



A Destiny of Success



TRAINING
EDUCATION
QUALITY IMPROVEMENT
HEALTHCARE EXCELLENCE



Infection Prevention in Design and Construction of the Healthcare Environment

Risks Associated with Environmental Contamination

- **Contamination of water system could lead to disease**
 - **common water pathogens: Legionella Pneumophila**
- **Excessive exposure to mold-contaminated materials can cause adverse health effects in susceptible persons regardless of the type of mold or the extend of contamination**
 - **most common mold: Aspergillus**

What is Infection Prevention & Control's Role in Construction

- Pre – planning
- Design meetings
- Bid requirements
- Project team meeting
- Pre – construction
- Demolition
- Construction
- Monitoring
- Punch List
Commissioning

From design through commissioning

The Design Infection Control Risk Assessment

When?

- during pre – planning and design.

Why?

- it will cost effective.... Reduces change orders
- it will ensure patient area are functional from an IC perspective
- it is safe for patients and staff

How?

- when there is a proposal to renovate and construct a new space
IPC should be included

Types of Construction Risk

Type A

Inspection & noninvasive activities

- Removal of < 2 ceiling tiles removed & no invasive work above ceiling
- Painting (but not standing)
- Electrical trim work
- Maintenance activities that do not generate dust

Type B

Small-scale, short-duration activities that create minimal dust

- Activities that require access to chase spaces
- Cutting of walls or ceilings where dust migration can be controlled (contained to a single room where door can be closed) for installation/repairs of minor electrical work

Types of Construction Risk

Type C

Any work that generate a moderate to high level of dust or require demolition

- Removal of any fixed building components or assemblies (countertops, cupboards, sink)
- Sanding or removal of walls
- Removal of floor tile or carpet
- New wall construction
- Minor ventilation work

Type D

Major demolition, construction and renovation projects.

- Heavy demolition
- Heavy of a cabling system, ductwork, or pipes
- New construction requiring more than 1 work shift complete

Population & Geographic Risk Groups

Group 1

Lowest Risk

- Office areas
- Unoccupied wards
- Public areas

Group 2

Medium Risk

- Outpatient clinics (except for oncology & surgery)
- Admission / discharge

Group 3

Medium to High Risk

- Emergency rooms
- Radiology / MRI
- Post-anesthesia care unit

Group 4

Highest Risk

- All oncology areas
- All operating rooms/labor / delivery rooms
- All procedural rooms & critical care areas

Infection Control Risk

Assessment (ICRA)

<i>Construction Activity</i>				
<i>Patient Risk Group</i>	Type "A"	Type "B"	Type "C"	Type "D"
Group 1	I	I	II	III/IV
Group 2	I	I	III	IV
Group 3	II	III	III/IV	IV
Group 4	III	III/IV	III/IV	IV

Infection Control Risk Assessment (ICRA)

- Written work permit and signed off by:

- Contractor(s)
- Facilities
- Safety
- Infection control

Infection Control Risk Assessment (ICRA) example

Infection Control Risk Assessment (ICRA) EXAMPLE

Inspection and Non-Invasive Activities

Includes, but is not limited to:

- removal of ceiling tiles for visual inspection only, e.g. limited to 1 tile per 50 square feet
- painting (but not sanding)
- wallcovering, electrical trim work, minor plumbing, and activities which do not generate dust or require cutting of walls or access to ceilings other than for visual inspection

TYPE A

Small scale, short duration activities which create minimal dust

Includes, but is not limited to:

- installation of telephone and computer cabling
- access to chase spaces
- cutting of walls or ceiling where dust migration can be controlled.

TYPE B

Work that generates a moderate to high level of dust or requires demolition or removal of any fixed building components or assemblies

Includes, but is not limited to:

- sanding of walls for painting or wall covering
- removal of floorcoverings, ceiling tiles and casework
- new wall construction
- minor duct work or electrical work above ceilings
- major cabling activities
- any activity which cannot be completed within a single workshift.

TYPE C

Major demolition and construction projects

Includes, but is not limited to:

- activities which require consecutive work shifts
- requires heavy demolition or removal of a complete cabling system
- new construction

TYPE D

Low Risk	Medium Risk	High Risk	Highest Risk
▪ Office areas	▪ Cardiology ▪ Echocardiography ▪ Endoscopy ▪ Nuclear Medicine ▪ Physical Therapy ▪ Radiology/MRI ▪ Respiratory Therapy	▪ CCU ▪ Emergency Room ▪ Labor & Delivery ▪ Laboratories (specimen) ▪ Newborn Nursery ▪ Outpatient Surgery ▪ Pediatrics ▪ Pharmacy ▪ Post Anesthesia Care Unit ▪ Surgical Units	▪ Any area caring for immunocompromised patients ▪ Burn Unit ▪ Cardiac Cath Lab ▪ Central Sterile Supply ▪ Intensive Care Units ▪ Medical Unit ▪ Negative pressure isolation rooms ▪ Oncology ▪ Operating rooms including C-section rooms

- : Permit Indicate construction class
IP, Facilities, Project Manager signatures
All precautions in place before project start
Project Name:Date Prepared:Location of project:Permit No:Project Manager:Project Start Date:Contractor Performing Work:Estimated Duration:Supervisor:Permit Expiration Date:Risk Group: Low Medium High Highest Telephone:Construction

Work Permit Model

Kingdom of Saudi Arabia		a ^u u' o '3 : : i 'p; 'i3i ' NAJRAN p ' i ~ / i ' ~			
Ministry of Health					
Directorate General of Health Affairs- Najran					
King Khalid Hosp. / Infection Prevention & Control					
INFECTION PREVENTION & CONTROL CONSTRUCTION PERMIT (Attachment # 1)					
Location of Work	t' i'				
Project Start Date	sp3 ' i'z3'				
Estimated Duration	sp3 ' i /3i				
Permit Expiration Date	sp3 ' i /z3i				
Project coordinator	sp3 ' ä:				
Contractor Performing Work	t' i /'ip' -'				
Supervisor Name	sp3 ' 3 ~				
Yes	No	Construction Activity	Yes	No	Infection control risk group
		Type A : Inspection , non- invasive activity			Group 1 : Low risk
		Type B : Small scale , short duration , Moderate to high level of dust			Group 2 : Medium risk
		Type C: Activity generates moderate to high level of dust and / or noise requires greater work shift for completion			Group 3 : Medium / High risk
		Type D: Major duration and construction activities requiring work shifts			Group 4: Highest risk
CLASS I During Construction/Renovation and Demolition Projects			Upon Completion of Project		
1. Execute work by methods to minimize raising dust from construction operations			1. Clean work area upon completion of task.		
2. Immediate replace any ceiling tile displaced for visual inspection					
3. Minor demolition for remodeling					
4. Provide MSDS for paint and disinfectants prior to use					
CLASS II During Construction/Renovation and Demolition Projects			Upon Completion of Project		
1. Provide active means to prevent air-borne dust from dispersing into atmosphere			1. Wipe work surfaces with disinfectant.		
2. Water mist work surfaces to control dust while cutting			2. Contain construction waste before transport in tightly covered containers. Choose low traffic time& route.		
3. Seal unused doors with duct tape			3. Wet mop and/ or vacuum with HEPA filtered vacuum before leaving work area.		
4. Block off and seal air vents.			4. Remove isolation of HVAC system in areas where work is being performed (after ducts cleaning/disinfection).		
5. Wipe surfaces with disinfectant			5. Environmental culture and air sampling		
6. Contain construction waste before transport in tightly covered containers. Choose low traffic and route.			6. Water testing for microbiology		
7. Wet mope and / or vacuum with HEPA filtered vacuum before leaving work area.					
8. Place dust mat at entrance and exit of work area.					
9. Remove or isolate HVAC system in areas where work is being performed.					
10. Provide MSDS for paint and disinfectants prior to use.					
CLASS III During Construction/Renovation and Demolition Projects			Upon Completion of Project		
Date Initial : _____					
1. Obtain infection control permit before construction begins.			1. Do not remove barriers from work area until completed project is inspected by Infection Prevention & Control Department and thoroughly cleaned by the construction workers and then the		
2. Isolate HVAC system in area where work is being done to prevent contamination of the duct system			2. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction.		
3. Complete all critical barriers or implement control cube method before construction begins.					
4. Maintain negative air pressure within work site.					
5. Do not remove barriers from work area until complete.					
6. Vacuum work with HEPA filtered vacuums.					
7. Wet mop with disinfectant.					
8. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction.					

