Hepatocellular Carcinoma (HCC)

- HCC is the fifth most common cancer in the world and the third most common cause of cancer mortality
- Age-adjusted HCC incidence rates escalating
- Incidence rates are higher for males x 3
- One-year survival rate is < 50%
- Five-year survival rate is approximately 5-10%
Age-Adjusted HCC Incidence Rates

(Altekruse et al, 2009)
Incidence of HCC, by Age & Gender

(Altekruse et al, 2009)
Risk Factors for HCC

- Chronic infection with hepatitis B virus (HBV)
- Chronic infection with hepatitis C infection (HCV)
  - Alcohol
  - Obesity

Cirrhosis is final common pathway

Interactions between multiple risk factors
Risk Factors for HCC

Most commonly reported

- Non-specific cirrhosis (21%)
- Alcohol-related cirrhosis (16%)
- Chronic HCV infection (10%)
- Chronic HBV infection (5%)
- Obesity ± diabetes (?)

(Altekruse et al, 2009)
Alcohol-Related Liver Injury

Normal liver
→ Fatty Liver
→ Alcoholic Hepatitis
→ Alcoholic Cirrhosis
→ Hepatocellular Carcinoma
Alcohol-Related Liver Injury

Normal liver

Steatosis

- 100%→ 100%

Alcoholic hepatitis

- 75%→ 10-35%

Alcoholic cirrhosis

- 35-55%→ 25%

- 20%→ HCC

Drinking

Abstinent
Increasing Rates of Cirrhosis

- Bulgaria
- Denmark
- Estonia
- Finland
- Baltic countries
- Poland
- Russia
- UK & Ireland

- Northern & Eastern European
- Beer/spirit drinking
- Binge pattern
- Starting from lower levels
Falling Rates of Cirrhosis

- Austria
- France
- Germany
- Greece
- Italy
- Portugal
- Spain

- Southern European
- Wine drinking
- Drinking with meals
- Starting from high levels
Alcohol attributable burden of incidence of cancer in eight European countries based on results from prospective cohort study

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Men 109,118: Women 254,870
Alcohol and Cancer

Incidence of cancer deaths attributable to alcohol

• Total
  – 10% in men
  – 3% in women

• Upper aerodigestive cancer
  – 44% in men
  – 25% in women

• Liver cancer
  – 33% in men
  – 18% in women

(Schütze et al, 2011)
Risk of HCC in Men, by Alcohol Intake

Brescia, Italy, 1995–2000

(Donato et al, 2002)
Risk of HCC in Women, by Alcohol Intake

Brescia, Italy, 1995–2000

(Donato et al, 2002)
Risk of HCC, by Alcohol Intake

Brescia, Italy, 1995–2000

(Donato et al, 2002)
BMI and Risk of Cirrhosis

(Liu et al, 2010)
BMI, Alcohol & Risk of Cirrhosis

(Hart et al, 2010)
Alcohol and the Risk for HCC

- Alcohol is a risk factor for HCC *per se*
- Alcohol is a facilitatory risk factor for HCC
  - Chronic HCV infection
  - Chronic HBV infection
  - Overweight/obesity
Eliminating HCC: HBV

• Highest risks of HCC in areas where HBV is endemic

• Approximately 350 million people infected with HBV (5%)

• Lifetime risk of HCC for these is estimated at 10-25%

Treatment programmes

Vaccination programmes
Eliminating HCC: HCV

- Approximately 170 million people infected with HCV (3%)
  - 3-4 million new infections each year
  - 2-4% with chronic HCV develop HCC

Prevention programmes
Antiviral therapy
Alcohol Consumption in Europe

- Only 15% of adults in Europe are abstainers
- Overall 55 million European adults are drinking at harmful levels
- Alcohol is the major cause of liver disease in Europe
- Alcohol is the major cause of HCC in Europe
Prevalence of Hepatitis B Infection
Total Adult Alcohol Consumption, 2005

(WHO Global Status Report, 2011)
Europe and the World Drinking

[Graph showing adult alcohol consumption for different regions from 1961 to 1997. The regions include EU, The Americas, Africa, Western Pacific, and SE Asia.]

(Anderson & Baumberg 2006)
Eliminating HCC

Prevent the occurrence of cirrhosis

• HBV vaccination programmes

• Antiviral therapy for HCV

• ? Alcohol