Substance Abuse: A Public Health Problem in Grenada

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What is Professional Public Health?

“A coalition of professions united by their shared mission and by their focus on disease prevention and health promotion; their prospective approach in contrast to the reactive focus of therapeutic medicine, and their common science: epidemiology”

The Future of Public Health - Institute Of Medicine
Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.
Public Health

- Health Promotion
- Analysis
- Monitoring
- Research
- Epidemics
- Prevention
- Risk
- Communication
Safer Healthier People

Becoming Vulnerable

Vulnerable Persons

Becoming Afflicted

Persons Afflicted Without Complications

Secondary Prevention

Developing Complications

Persons Afflicted With Complications

Tertiary Prevention

Persons Dying From Complications

Primary Prevention

Dr. Bobby Milstein, Syndemics Network, CDC, 2004, adapted by Omowale Amuleru-Marshall, SGU

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<table>
<thead>
<tr>
<th>Healthy</th>
<th>Asymptomatic Disease</th>
<th>SICK</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No Disease</strong></td>
<td>Onset</td>
<td>Usual Detection</td>
</tr>
<tr>
<td><strong>Primary Prevention</strong> (Universal)</td>
<td><strong>Secondary Prevention</strong> (Selective)</td>
<td><strong>Tertiary Prevention</strong> (Targeted)</td>
</tr>
<tr>
<td>Remove Risk Factors</td>
<td>Screening, Early Detection, Referral &amp; Intervention</td>
<td>Treatment to reduce Complications</td>
</tr>
</tbody>
</table>

Owen, Splett, and Owen, 1999, adapted by Amuleru-Marshall

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Risk Factors/Protective Factors

Characteristics (genetic, behavioral, pharmacological, and socio-environmental) that INCREASE/DECREASE the probability that an unhealthy condition, disease or specific cause of death will be experienced
Why do _some_ people engage in risky drug-using behavior?

- Why do _some people_ take a mind-altering drug the first time?

- Why do _some of these people_ continue drug use until they become addicted?
WHAT IS PUBLIC HEALTH?
Public health refers to all organized measures (whether public or private) to prevent disease, promote health, and prolong life among the population as a whole. Its activities aim to provide conditions in which people can be healthy and focus on entire populations, not on individual patients or diseases.
Public Health Approach to Causation/Intervention

- **The host** – the susceptible human being
- An **agent** – the disease-bearing bacterium/virus, gun, alcohol, tobacco or other drugs
- The **environment** – the context of transmission in which the agent reaches the host
Primary Prevention

**Agent**
- Alcohol
- Tobacco
- Other drugs
- Unhealthy foods
- Automobile emissions
- Chemical pollutants

**Host**
- Family illness history
- Obesity
- Smoking
- Excessive drinking
- No exercise
- Unhealthy eating habits
- No medical screening
- Inadequate knowledge

**Environment**
- Poverty/unemployment
- Inadequate education
- Cultural anomie
- Dangerous work places
- Dangerous built environments
- Food insecurity
- Inadequate healthcare services
- Inadequate housing
Psychologists Commonly Focus on Host Factors

- **Host**: Inalterable, unique genetic endowment plus personality, habits, beliefs, behavioral choices and lifestyle (Resistance/Collaboration)

- **Environment**: Natural and built; social determinants; cultural and communal exposures

- **Agent**: Unhealthy foods (transfats, sugars, salt), alcohol, tobacco, etc.
An individual’s behavior and biology plays a significant, but not exclusive, or even primary, role – the permutations vary widely (social placement, culture, family, peer group, life events, drug of choice, etc.)
Problems in Promoting Wellness
- Process of preventing illness and injury, and promoting health, operates within a system of interrelated ecologies and factors
  - Interrelated factors/problems can impair the effectiveness of each component in the system
  - Each component affects each other component
The Public Health Approach is a “harm reduction” approach

- Balance harm caused by the drugs against the harm caused by their regulation
- Develop policies, programs, services and actions to reduce harm along the prevention continuum
  - Health, social and economic harms to individuals, communities and society
Prioritization in Public Health

Is the problem prevalent?

Is the problem impactful?

Can the problem be prevented?
The Two Most Abused and dangerous Drugs Anywhere, Including Grenada are:

- Tobacco
- Alcohol

  - Related Depressants (Barbs., Benzos., “date rape” drugs - Rohypnol, GHB, etc.)
  - Opioids/Narcotics (Heroin, Dilaudid, Percodan, Oxycontin, etc.)
  - Stimulants (“Coke & Speed”, Meth., Ecstasy, Adderall, Ritalin, etc.)
  - Hallucinogens (LSD, Mescaline, etc., Dissociative anesthetics – PCP, Ketamine)
  - Cannabinoids (Marijuana, Hashish)
  - Inhalants (Paint Thinner, Gasoline, Model Airplane Glue)
Vials of "crack" cocaine

Opium poppies in Colombia.