INFECTION PREVENTION & CONTROL CONSTRUCTION PERMIT (Attachment#2)		
<p>9. Contain construction waste before transports in tightly covered containers choose low traffic and route.</p> <p>10. Cover transport receptacles or carts. Tape covering</p> <p>11. Remove or isolation HVAC system in areas where work is being performed.</p> <p>12. Provide MSDS for paint and disinfectants prior to use.</p> <p>3. Vacuum work area with HEPA filtered vacuums.</p> <p>4. Wet mop area with disinfectant.</p> <p>5. Remove isolation of HVAC system in areas where work is being performed.</p>		
CLASS IV	During Construction Project	Upon Completion of Project
Date Initial :		
<p>1. Obtain infection control permit before construction begins.</p> <p>2. Isolate HVAC system in area where work is being done to prevent contamination of the duct system</p> <p>3. Complete all critical barriers or implement control cube method before construction begins.</p> <p>4. Maintain negative air pressure within work site.</p> <p>5. Seal holes, pipes, conduits, and punctures appropriately.</p> <p>6. Construction anteroom and require all personnel to pass through this room so they can be vacuumed using a HEPA vacuum cleaner before leaving work site or they can wear cloth or paper covers that are removed each time they leave the work site .</p> <p>7. All personnel entering work site are required to wear shoe covers.</p> <p>8. Do not remove barriers from work area until complete project is thoroughly cleaned by the environmental service department.</p> <p>9. Vacuum work with HEPA filtered vacuums.</p> <p>10. Wet mop with disinfectant.</p> <p>11. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction.</p> <p>12. Contain construction waste before transports in tightly covered containers choose low traffic and route.</p> <p>13. Cover transport receptacles or carts. Tape covering unless solid lid.</p> <p>14. Remove isolation of HVAC system in areas where work is being performed (after ducts cleaning/disinfection).</p> <p>15. Environmental culture and air sampling.</p> <p>16. Water testing for microbiology .</p>		
<p>Additional Requirements : _____</p> <p>Deformalins : _____</p> <p>Exceptions /Additions to this permit : _____</p> <p>Prior to use : _____</p> <p>Date /Initials are noted by attached memoranda</p>		
Engineering	Infection Control & Environmental Health & Safety	
Permit Request by : Date / Signature :	Permit Authorized by : Date / Signature :	
Released for occupancy from Contractor to Advisory Group:	Permit Authorized by : Date / Signature :	
Date / Signature :	Permit Authorized by : Date / Signature :	

- : Daily checklist Class III or IV projects only

Completed by Project Manager upon completion of every shift
Returned to IP at least weekly
IP also tours project area regularly to ensure all precautions are being followed
IP should have the right to stop a project if out of compliance/safety issues discovered
Has # for IP and EVS on form
Monetary penalties if plan/precautions

- Path of travelConstruction workers/equipmentWaste removalAir circulationBreak areas/eating – construction workersAllowed in cafeteria?Infection Control training for contractors and sub-contractorsInternal vs external projectsPhotos

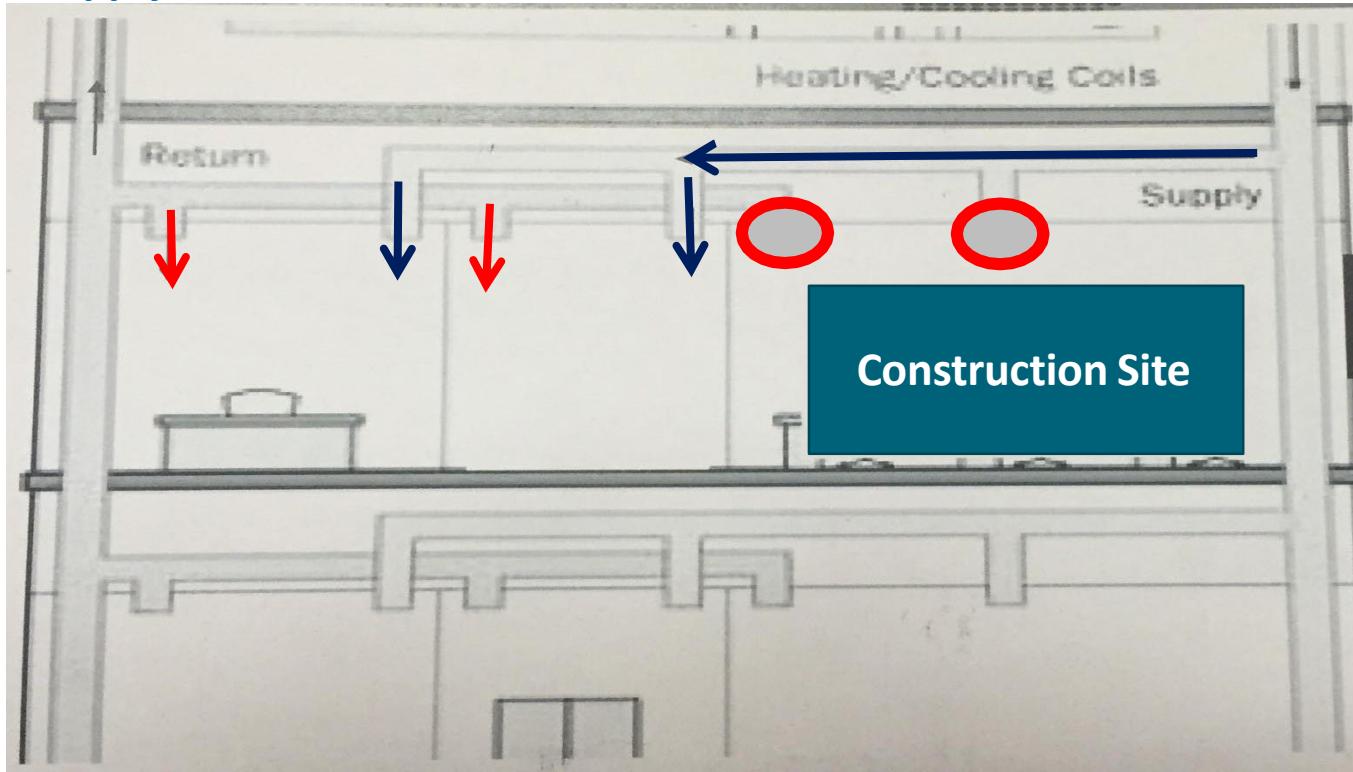
- Fill out permitForward for signaturesChecklist will need to be completed every shift (class III)Surgery will need to be shut down for this time periodNotify EMS, Surgeons, Hospitalists, ED physicians, other departments for which instruments are processed, Leadership, PRWork in phases – team to arrange phasesArrange plan for where sterile supplies will be movedNew “red line” for

First Step in Safe

Construction

- Evaluate impact on ventilation system and isolate if necessary

Must review which other areas or departments are affected by same air supply and return

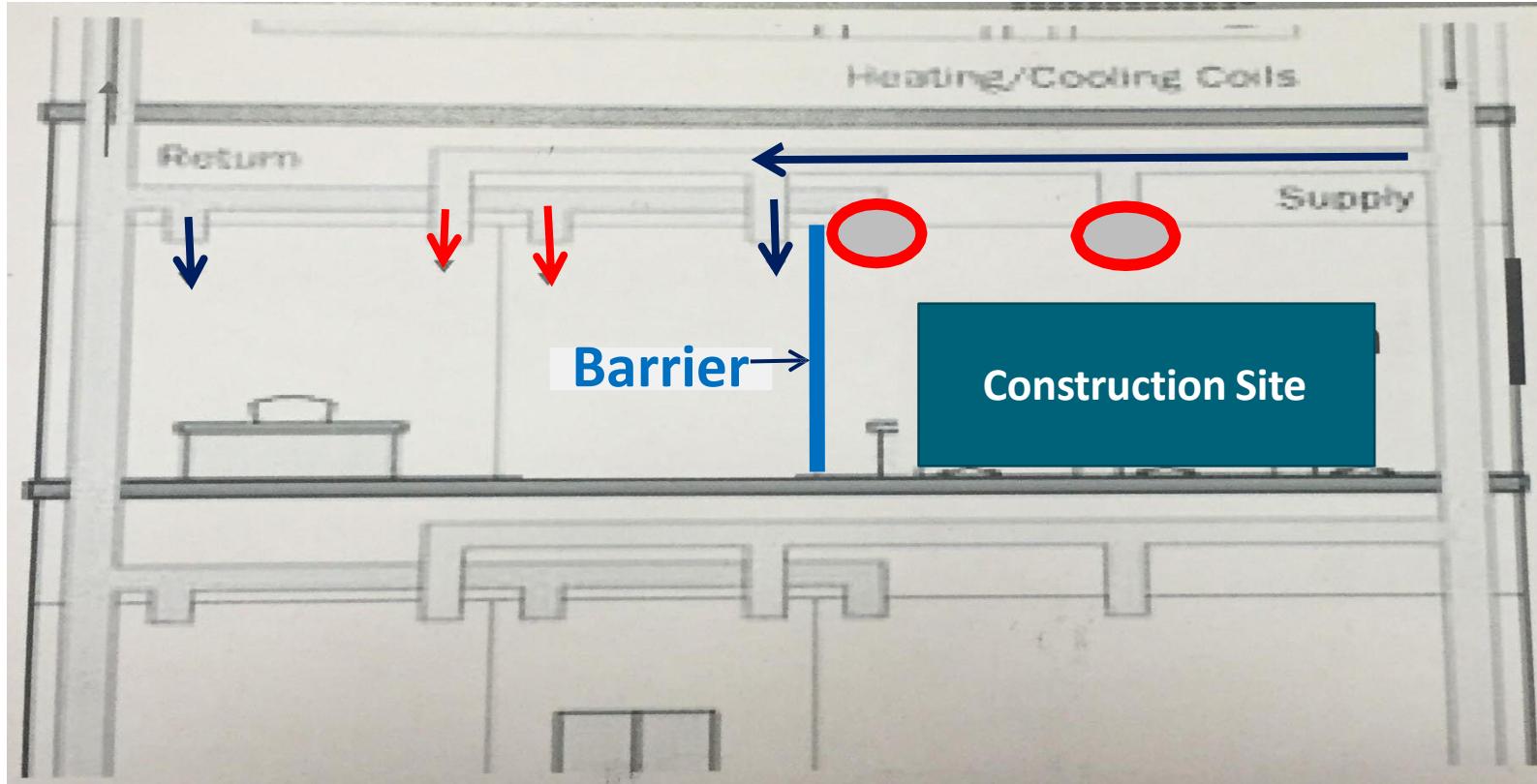


 Sealed return and supply duct

Second Step in Safe Construction

- Install **EFFECTIVE** barrier
- If barriers are not maintained, pressurization cannot be maintained

