

# What have we learned so far from the legalization of cannabis use?



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# Outline

- Cannabis legalisation in the USA
  - Regulatory model
  - Effects on cannabis products and prices
  - Short term effects on cannabis use and harms
  - Limitations of evidence
- Possible long term effects of legalization
  - Acute harms
  - Harms from long term regular use
- Policies to minimise the harms of cannabis legalisation
  - Product regulation
  - Availability
  - Taxes and prices
  - Protecting youth

# Cannabis legalisation in the USA

- Regulatory model based on alcohol
  - License producers and retailers who operate for profit
  - Few restrictions on the cannabis products that can be sold
  - Minimal restrictions on promotion of cannabis via social media
- This model of cannabis commercialisation has
  - Substantially reduced cannabis retail prices
  - increased the potency of cannabis flower 15%+
  - Increased the use of cannabis extracts > 70% THC
  - Popularised edibles: gummy bears, candy and chocolates

# How has legalisation affected cannabis use and harms so far?

- There have been increases in
  - the frequency of cannabis use among adult users
  - acute harms in EDs in adults:
    - anxiety, psychotic symptoms, hyperemesis syndrome
  - Acute harms from accidental ingestion in children and adolescents
- Unclear if legalisation has increased
  - Car crashes involving cannabis impaired drivers
    - Major challenges in identifying cannabis-impaired crashes
  - Problem cannabis use among adults
    - Conflicting findings in 2 major survey series
    - Treatment data affected by reduction in coerced treatment

# Limitations of data on short term impacts of legalisation

- Still early in implementation of legalisation:
  - 8 years in Colorado and Washington State
  - Much shorter in the other 16 states
  - Legalisation has not displaced the illicit market in most states
  - Prices still higher than they are likely to be in a mature market
- Federal prohibition has limited full commercialisation
  - No legal national cannabis market
  - Limited investment by alcohol, tobacco and finance industries
  - Banking problems for cannabis businesses
  - Federal promotional restrictions because cannabis is illegal
  - Profitability of companies has been a challenge

**How may full legalisation affect cannabis-related harm in the longer term?**

# How may acute adverse effects change?

- Acute toxicity:
  - More adult cases anxiety, dysphoria, panic, and paranoia
  - More child poisonings from accidental ingestion
  - More acute psychiatric presentations
- Cognitive and psychomotor impairment
  - More accidental injuries?
- Psychotic symptoms from high doses of THC
  - Especially among persons with or at risk of psychoses
- More cannabis use in pregnancy
  - Lower birth weight and greater prematurity
  - Unclear if birth defects will increase

# How may the adverse effects of long-term regular use change?

- What do we mean by long term regular use?
  - Daily or near daily use over months and years
  - Most data on the effects of daily use from teens to early 30s
  - In samples using much lower potency cannabis
- What are the outcomes of most concern?
  - Dependence syndrome
  - Poor psychosocial outcomes in young adults
  - Poorer mental health: psychoses, anxiety and depression
  - Noncommunicable diseases in much longer term
    - Cancers, respiratory and cardiovascular diseases



# Cannabis dependence

- What do we mean by cannabis dependence?
  - loss of control over cannabis use
  - continued cannabis use despite evidence of harms
    - impaired cognitive and work performance
    - partner disapproval
    - the economic costs of heavy use
    - respiratory symptoms if cannabis is smoked
- What are the risks of cannabis dependence?
  - 9% of lifetime users (in early 1990s in USA)
  - 16% in adolescent initiators, 33-50% of daily users
  - These may increase with use of more potent cannabis
- More cannabis users seeking help to reduce their use

# Outcomes associated with cannabis dependence

- More likely to use other illicit drugs:
  - Amphetamines, cocaine and heroin
- Poor school outcomes in adolescent users:
  - Early school leaving and
  - Greater welfare dependence in adulthood
- Poorer mental health:
  - Cognitive impairment
  - Schizophrenia and other psychoses
  - Depression and suicide
  - Anxiety disorders
- Are they causes, consequences, or due to common causes?

# What may be the longer term effects of legalisation?

- A profit-seeking cannabis industry that seeks to
  - Increase the N of daily users
  - Extend the duration of cannabis use later into adulthood
  - Use advertising, price and frequent user discounts
  - Market more potent cannabis products
- If US model of legalisation is adopted unclear:
  - how much and how soon regular use will increase
  - How much may harm increase
  - How these harms will be socially distributed
  - How much policies can minimise these harms

# The major challenge for policy makers

- Managing the competing goals of cannabis legalisation:
  - Eliminating illicit cannabis markets
  - Protecting public health
  - Creating a viable cannabis industry
- Policies that eliminate illicit markets likely to promote use
  - Low or no taxes
  - Minimal regulation of availability via retail outlets
  - Wide promotion of use
- Policies that protect public health also protect illicit markets
  - High cannabis taxes
  - Limiting the N of retail outlets
  - a government monopoly on retail sales

# Minimising adverse effects of legalisation

- Broad principles
  - give a greater priority to public health than to eliminating illicit markets
  - Regulate tightly from the start rather than try to do so later
- Allow only herbal cannabis: regulatory simplicity and cost
  - Next best options:
    - a cap on THC content
    - steeply increasing taxes based on THC content of cannabis products
- Restrict access to cannabis
  - Limit N of retail outlets and their hours of sale
  - Do not allow cannabis sales in alcohol and food outlets
- Restrict advertising and promotional activities
  - No brands, celebrity endorsements, or attractive packaging
  - Sales of products that will appeal to children