


ENVSC 296: Lesson No. 2



Overarching Concepts

January 6, 2005

Chuck Treser & Sandy Rock

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Lesson Overview

- ❖ Public Health
- ❖ Prevention vs. Cure
- ❖ Environmental Health
- ❖ Epidemiological Model
- ❖ Generic Control Strategies
- ❖ Ecology

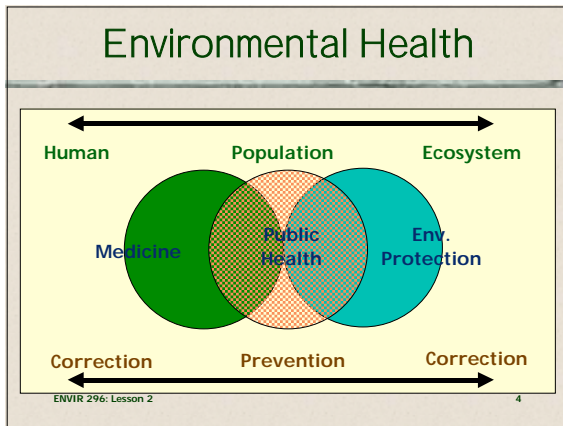
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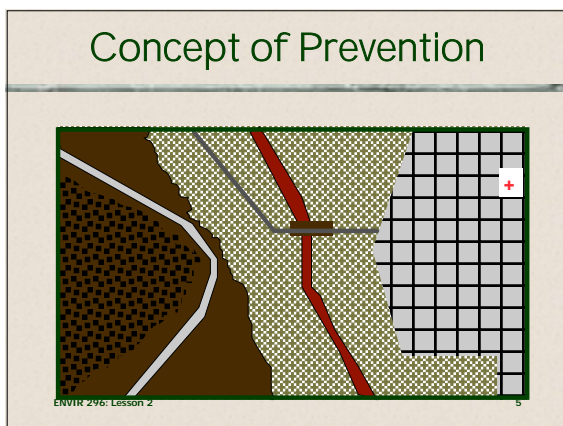
Importance of Public Health

Preventable Early Deaths United States, 1993

Category	Percentage
Public Health	70%
Genetic	20%
Medical Treatment	10%

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Definition

Environmental health is . . .
the study of the *adverse effects* of *environmental factors and conditions* on *human health and well-being* and the development and implementation of *prevention and control strategies and programs*.

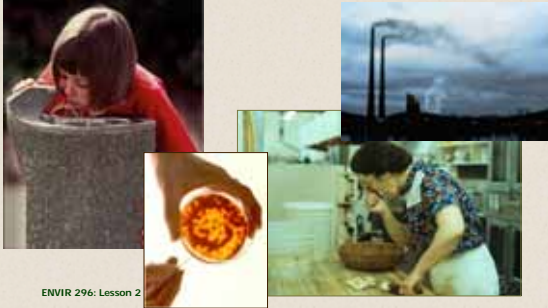
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Origins of Env. Health

- ❖ The roots of Environmental Health are found in many ancient cultures.
- ❖ Environmental Health has evolved out of two lineage:
 - > 1) Medicine
 - > 2) Engineering

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EH Programs



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EH Program Areas

<ul style="list-style-type: none">❖ Air Quality❖ Food Protection❖ Hazardous Substances❖ Injury Prevention<ul style="list-style-type: none">> Product Safety> Recreational Areas> Traffic Safety❖ Land Use❖ Noise Control❖ Occupational Health & Safety❖ Radiation Protection	<ul style="list-style-type: none">❖ Shelter<ul style="list-style-type: none">> Housing> Schools & Institutions❖ Solid & Hazardous Waste Management❖ Vector Control❖ Water Quality<ul style="list-style-type: none">> Water Resources & Water Supplies> Drinking Water Quality> Wastewater Treatment & Disposal> Recreational Waters
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Career Opportunities

- ❖ Sanitarians or EH Specialists
- ❖ Environmentalist, Env. Protection Specialist, etc.
- ❖ Industrial Hygienists