FAILURE TO ENSURE ADEQUATE BARRIER COULD RESULT IN CONTAMINATION



For barriers separating two areas: Note that **barrier extends from floor to bottom of the floor above**

Third Step in Safe

Construction

Portable HEPA Filter

- By exhausting air out of the construction site through a HEPA filter negative pressure can be created within the construction space

- Several options for exhaust

- out a window
- out of the barrier
- out of a wall

- Best if exhaust can go out of window



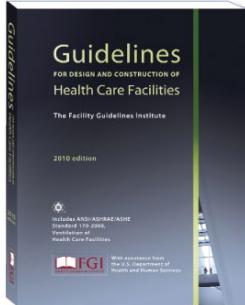
Post Construction

- Construction zone must be thoroughly cleaned
 - before barrier removed
 - allow time for dust to settle and then clean again before stocking the area
- Sharps containers installed
- Soap dispenser and towel dispensers filled and functioning
- Open closed ducts, change filters
- Verify that air balancing is completed and functioning according to specifications in construction area and adjoining spaces
- Ensure engineering specifications are met when commissioning (written report)

Healthcare Facility Design Goals

- First, do no harm
- Meet needs of functional program



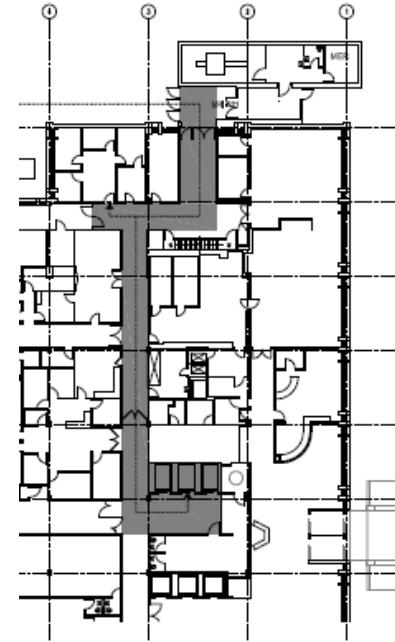


Regulations

- States may have individual requirements
- Facilities Guidelines Institute
 - Publish "Guidelines for Design and Construction of Health Care Facilities" (2010)
 - New edition due in 2014

Joint Commission

- “When planning for demolition, construction or renovation, the hospital conducts a **preconstruction risk assessment** for air quality requirements, infection control, utility requirements, noise, vibration and other hazards that affect care, treatment and services



Infection Control Risk Assessment (ICRA)

- Multi-disciplinary team
- Design
- Construction
- Compliance
- Risk mitigation

Design

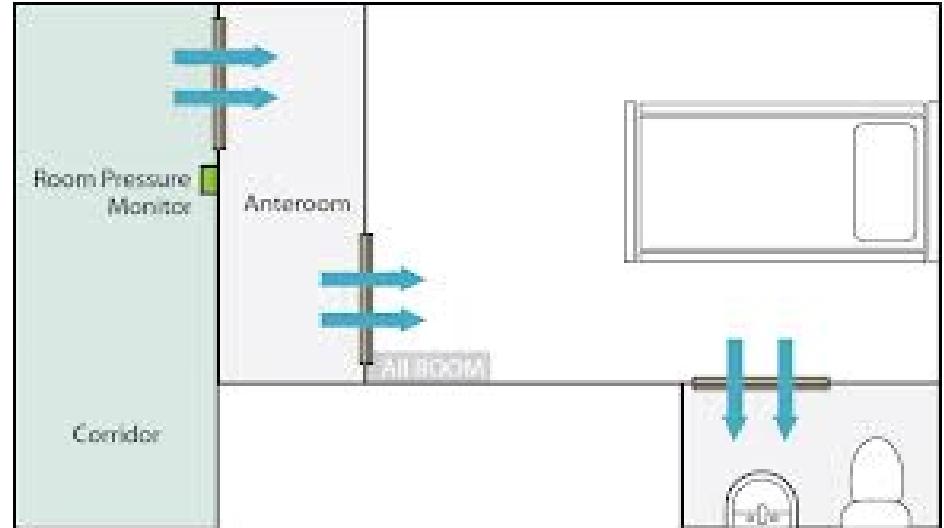
- **Number, location and type of:**
 - Airborne infection isolation and Protective environment rooms
 - These cannot be switchable
 - Hand washing sinks, sanitizer dispensers
 - Eyewash stations and deluge showers
- HVAC systems to meet functional needs -e.g. Procedure rooms, laboratories etc.
- Water systems to limit legionella

Air Requirements

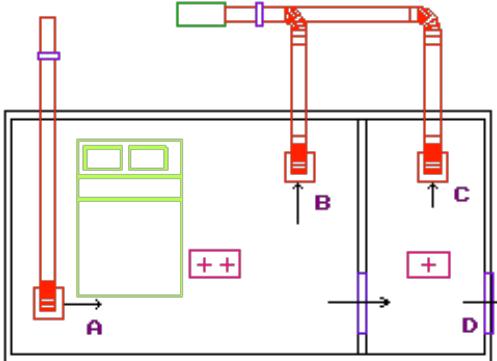


- General Principles - Clean to Dirty
 - Dirty areas (janitors closets, decontamination rooms, areas for bronchoscopy, laboratory with specimens) are negative pressure
 - Procedure areas, pharmacy compounding, sterile supply areas are positive pressure
- Best Reference is ANSI/ASHRAE/ASHE Standard 170-2008 Table 7-1

Airborne Isolation (AIIR)



- Negative Pressure = Air flows from corridor to (anteroom if present) to patient room
 - 12 air changes/hour with 2 outside air changes/hour
- Exhaust air grills in ceiling over patient head or on wall at head of bed

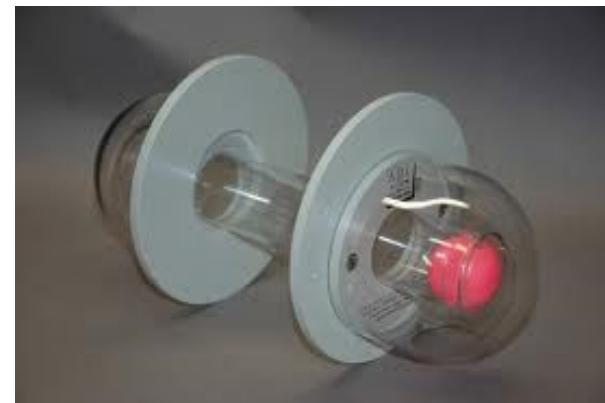


Protective Environment (PE)

Positive Pressure

- Positive Pressure = Cleanest (patient area) to less clean
- Supply air to PE room is HEPA filtered just before entering the room or suite of rooms
 - 12 Air changes/ hour including 2 outside air changes/ hour
- Permanently installed visual mechanism to constantly monitor pressure status of the room
- **Anteroom not required per Facilities Guidelines, but does mitigate against pressure changes**

Visual Pressure Monitoring Devices





Sinks



- Hands free

Wrist blades, knee control, electronic eye

Avoid aerators as these promote water dispersal

- Electronic eye:

Save water, are popular with patients



May be more prone to legionella contamination

Must consider wiring to emergency power

Sydnor ER et al. Electronic-eye faucets: Legionella species contamination in healthcare settings. [ICHE](#). 2012 Mar;33(3):235-40.

Hargreaves J et al. Bacterial contamination associated with electronic faucets: a new risk for healthcare facilities. ICHE 2001 Apr 22(4);202-5

Excretions/Secretions/Waste

- Everyday concern
- May contaminate environment
- Staff safety concern



Supply Storage

- Provide supplies within work flow while minimizing risk of cross contamination
- Just outside the patient room
- Outside to inside access



Staff Support Areas





Patient/Family Space



- For patients and families
- Match needs of functional program and care delivery model
- Assess length of stay/needs
 - Example: If you offer washer/dryer, then consider clothes storage space
 - CLUTTER PREVENTION



Finishes

- Easily cleanable with hospital disinfectants
- Not prone to soiling with extensive use (e.g. vinyl upholstery vs. cloth)





Furnishings



- Cleanable/rust resistant
- Designed to reduce clutter
- Support patient mobility/independence
- Bed bug ‘resistant’

(limit crevices, assure no tears in upholstery)



Educational Material for Construction Workers

The image shows the front cover of a booklet. The top half has a red background with three yellow stylized 'W' or wave-like shapes. The title 'Infection Control During Construction' is printed in white serif font. The bottom half has an orange background. It contains two sections of contact information: 'General Questions' and 'Campus-Specific Questions', each with a list of names and phone numbers. At the bottom, there is a logo for NewYork-Presbyterian.

