsakoff Syndrome
- Ventricular Enlargement and Cognitive Dysfunction
- Alcoholic Cerebellar Degeneration
- Peripheral Neuropathy
- Myopathy
- Marchiafava-Bignami disease

↑ **Morbidity**
&
↑ **Mortality**

Alcohol Related LTC Claims Experience

Client A – TQ LTC, 250,000 policyholders, 28,833 paid claimants for over $2.4B in total paid claims from inception in 1995

- Only 28 claims involved alcohol (0.1% of claims)
- Men>Women; average duration 6.4 months
- Average age: 75 years; spanning 53 – 89 years
- Mostly ADL dependencies; 25% recovered; most died
- Significant compression of morbidity (average ETOH claim approx. 12.5% of average LTC claim)
- Assortment of diagnoses – dementia, nutritional disorder, weakness, hepatitis and cirrhosis, injury

Alcohol Related LTC Claims Experience

Client B – TQ LTC, over 275,000 policyholders, 2,000 paid claimants since inception in 1997

- Only four claims coded for alcohol associated illness;
  - 1 case: “Organic Brain Syndrome” with Alcohol Dependence secondary
  - 1 case: Alzheimer’s with Alcohol Dependence secondary
  - 2 cases: Cirrhosis with Alcohol Dependence secondary

There is significant under reporting of alcohol associated illness

Alcohol Related LTC Claims

Claims management challenges

- Contract exclusions – how do they apply?
- Acute manifestations
  - Variability in presentation
  - Recovery happens
  - So does relapse
- Chronic manifestation
  - Significant interaction with comorbidity
  - Comorbidities are exacerbated and become chronic and debilitating
  - Recovery rarely happens

Party On – Challenges and Conclusions

Underwriting

- Alcohol Use Disorder is very prevalent
- Clinical practice significantly under reports AUD
- “At-risk” use starts at around 21 (men) and 14 drinks (women) per week for men and women
- Under reporting:
  - Positive biomarkers or positive history of behavior problems
  - Admitted or documented “at-risk levels of use likely => heavy use
  - Heavy use has known mortality and proportionally contributes to morbidity

Party On – Challenges and Conclusions

Claims

- Rarely will alcohol be acknowledge as a mechanism for disability and dependency
- Heavy alcohol use (admitted or not) will be a co-morbid in many debilitating disorders
- Alcohol likely contributes to dementia in many unrecognized cases
- Debility due to alcohol appears to be associated with significant compression of morbidity
- Many recover, most die

Party On, Party Over Alcohol Use from Underwriting through Claim

Questions and Discussion

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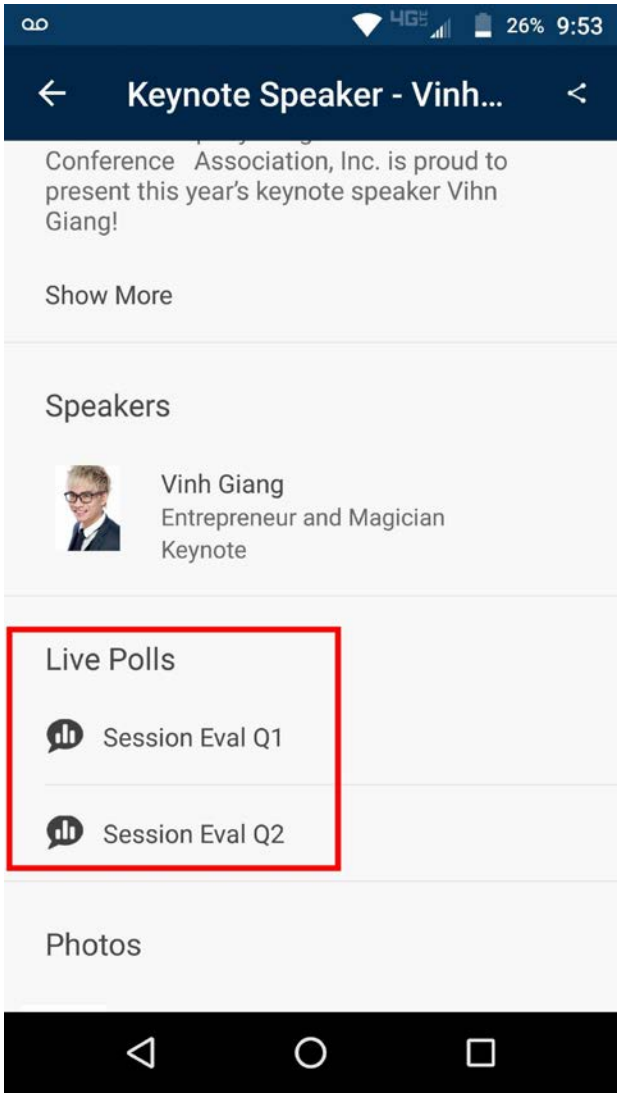

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