

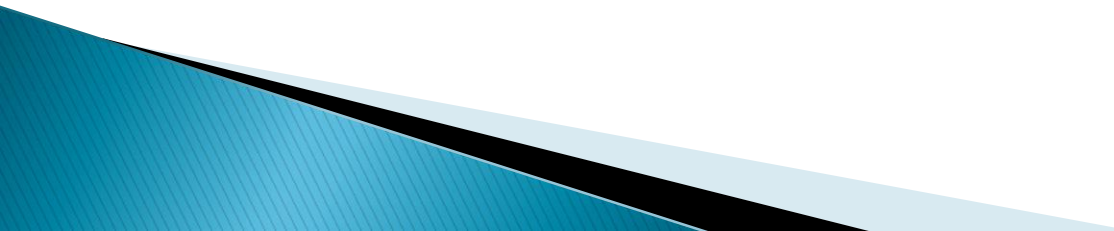
Drug Epidemiology (What is it?)

THE ROLE OF RESEARCH IN THE DEVELOPMENT OF EFFECTIVE
POLICY IN THE FIELD OF DRUG ABUSE PREVENTION

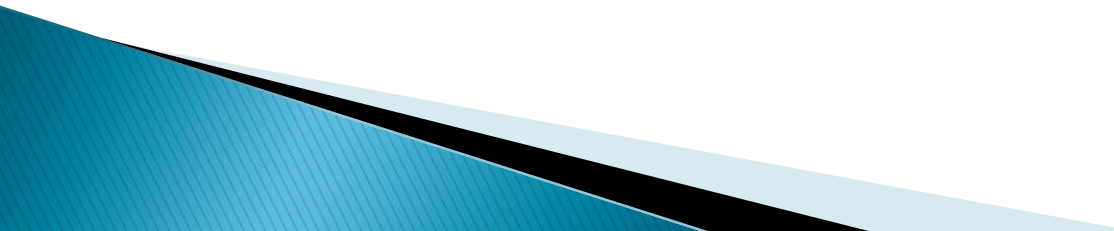
OCTOBER 29 TO 31, 2014
Port of Spain, Trinidad & Tobago

Dr. Ken-Garfield Douglas

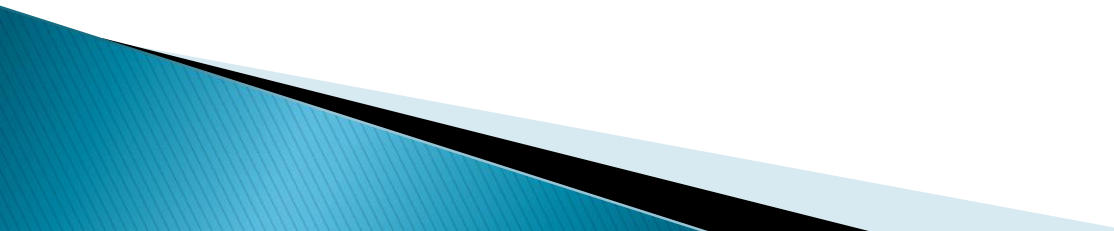
Outline

- ▶ Definitions
 - ▶ Background/Introduction to epidemiology
 - ▶ Methodologies
 - ▶ Need for Drug Abuse Epidemiology Data
 - ▶ Ethical Considerations in Drug Epidemiology
 - ▶ Methods for drug epidemiology
 - ▶ Data Management and Analysis
 - ▶ Reporting
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Important Definitions