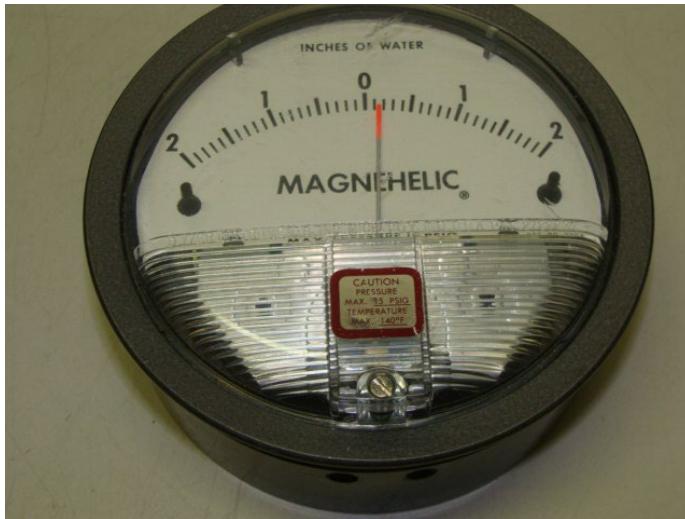
**Infection Control
During Construction**

General Questions:
Richard Vogel, MS
Infection Control Specialist
917 842-3261

Campus-Specific Questions:
NYP/AH: 212 932-5219
NYP/CU: 212 305-7025
MSCHONY: 212 305-7025
NYP/WC: 212 746-1754
NYP/WD: 914 997-4377

 **NewYork-Presbyterian**
The University Hospital of Columbia and Cornell

Continuous Monitoring of Negative Pressure



Quick Set Up Dust Barrier



Extend **spring-loaded pole**, locking in place between floor and ceiling.

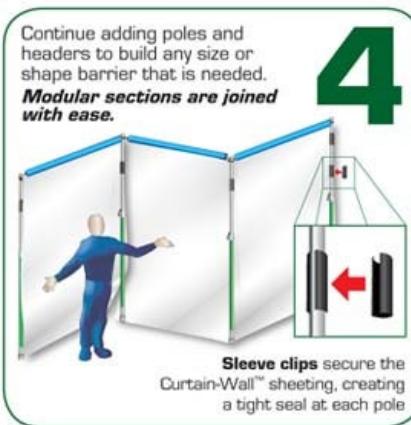


Hook the Curtain-Wall™ **header** to top of pole.

2



Place pole at other end of header, and extend it until the header is tight against the ceiling.



Continue adding poles and headers to build any size or shape barrier that is needed.
Modular sections are joined with ease.

4

Sleeve clips secure the Curtain-Wall™ sheeting, creating a tight seal at each pole

Class I

During projectUpon completionExecute work by methods to minimize raising dust from construction operations• Immediately replace a ceiling tile displaced for visual inspectionClean work area upon completion of task

Class

II Upon completion During project

Provide active means to prevent airborne dust from dispersing into the atmosphere

Water mist work surfaces to control dust while cutting

Seal unused doors with duct tape

Block off and seal air vents

Place dust mat at entrance and exit of work area

Remove or isolate HVAC system in areas where work is being performed

Wipe work surfaces with

Class

III During project Upon completion

Remove or isolate HVAC system in area where work is being done to prevent contamination of duct systemComplete all critical barriers, e.g., sheetrock, plywood, plastic to seal area from non-work area or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA vacuum for vacuuming prior to exit) before construction begins.Maintain negative air pressure within work site utilizing HEPA-equipped air filtration unitsContain construction waste before transport in tightly covered containersCover transport receptacles or carts. Tape covering unless lid is solid.Do not remove barriers from work area until completed project is inspected by the Infection Control or Safety Officer or representative and they are thoroughly cleaned by EVS staff.Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction.Vacuum work area with HEPA-filtered vacuums.Wet mop area with cleaner/disinfectant.Upon completion, restore HVAC system where work was performed.

Class IV During project Upon completion

Isolate HVAC system in area where work is being done to prevent contamination of duct system. Complete all critical barriers, e.g. sheetrock, plywood, plastic to seal area from non-work area or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA vacuum for vacuuming prior to exit) before construction begins. Maintain negative air pressure within work site utilizing HEPA-equipped air filtration units. Seal holes, pipes, conduits, and punctures. Construct anteroom and require all personnel to pass through this room so they can be vacuumed using a HEPA vacuum cleaner before leaving work site or have them wear cloth or paper coveralls that are removed each time they leave work site. All personnel entering work site are required to wear shoe covers. Shoe covers must be changed each time the worker exits the work area. Do not remove barriers from work area until completed project is inspected by the Infection Control or Safety Officer or representative and they are thoroughly cleaned by CVMC EVS staff. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction. Contain construction waste before transport in tightly covered containers. Cover transport receptacles or carts. Tape covering unless solid. Vacuum work area with HEPA-filtered vacuums. Wet mop area with cleaner/disinfectant. Upon completion, restore HVAC system where work was performed.

References/resources

Vogel, Richard, MS, CIC, et. al. (2015). Infection Prevention Manual for Construction and Renovation. Tools | ASHE. (n.d.). Retrieved March 10, 2016, from APIC list serve APIC text

THANK
YOU

www.lhi-me.com



Logistics for Healthcare Improvement

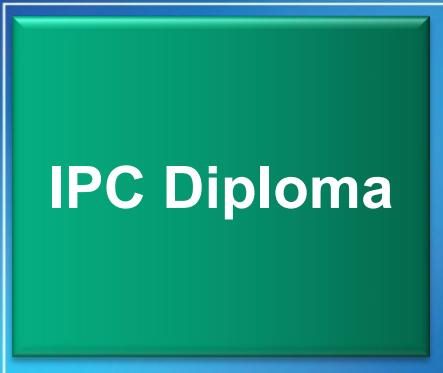
2nd floor, Ibn Sina Bldg 27, Block C

Dubai Healthcare City, Dubai, UAE

info@lhi-me.com



A Destiny of Success



TRAINING
EDUCATION
QUALITY IMPROVEMENT
HEALTHCARE EXCELLENCE



Public disease prevention



Overview

Format

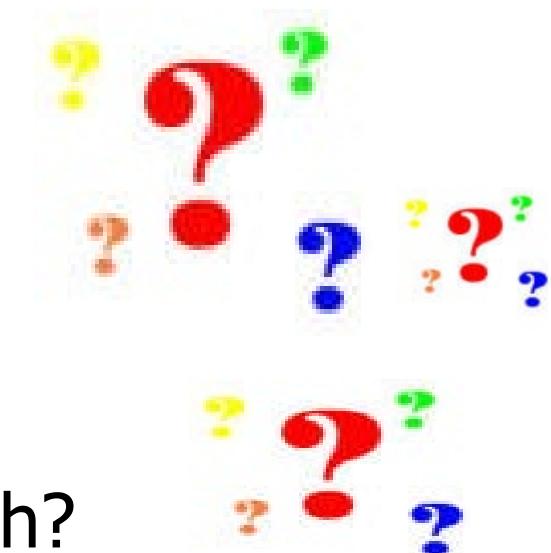
Questions to be addressed:

What is public health?

What is a public health system?

Why take a public health approach?

Can public health make a difference?



What is Public Health?

Definitions vary

Key terms

Population health

Prevention



Public Health in the US



~Vision~



Healthy People in Healthy Communities



~Mission~

Promote physical and mental health
and

Prevent disease, injury, disability

What Is Population Health?

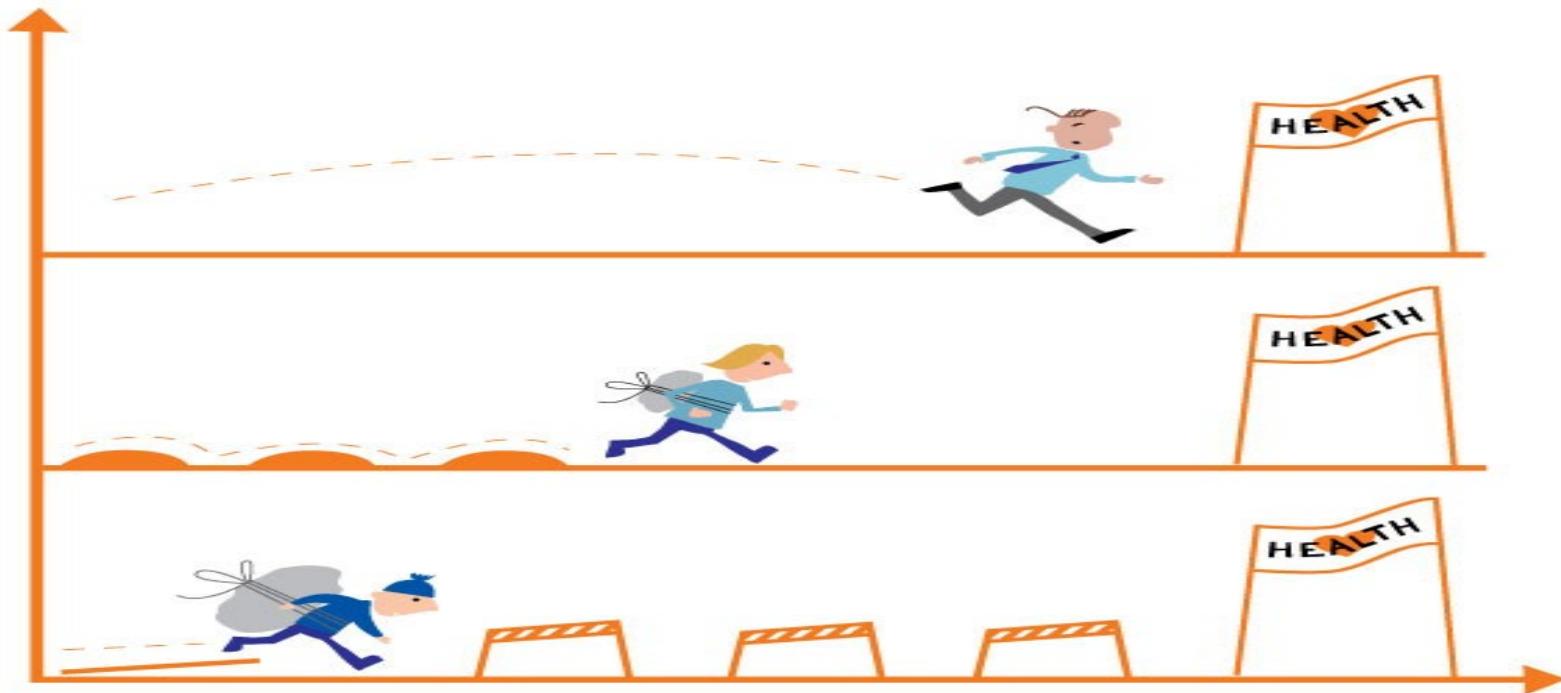


An approach to *health* that aims to improve the *health* of an entire human *population*