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EH Job Market

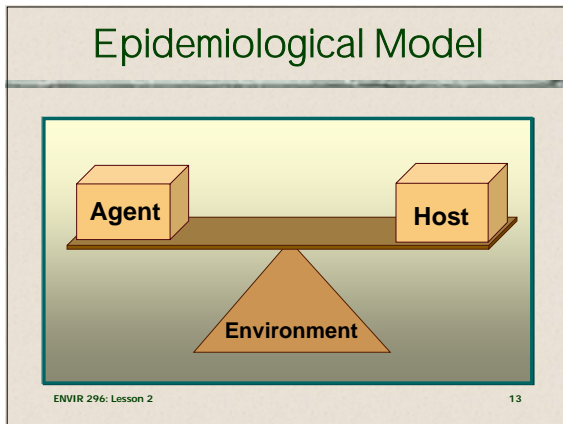
- ❖ Public Sector
 - > Local Health Depts.
 - > State Health Agencies
 - > US DHHS
 - US Public Health Service (CDC)
 - NIOSH
 - > State & Federal EPAs
 - Some local EPAs
 - > Natural Resource Depts.
 - > Depts. of Agriculture
 - > Depts. of Labor
 - > Military
- ❖ Private Sector
 - > Food Processing and Service Industries
 - > Manufacturing and Construction Industries
 - > Engineering & Consulting Firms
 - > Insurance Industry

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Levels of Concern



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Agent Factors

- ❖ Biological Agents
 - > Micro-organisms
 - Bacteria
 - Viruses
 - Helminths
 - > Plants
 - > Animals

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Agent Factors *Continued*

- ❖ Chemical Agents
 - > Inorganic Chemicals
 - Heavy Metals
 - > Organic Compounds
 - Solvents
 - > Pesticides

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Agent Factors *Continued*



- ❖ Physical Agents
 - > Sharps
 - > Force
 - > Noise
 - > Radiation
 - Ionizing
 - Non-ionizing

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Host Factors



- ❖ Age
- ❖ Gender
- ❖ Race / Ethnicity
- ❖ Other Important Factors
 - > Occupation
 - > Education
 - > Hobbies
 - > Lifestyle

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Environmental Factors



- ❖ Physical Environment
 - > Natural Environment
 - Geography & Geology
 - Climate
 - Flora & Fauna
 - > Built Environment
- ❖ Socio-cultural Environment
- ❖ Temporal Environment

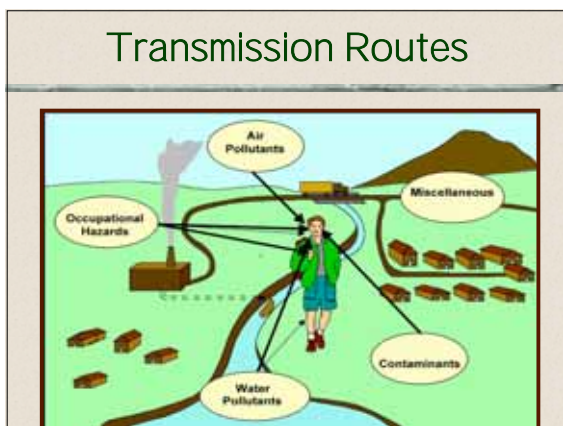
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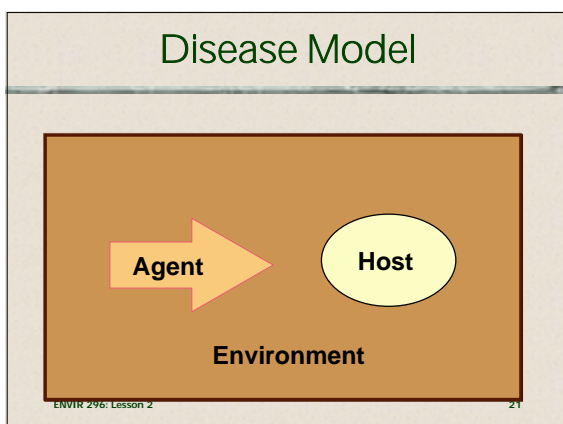
Types of Transmission