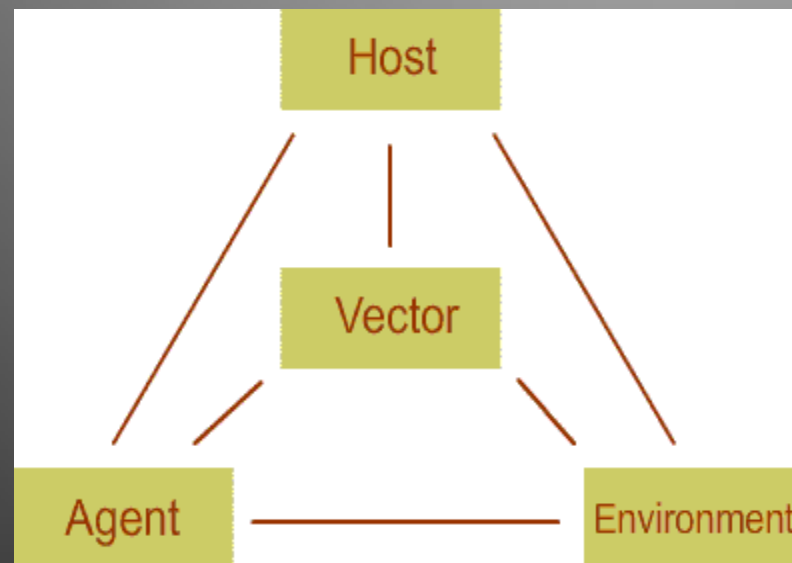
- ▶ Epidemiology is the study of the distribution and determinants of health-related states or events (including disease), and the application of this study to the control of diseases and other health problems.
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Definitions

- ▶ Epidemiology is the science that studies the patterns, causes, and effects of health and disease conditions in defined populations.
 - ▶ It is the cornerstone of public health, and informs policy decisions and evidence-based practice by identifying risk factors for disease and targets for preventive healthcare.
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Introduction / background

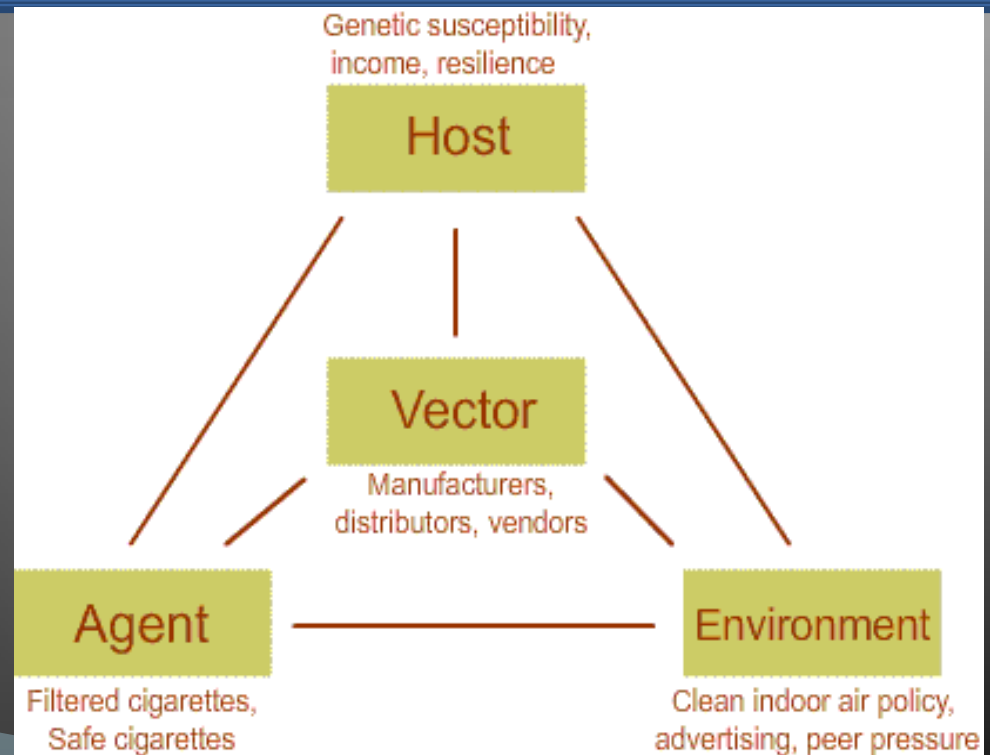
In the traditional epidemiologic triad model, transmission occurs when the agent leaves its **reservoir** or **host** through a **portal of exit**, is conveyed by a **mode of transmission** to enter through an appropriate **portal of entry** to infect a **susceptible host**. Transmission may be **direct** (direct contact host-to-host, droplet spread from one host to another) or **indirect** (the transfer of an infectious agent from a reservoir to a susceptible host by suspended air particles, inanimate objects (vehicles or fomites), or animate intermediaries (vectors)).