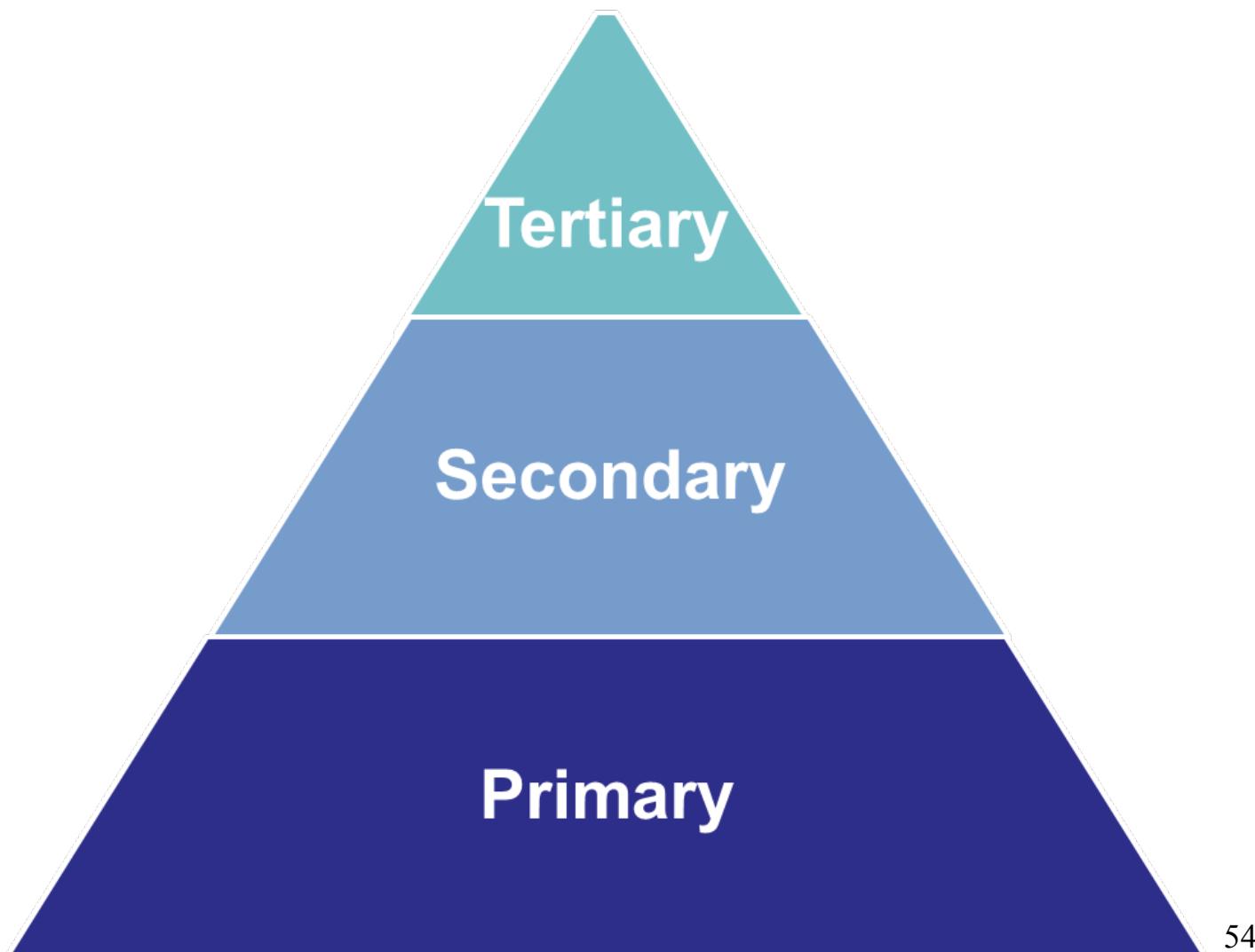
Who Is the Population?



Population Health \neq Distribution of Health



What is Prevention?



Primary Prevention

Designed to prevent a disease or condition from occurring in the first place

Examples: immunization, physical activity to reduce risk of cardiovascular disease

Secondary Prevention

Identify a disease at its earliest stage so that prompt and appropriate management can be initiated.

Example: A person gets a mammogram to detect breast cancer or gets screened for glaucoma.

Successful secondary prevention reduces the impact of the disease.

Tertiary Prevention

Reduce or minimize the consequences of a disease once it has developed.

Example: most medical interventions

Eliminate, or at least delay, the onset of complications and disability due to the disease.

What Are Population-Based Interventions?

Aimed at disease prevention and health promotion

Affects an entire population or populations at risk

Targets underlying risks and environmental factors



Population-Based Health

Level of intervention ...
population at risk



Levels of Intervention

Systems

Activities of organizations and government

Community

Community or subgroups at risk

Individuals and families

Individuals and families at risk

Level of Intervention: Systems

Requires action on a *large scale* to address a given problem

Creates *change* in organizations, policies, laws, and structures

Long-lasting way to impact individuals

Example: statewide smoke-free air law

Level of Intervention: Community

Focus on *entire community* or groups of people within the community

Forms *partnerships within community* organizations and groups

Changes *community norms, attitudes, awareness, practices and behaviors*

Example: social marketing campaign

Level of Intervention: Individual and Family

Member of an at-risk population

Protect communities from *threats to health* posed by individuals

Changes *knowledge, attitudes, skills, and behaviors*

Example: promoting
breastfeeding among families
in the WIC Program

Women, Infants and Children



Population-Based Interventions

Evidence-based

Best practices

Promising practices

*Resource: What Works? Policies and
Programs to Improve Wisconsin's Health"*

<http://WhatWorksForHealth.wisc.edu>

Levels of Intervention Activity

Systems

Activities of organizations and government

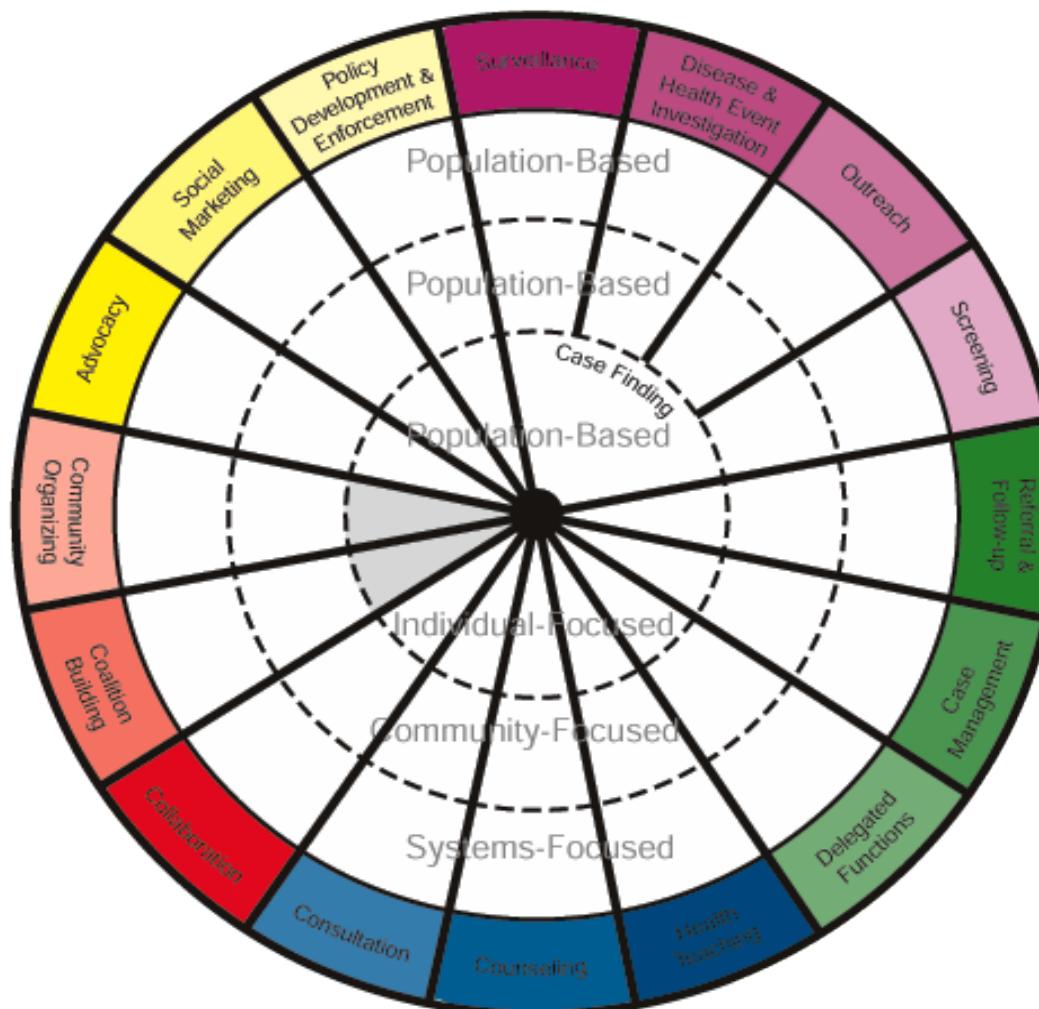
Community

Community or subgroups at risk

Individuals and families

Individuals and families at risk

Public Health Interventions



Source: http://www.health.state.mn.us/divs/cfh/ophp/resources/docs/phinterventions_manual2001.pdf

What Do We Do?