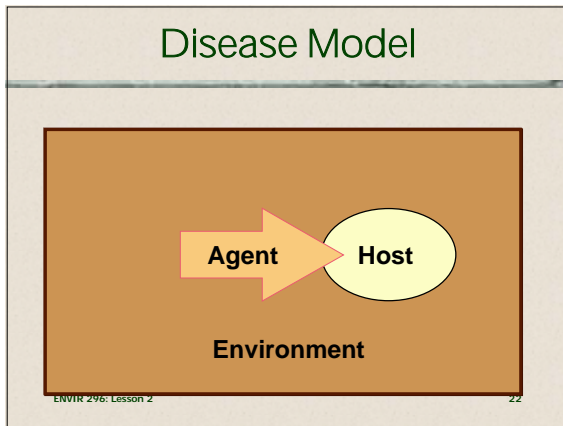


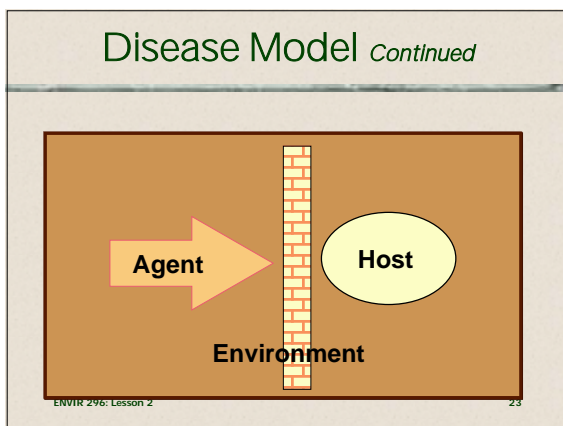
- ❖ Direct
 - > Contact
 - > Via the air
- ❖ Vehicle
 - > Food
 - > Water
- ❖ Vector

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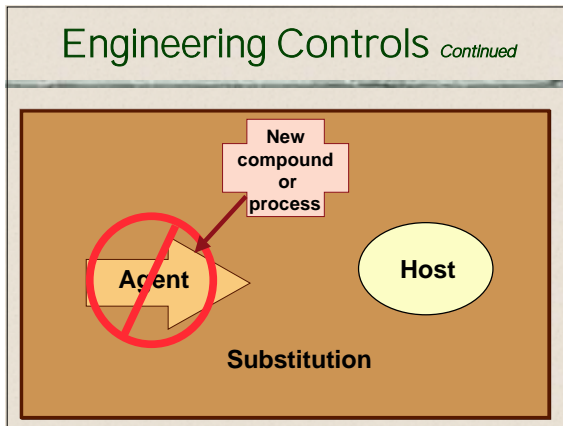