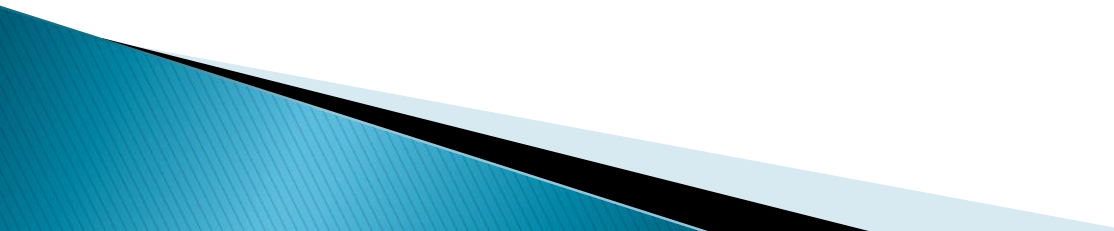
Introduction/background

Can the epidemiologic triad can be applied to a disease that is not infectious?

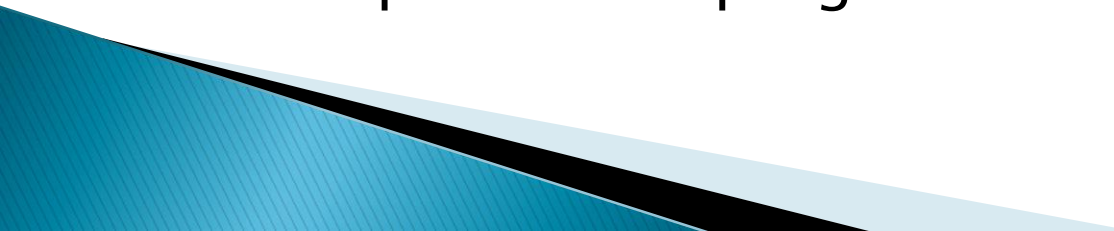
Consider a smoking-related disease. If smoking (or more specifically, a carcinogen in the smoke of the cigarette) causes the disease, those who manufacture, sell and distribute cigarettes are vectors, bringing the disease-causing agent to the susceptible host.



Introduction

- ▶ Diagramming the epidemiologic triad also indicates potential interventions to reduce disease in the population. In this example, clean indoor air legislation, advertising potential harm from smoking or establishing workplace smoking cessation programs could change the environment and reduce the exposure of host to agent.
 - ▶ Conversely, increased advertising from cigarette manufacturers or increased numbers of vendors would increase exposure of host to agent.
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Introduction

- ▶ Recent history shows that in contrast to the issues in which drug abuse differs from other types of epidemiologic investigation, the areas of similarity are immediately evident.
 - Drug abusers demonstrate patterns of behaviour that can be measured
 - incidence curves can be drawn
 - rates of prevalence can be computed
 - attack rates can be calculated
 - risk factors can be identified
 - etiologies and consequences can be determined,
 - and prevention programmes can be implemented.
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What methodologies does epidemiology offer us

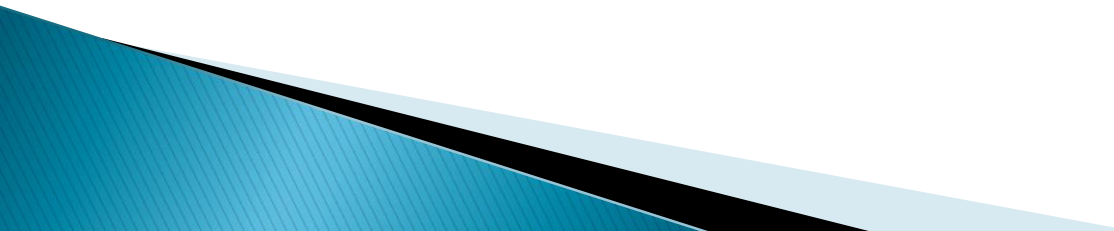
- ▶ **Descriptive Epidemiology:**

- It is important for generating hypotheses (possible explanations) about the determinants of health and disease. By generating hypotheses, descriptive epidemiology also provides the starting point for analytic epidemiology

Examples:

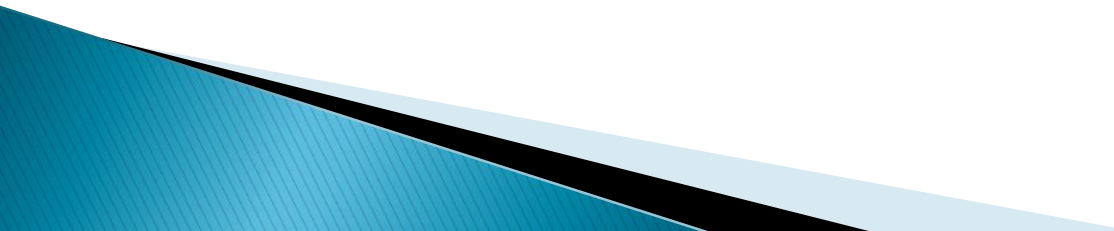
School and General Population Surveys (cross-sectional), used to monitor trends, changes in attitude, prevalence of drug use

What methodologies does epidemiology offer us


- ▶ **Analytical epidemiology** formally tests associations between potential determinants and health or disease outcomes.
 - ▶ Documents specific risk factors associated with drug abuse
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Need for Drug Abuse Epidemiology Data

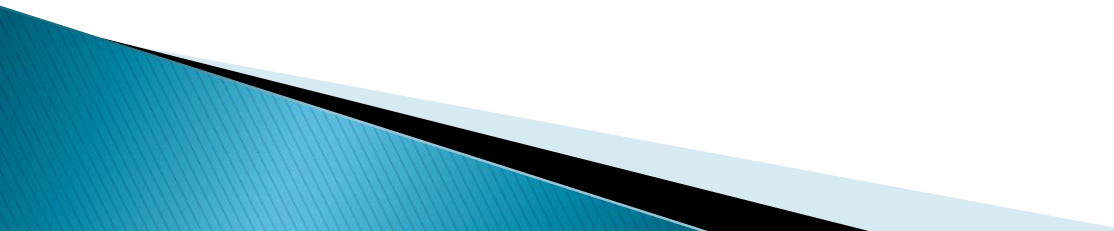
Epidemiological studies help to answer a number of key questions that enable a public health response to a particular problem.

- ▶ What is the extent of drug abusing behaviours?
 - ▶ What are the nature and pattern of the drug abusing behaviours?
 - ▶ What are the characteristics of persons abusing drugs?
 - ▶ How do drug abusing trends look over time and what impact do the characteristics of drug abusers and drug abuse patterns at any point in time have on these trends?
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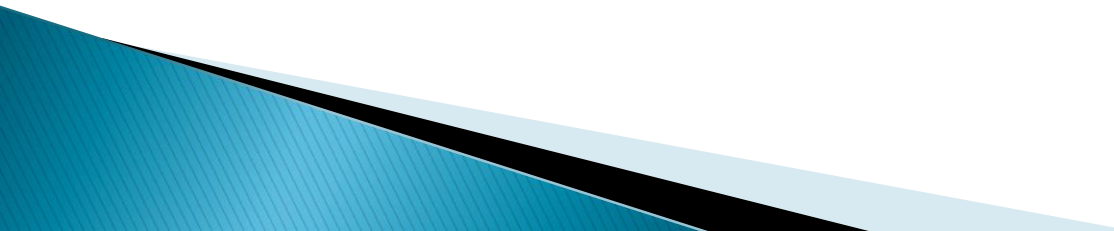
Need for Drug Abuse Epidemiology Data

- ▶ What factors are associated with abuse of drugs and influence the onset of drug abusing behaviours and continued abuse of drugs?
 - ▶ What protective factors are associated with not using drugs?
 - ▶ What are the social, behavioural, biomedical, psychological, psychiatric, and economic impacts of drug abusing behaviours on individuals, families, communities, and society?
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Ethical Considerations in Drug Epidemiology

- ▶ Issues pertaining to ethics in the conduct of research and the "protection" of human subjects from research risks, including data confidentiality, must be carefully considered in substance abuse epidemiology.
 - ▶ The overall guiding principle in all research should be to do no harm to the subjects, nor the researchers, taking part in the studies
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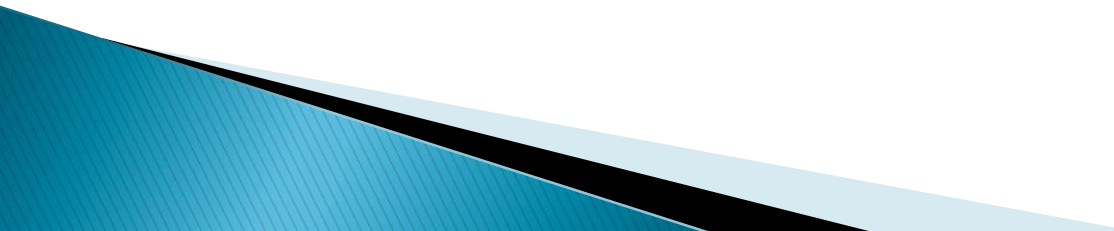
Ethical Considerations in Drug Epidemiology