Public Health
Prevent. Promote. Protect.

Public Health...



Prevents epidemics and the spread of disease

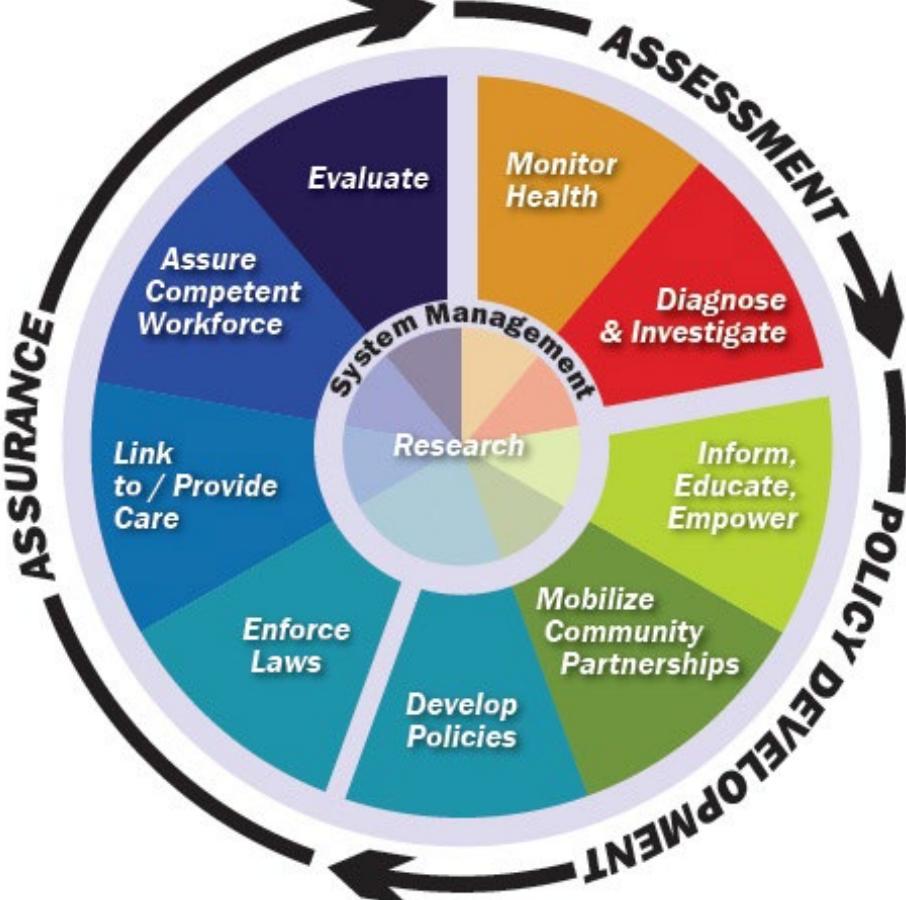


Protects against environmental hazards



Responds to disasters and assists communities in recovery

Core Functions and 10 Essential Public Health Services



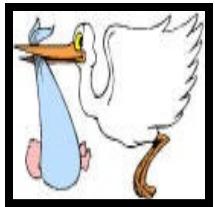
Public Health...



Prevents injuries



Promotes healthy behaviors



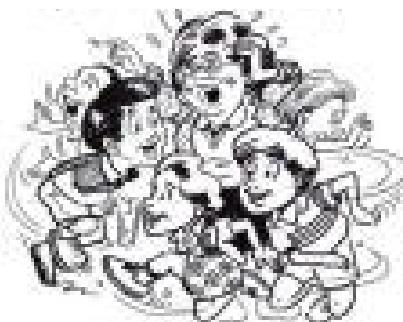
Assures the quality and accessibility
of health services

Core Function 1: Assessment

Essential Service One: Monitor health status to identify and solve community health problems

Essential Service Two: Diagnose and investigate health problems and health hazards in the community.

A Public Health System



Who?

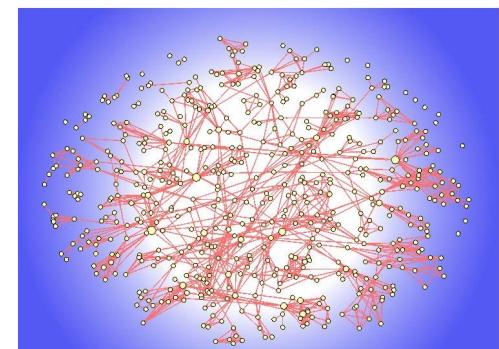
Public entities

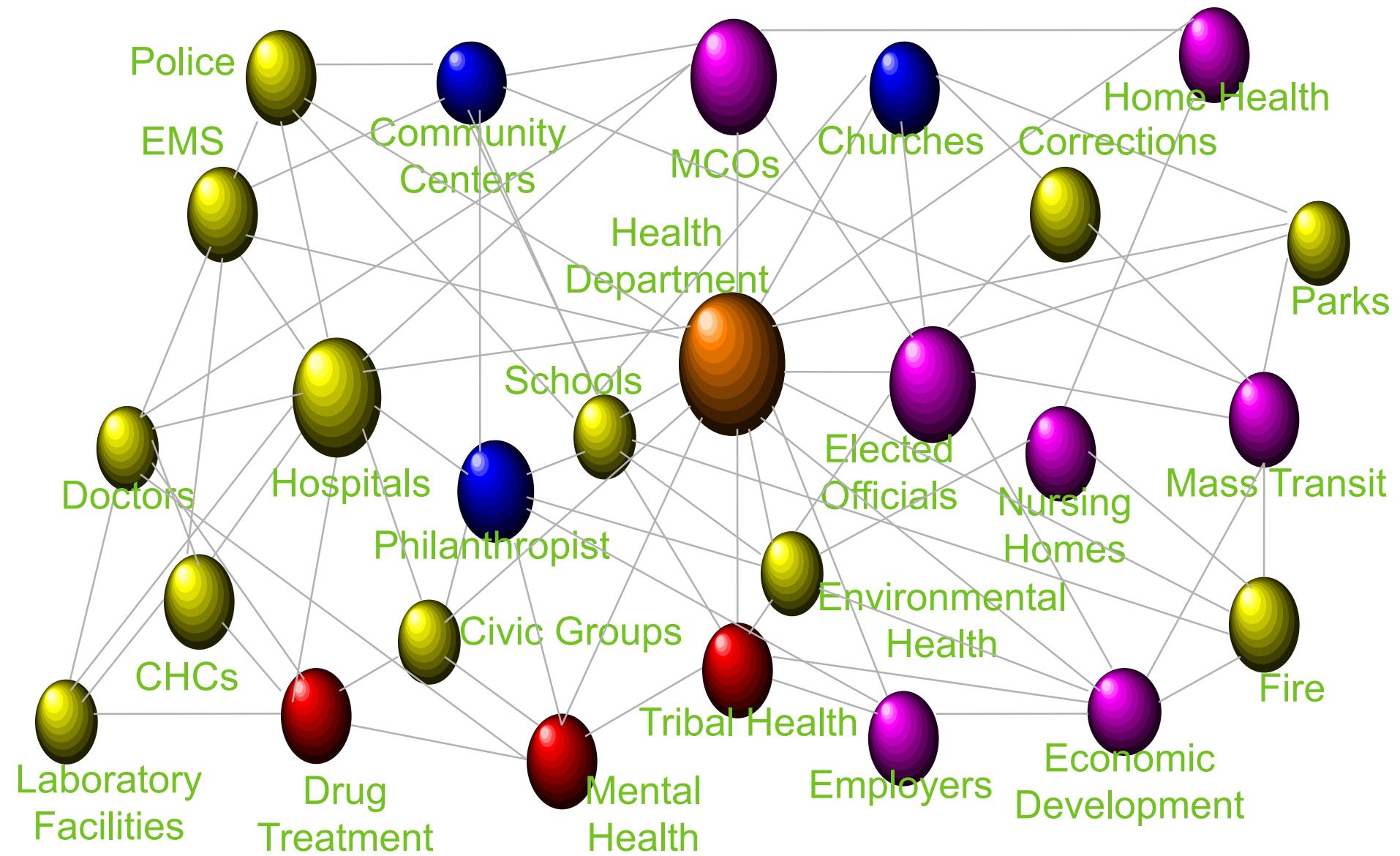
Private entities

Voluntary entities

What?

A network





Workforce

Diverse and Multidisciplinary Examples...