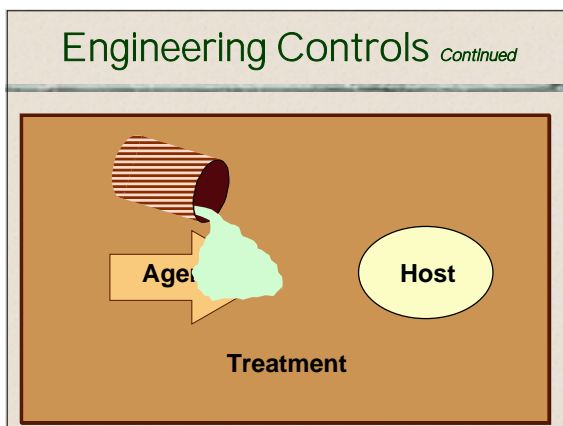


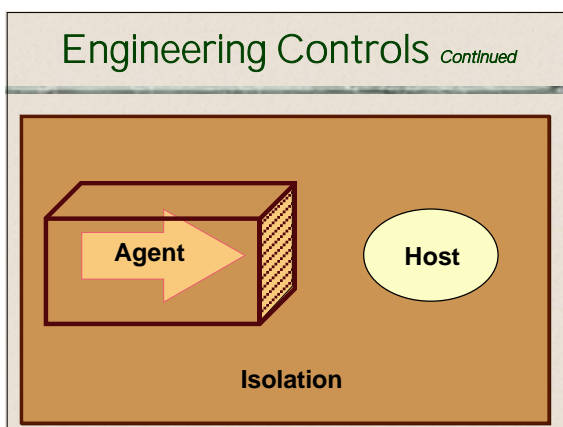
Control Strategies

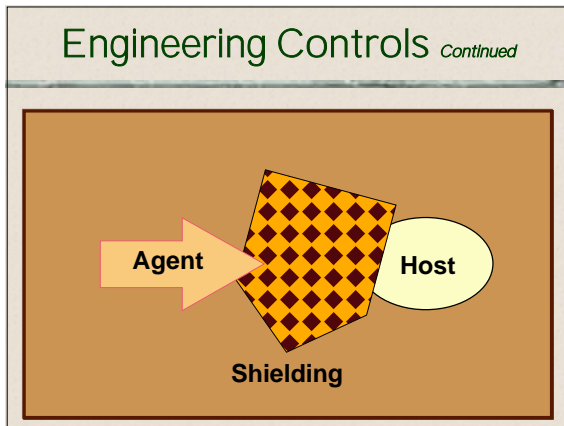
- ❖ Engineering
- ❖ Legal/Regulatory
- ❖ Administrative
- ❖ Education

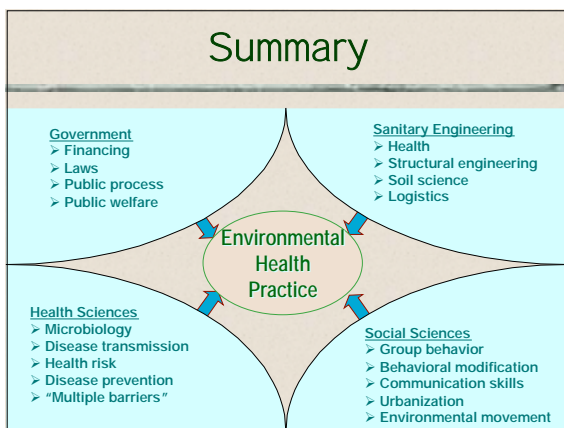
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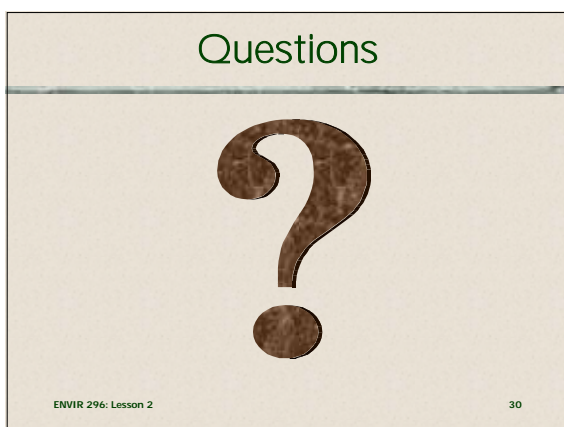


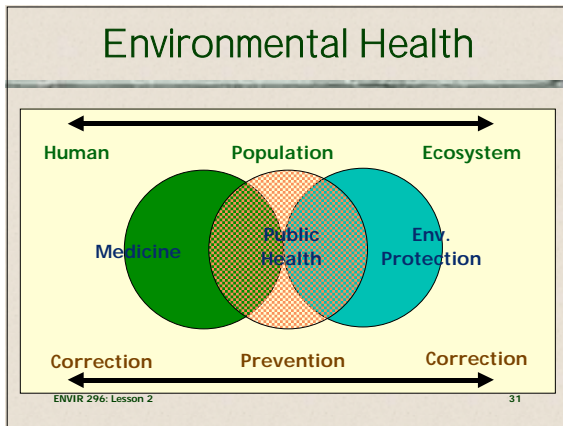












Ecology

- ❖ Principles of Ecology
- ❖ Gaia

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Next Lesson

Tools for Evaluating Environmental Health

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