Powder cocaine
Number of patients admitted to RPU, Carlton House and General Hospital for Drug-Related Problems by Types of Drugs: 2014-2015

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Alcohol</th>
<th>Marijuana</th>
<th>PD w/ CC</th>
<th>PD w/o CC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>125</td>
<td>33</td>
<td>117</td>
<td>30</td>
</tr>
<tr>
<td>2015</td>
<td>140</td>
<td>37</td>
<td>111</td>
<td>35</td>
</tr>
</tbody>
</table>

- Cultivation of marijuana: 7 in 2014, 21 in 2015
- Possession of cocaine: 11 in 2014, 13 in 2015
- Trafficking: 20 in 2014, 37 in 2015
- Possession with intent to supply: 11 in 2014, 7 in 2015
- Possession of apparatus: 7 in 2014
Deaths in Grenada, 2006-2010

Number of Deaths

Period (Years)

2006 2007 2008 2009 2010

Deaths from CNCD  Total Deaths

Deaths in Grenada, 2006-2010

Deaths from CNCD  Total Deaths
Causes of chronic diseases

**UNDERLYING SOCIOECONOMIC, CULTURAL, POLITICAL AND ENVIRONMENTAL DETERMINANTS**
- Globalization
- Urbanization
- Population ageing

**COMMON MODIFIABLE RISK FACTORS**
- Unhealthy diet
- Physical inactivity
- Tobacco use

**NON-MODIFIABLE RISK FACTORS**
- Age
- Heredity

**INTERMEDIATE RISK FACTORS**
- Raised blood pressure
- Raised blood glucose
- Abnormal blood lipids
- Overweight/obesity

**MAIN CHRONIC DISEASES**
- Heart disease
- Stroke
- Cancer
- Chronic respiratory diseases
- Diabetes
Tobacco Use

- Tobacco use is the leading cause of preventable disease and deaths in the U.S.
  - Cigarette smoking and exposure to secondhand smoke resulted in at least 443,000 premature deaths each year
  - It causes...
    - Respiratory infection
    - Coronary Heart Disease
    - Stroke
    - Lung cancer
    - Mouth cancer
    - Throat cancer
    - Esophageal cancer
    - Bladder cancer
    - Cervical cancer
    - Pancreatic cancer
WARNING!

CIGARETTES ARE ADDICTIVE.
Biobehavioral Model of Nicotine Addiction and Tobacco-Related Cancers

Social Factors
- culture
- socioeconomic status
- media/peer/family influences
- politics

Psychological Factors
- comorbidity
- personality
- stress

Biological Factors
- genetics
- nutrition

Behavioral Neurochemical, and Physiological Factors

Tobacco Use, Dependence, Cassation, and Relapse

Tobacco-Related Cancers
Tobacco Use Cessation Can Occur

According to the National Health Interview Survey of U.S. Households conducted by the CDC in 2008

“Of the estimated 94 million persons who had smoked at least 100 cigarettes during their lifetimes, 51.1 percent (48.1 million) were no longer smoking at the time of the interview”
Continuum of Risk

Product Switching

Cigarettes
Smokeless Tobacco
Nicotine Products

Relative Risk for Chronic Disease

(For illustrative purposes only)
EXCESSIVE ALCOHOL USE
ADDRESSING A LEADING RISK FOR DEATH, CHRONIC DISEASE, AND INJURY
There is a reported lifetime prevalence of alcohol use among Grenadian secondary students of 72%
  - With an average age of initiation of 12 years old

Grenada has the distinction of being the Caribbean country with the highest per capita consumption of alcohol (12.5 litres per capita)
Prevention Opportunities

- Cost (tax/price)
- Laws and policies
- Availability and Accessibility
- Responsibility of the community
Restricting Price Based Promotions

Restricting promotional motivation to purchase, use and abuse alcohol
Secondary and Tertiary Prevention INTERVENTIONS

Screening and Early Intervention and Alcoholism Treatment

ON DEMAND!!!!
Abused drugs might be classified according to their addictive potential

- **Addictive to everyone**
  - Nicotine
  - Narcotics (Heroin)
  - Cocaine (Crack)
  - Benzodiazepines/Barbiturates, other depressants

- **Addictive to some**
  - Alcohol
  - Marijuana
  - Hallucinogens
Why Can’t Addicts Just Quit?

Non-Addicted Brain

Control

Saliency → Drive

Memory

Addicted Brain

Control

Saliency → Drive

GO

Memory

Because Addiction Changes Brain Circuits

Adapted from Volkow et al., Neuropharmacology, 2004
Earlier is Always Better…
Prevention, early intervention, anything, before the last resort of a prognostically-poor, expensive cure…or worse!
Can we prevent ATOD Abuse and addiction?

YES

We must seek to reduce known risk factors (contextual, pharmacological, and personal) and also reduce harmful use