→ Biostatisticians



→ Dieticians

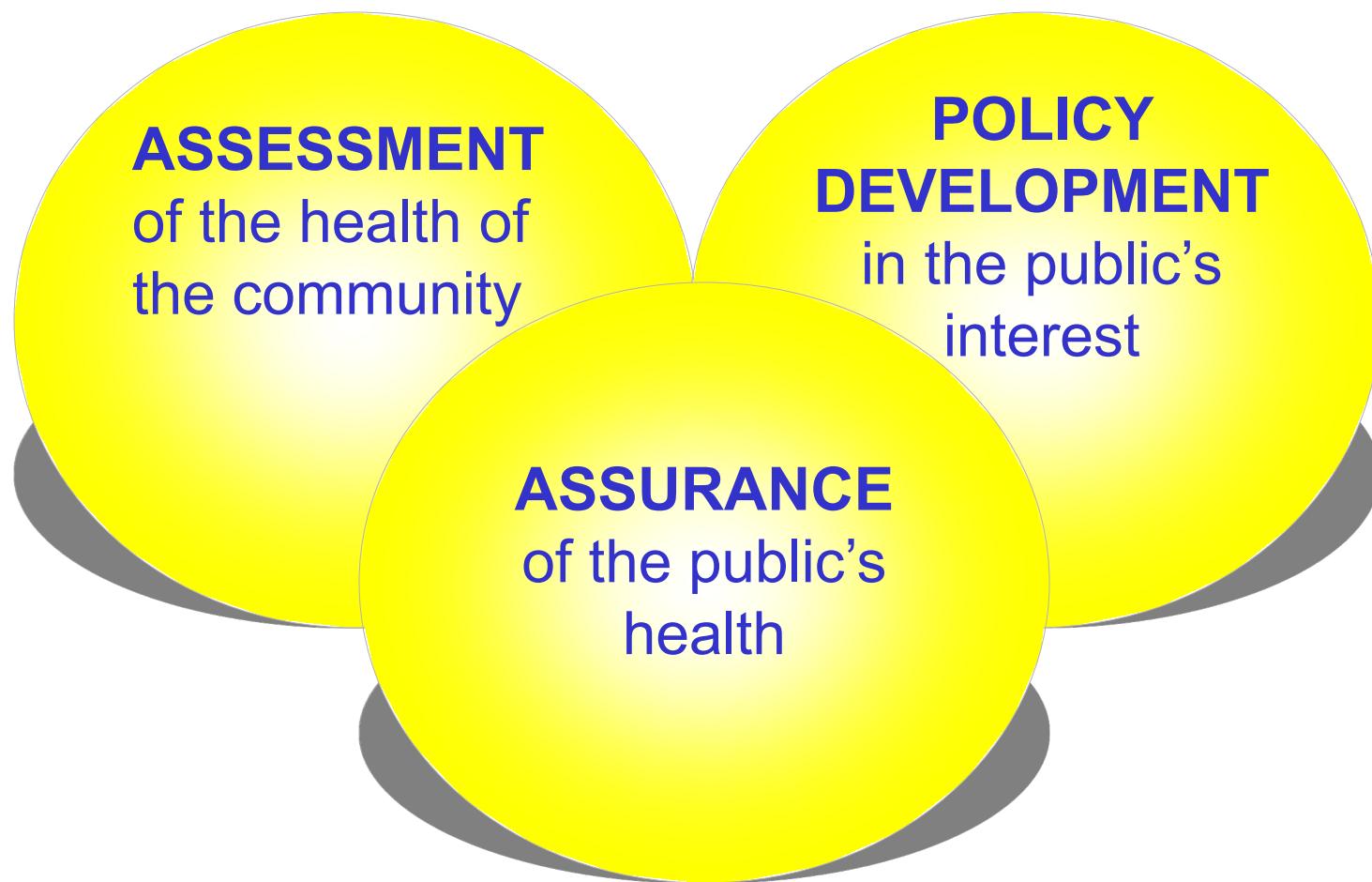


→ Environmental Health Specialists



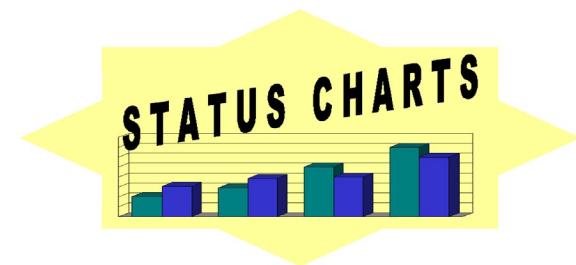
→ Behavioral Health Specialists

Core Components



10 Essential Services

**1. Monitor health status
to identify community
health problems**

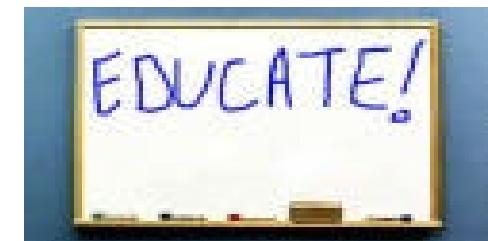


**2. Diagnose and investigate
health problems and health
hazards in the community**



10 Essential Services

3. Inform, educate, and empower people about health issues



4. Mobilize community partnerships to identify and solve health problems

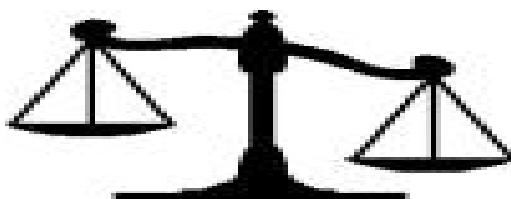


10 Essential Services

5. Develop policies and plans that support health efforts

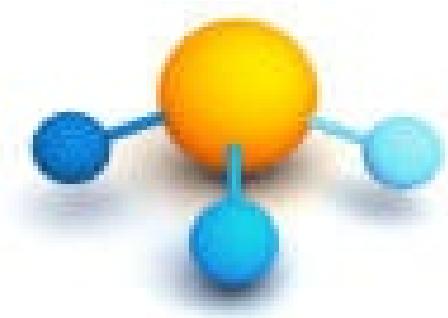


6. Enforce laws and regulations that protect health and ensure safety



10 Essential Services

**7. Link people to personnel
health services and
assure the provision of
health care**



**8. Assure a competent public health
and health care
workforce**



10 Essential Services

**9. Evaluate the effectiveness,
accessibility, and quality
of services**



**10. Research for new insights and
innovative solutions to
health problems**

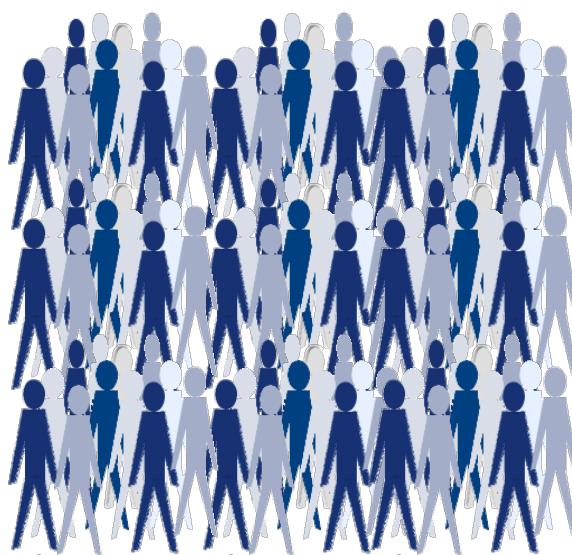