- ▶ Study subjects must freely consent to participate in any research project. Sufficient information must be presented to enable each person to voluntarily decide whether or not to participate as a research subject.
 - ▶ The study's purpose, benefits, risks, duration, procedures, and alternatives should be described to potential subjects in easy to understand language
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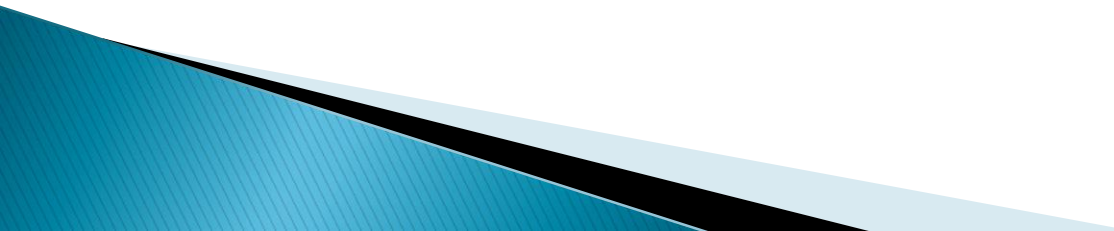
Ethical Considerations in Drug Epidemiology

- ▶ Epidemiological research should be conducted in such a way that is sensitive to different cultures and respectful of local ethical values, customs, religions and social norms.

Ethical Considerations in Drug Epidemiology

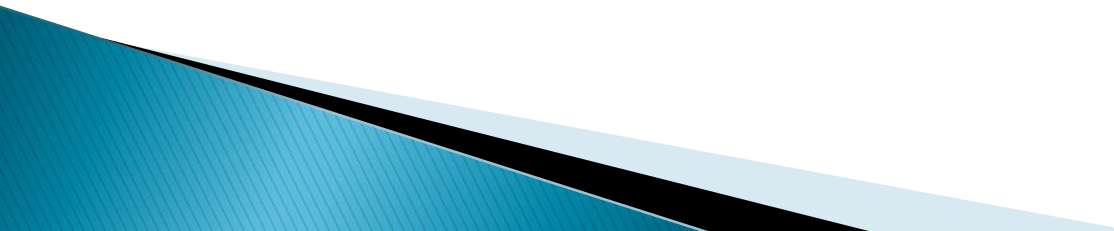
- ▶ Where studies involve the collection of biological samples (e.g. urine, blood, and saliva), it is very important that all subjects are fully informed about specimen collection procedures, the option to decline participation, and provide voluntary consent for this part of the study.
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Ethical Considerations in Drug Epidemiology

- ▶ An important ethical consideration is to ensure that any findings or results are fed back to the individuals, groups or communities taking part in the research.
 - ▶ Possible results which have a bearing on public health and interventions should be made available quickly to those agencies and individuals responsible, in an appropriate and comprehensible way.
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Let look at some of the methods for drug epidemiology and when used

To determine: Extent of the Problem or Characteristics of Persons Involved:

- General Population Surveys
 - Special Population Surveys
 - Rapid Assessment Methodology
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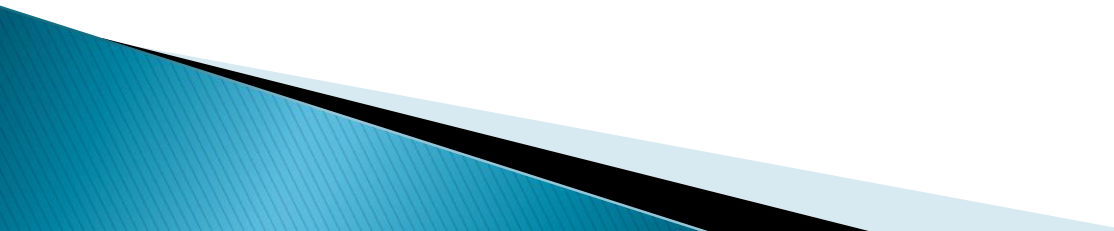
methods for drug epidemiology