Public Health Approach

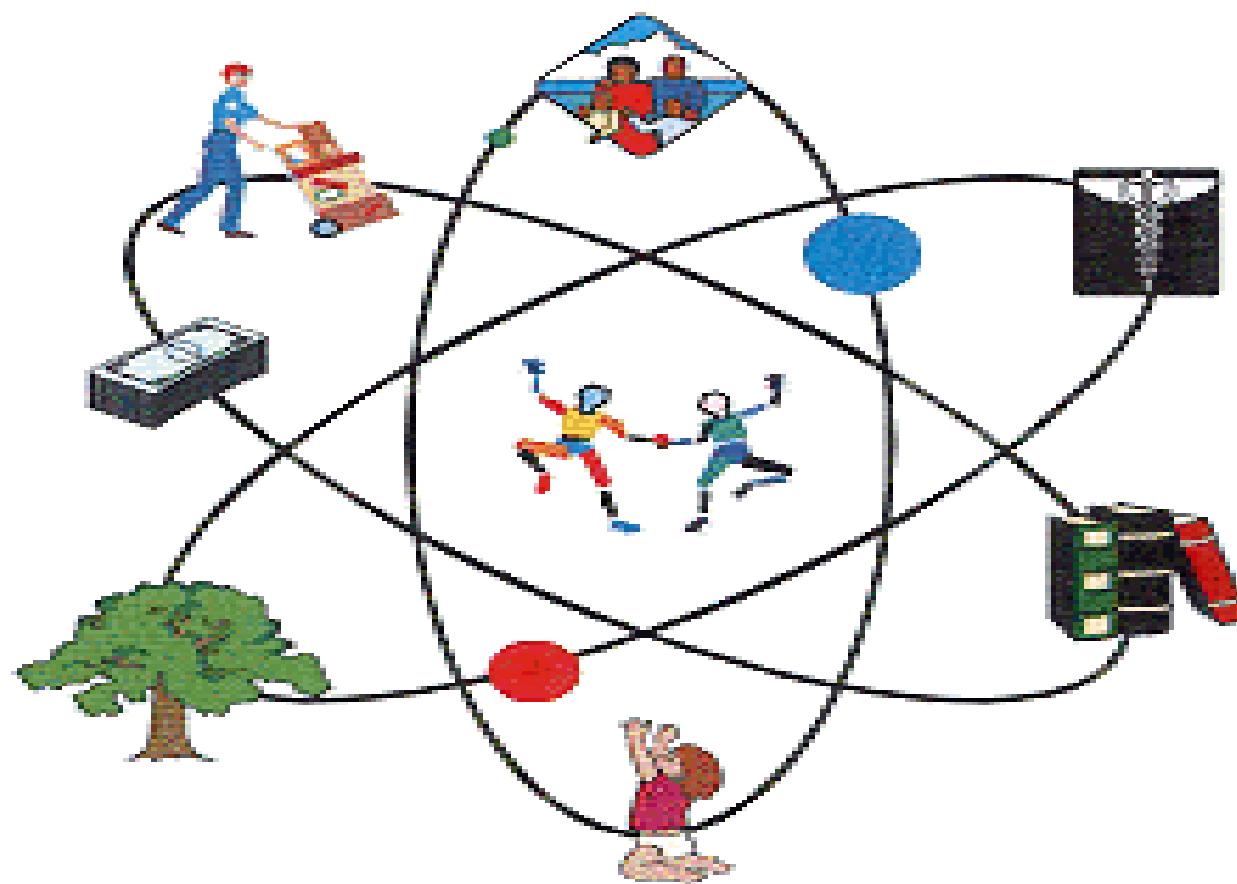
**Public Health
Model**

Versus

**Medical
Model**

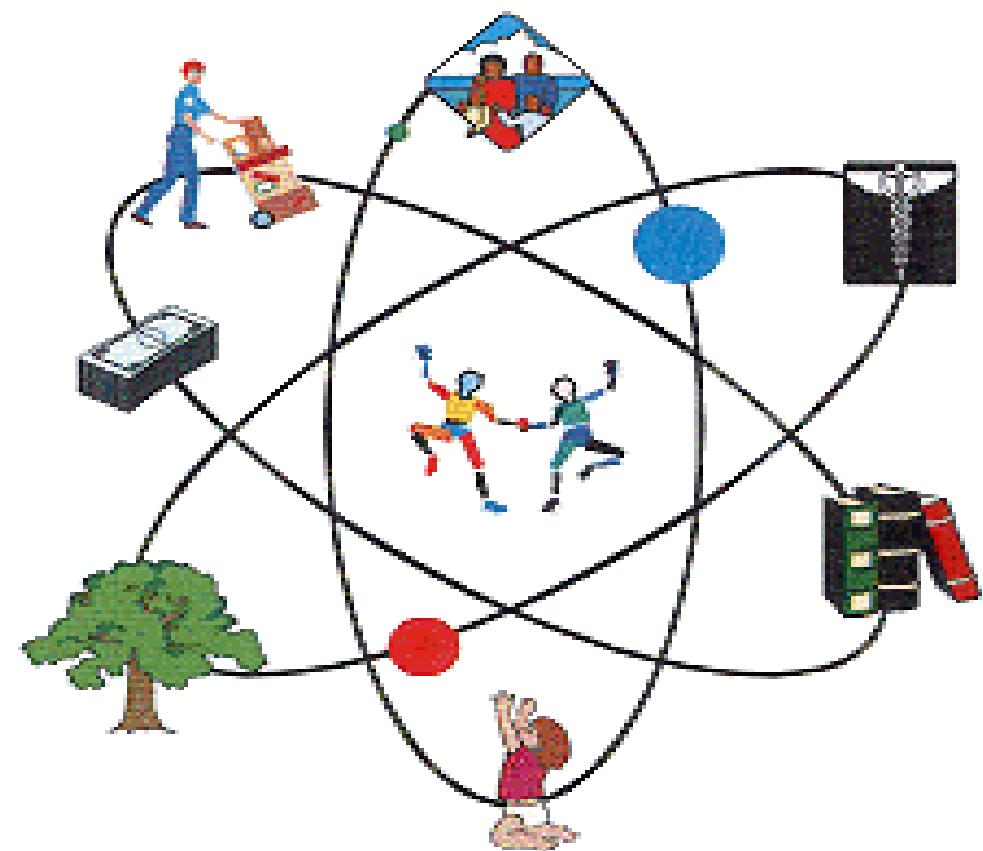


Determinants of Health



Determinants of Health

- **Genetic**
- **Behavioral**
- **Social**
- **Environmental**
- **Personal health care**



Achievements



- **Vaccination**
- **Safer Workplaces**
- **Safer & Healthier Food**
- **Motor Vehicle Safety**



Achievements



- **Control of Infectious Diseases**



- **Family Planning**

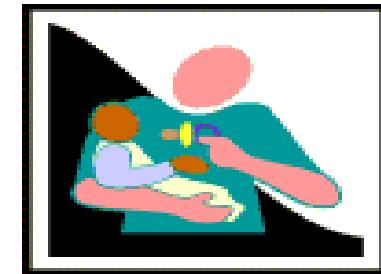


- **Decline in Deaths from Heart Disease & Stroke**

Achievements



- **Recognition of Tobacco Use as a Health Hazard**



- **Healthier Mothers and Babies**



- **Fluoridation of Drinking Water**



Public Health: Past, Present and Future

Achievements of the 20th century:

Vaccinations

Improved sanitation



Reduction in deaths from
and

measles

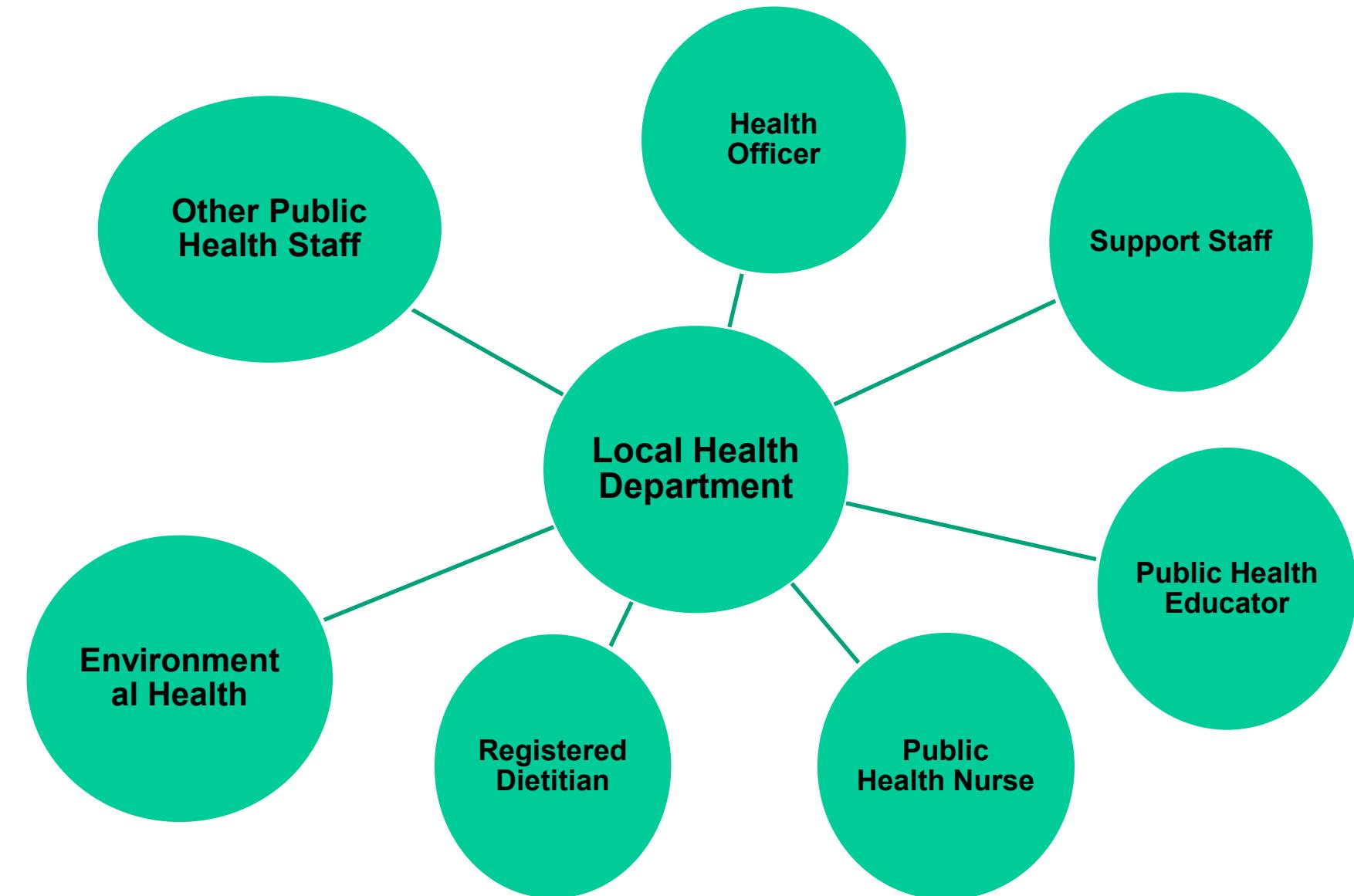
and babies

Reduction in

Emerging threats of the 21st century:

- Chronic diseases
- H1N1
- New and re-emerging infectious diseases
- Natural disasters
- [List challenges specific to your community]





Welcome to Your New Role in Public Health!



THANK
YOU

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