Nature of the Problem

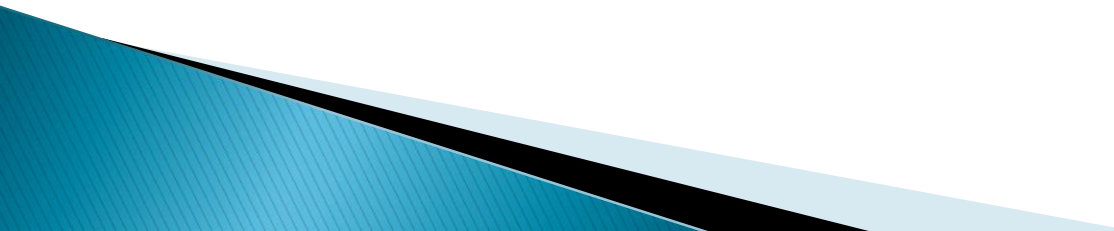
- Existing data
 - Key informants, focus groups and other qualitative methods
 - Rapid Assessment Methods
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- ▶ Factors & Processes Associated with Initiation & Maintaining Drug Use
 - Longitudinal studies

Methods for drug epidemiology


Consequences and Other Factors

- ▶ Longitudinal studies
 - ▶ Existing data
 - ▶ Natural history studies
 - ▶ Special studies
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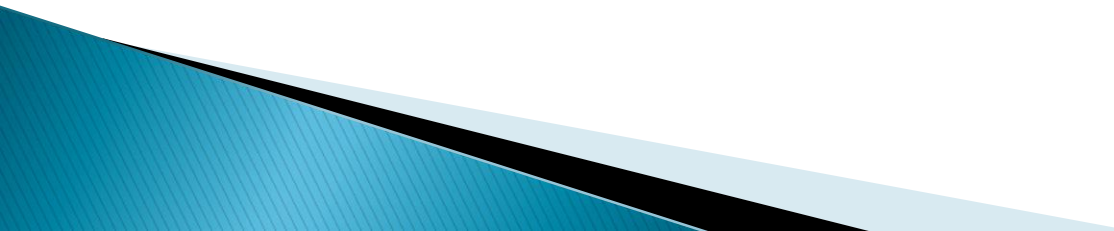
Data Management and Analysis

- ▶ Data management includes a number of tasks for reviewing, collating and processing the data that are collected. The two main goals of data management are to assure high quality data that are accurate and complete and to prepare the data for analyses.
 - ▶ Simple analyses such as overall percentages of drug users and cross-tabulations by age, sex and other demographic characteristics will be sufficient, however, more detailed analytical statistical work using multivariate techniques is more difficult to do and requires the advice of statisticians or at least those well acquainted with those techniques.
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Reporting and Analysis of Results

- ▶ The report must be designed for the most likely potential readers. It should contain the results of most interest to them and should be written at the level that is appropriate to the readers.
 - ▶ Once a report on drug abuse has been prepared some plan is needed on how to make the report have the impact it deserves on decision making.
 - ▶ It is important to make health planners and government officials aware of the report
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Reporting and Analysis of Results

- ▶ Press releases or press conferences may be appropriate to give the results wide distribution in the mass media
 - ▶ In addition, if possible, it would be helpful to hold a meeting of key decision makers representing appropriate agencies and organisations to review and interpret the data to decide what course of action is required
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Examples of Epidemiology Studies

International

- Monitoring the Future
- Drug Abuse Warning Network (DAWN)
- the European School Survey Project on Alcohol and Other Drugs (ESPAD)

Regional/National

- Report on Drug Abuse in the Americas
 - Student Drug Use in Caribbean Countries
 - National General Population Household surveys
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Conclusion

- ▶ D.A.E., though recent, has provided a unique methodology in response to the need for valid, reliable and timely information on the prevalence, trends, and patterns of drug use related problems. This information is needed for planning, implementing and evaluating, effective prevention, treatment, policy response and other interventions for substance use related problems.
- ▶ *epidemiology is one of the main ingredient in the methodological armament of drug abuse research*