Public Health Nursing Guide to Infectious Disease Surveillance & Investigation

NEPHTC New England Public Health Training Center
MAPHN Massachusetts Association of Public Health Nurses

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There will be three slides today which will require some input from you:
A poll
A Word Cloud
A quick 4 question survey for NEPHTC

The links to the first two will be put in the chat box
At the conclusion of the program, there is also an evaluation sheet which when completed provides the CEU for nurses.
Disclosure: This presentation is supported through a grant. I have no financial interest or relationship to disclose.
Learning Objectives:

Navigate the process of investigating reportable diseases, recognize the capacities of the MDPH MAVEN network tools, explore tips for effective disease investigation, tracing, outreach and response for PHNs conducting disease investigations.
*Each individual city and town has its own independent public health departments*
Regulation: 105 CMR 300.00
https://www.mass.gov/regulations/105-CMR-300

MAPHN Public Health Nursing Guidebook References
https://www.maphn.org

Public Health Fact Sheets
https://www.mass.gov/fact-sheets-on-infectious-diseases

MAVEN Training
http://www.maven-help.maventrainingsite.com/

Core Competencies For Public Health Professionals
https://www.mass.gov/doc/105-cmr-300

105 CMR

365: Standards of management of TB outside hospitals
365.200: Case management
365.600: Discharge planning from hospital into out-patient setting

MGL Chapter 111 Section 94A-C: Compulsory hospitalization of person with infectious TB
About Public Health Nursing
Public health nursing is the practice of promoting and protecting the health of populations using knowledge from nursing and social and public health sciences.

https://www.apha.org/apha-communities/member-sections/public-health-nursing/who-we-are
MASSACHUSETTS ASSOCIATION OF PUBLIC HEALTH NURSES

CELEBRATES 100 YEARS OF PUBLIC HEALTH NURSING
IN MASSACHUSETTS 1910-2010

“The work we are speaking of has to do with maintaining health by removing things which disturb it...dirt, drink, diet, damp, and drains.” - Florence Nightingale

1910-1920
- General Motors adds a lens compound to windshield to prevent dust on the windshield.
- First federal money allocated for health and social welfare
- Frontier Nursing founded 1912
- 1913: The Framingham Study begins to show the relationship between mortality and heart disease

1920-1930
- 1921: School lunch program established
- 1922: The Red Cross begins its red gum campaign to prevent child mortality

1930-1940
- 1931: The first public health nurse agency in Maine is established
- 1932: The first state health department

1940-1950
- 1946: The Framingham Heart Study begins to study the risks factors and natural history of coronary heart disease over the next 30-40 years

1950-1960
- 1956: March of Dimes
- 1958: The first polio vaccine becomes available

1960-1970
- 1960: The first state health department
- 1963: The first state health department

1970-1980
- 1975: Medicaid and Medicare are established
- 1978: The first state health department

1980-1990
- 1982: The first state health department
- 1985: The first state health department

1990-2000
- 1990: The first state health department
- 1995: The first state health department

2000-2010
- 2000: The first state health department

Public health sources: Wells, community pools, public showers, public swimming holes and lakes have water tests done regularly and for good reason.

Massachusetts Public Health Nurses provide surveillance and disease investigations for mosquito borne diseases including Eastern Equine Encephalitis.

"Our basic idea was that the nurse's work was not a specific disease, but her relationship to the community and her organization with the neighborhood should constitute the main point for a universal service to the region.” - Anna Lown

Massachusetts Public Health Nurses

visit us at MAPHN.COM
## The Cycle of Infectious Disease

<table>
<thead>
<tr>
<th>Promote and Prevent</th>
<th>Contain</th>
<th>Restore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>Case finding</td>
<td>Lab specimens</td>
</tr>
<tr>
<td>Review of medical records</td>
<td>Close contacts</td>
<td>Immunize</td>
</tr>
<tr>
<td>Health and wellness clinics</td>
<td>Immunization</td>
<td>Educate</td>
</tr>
<tr>
<td>BOLO / Health alerts</td>
<td>Restrictions</td>
<td>Eradicate</td>
</tr>
<tr>
<td></td>
<td>Special precautions</td>
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<td></td>
<td>Protect others</td>
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Control of Infectious Diseases

Pertussis in Massachusetts
1910 – 2008

- 1949: Pertussis vaccine introduced
- 1967: Pertussis vaccine added to school requirements
- 1996: Acellular pertussis vaccine licensed
- 2005: Tdap licensed for ≥10 y/o

Inset: 1985 - 2008
2005: Tdap licensed for ≥10 y/o
VPDs

Measles, Mumps, Rubella, Polio, Chicken Pox, Meningococcal Meningitis, Influenza, Human Papillomavirus, Pertussis, Pneumonia, Hepatitis A, Hepatitis B, Tetanus, Diphtheria, Yellow Fever, Smallpox, Japanese Encephalitis, Rotavirus
Once upon a time in 1854, John Snow removed the handle of a water pump...
Then Came MAVEN...

Infectious disease surveillance data collected by the Bureau of Infectious Disease and Laboratory Sciences (BIDLS) are maintained in the *Massachusetts Virtual Epidemiologic Network* (MAVEN).
The Guide To Surveillance Reporting and Control

COMMUNICABLE AND OTHER INFECTIOUS DISEASES REPORTABLE IN MASSACHUSETTS BY HEALTHCARE PROVIDERS

*Reportable infectious diseases and conditions are not limited to those designated below. This list includes only those which are primarily reportable by clinicians. A full list of reportable diseases in Massachusetts is detailed in 105 CMR 300.100.

REPORT IMMEDIATELY BY PHONE!
This includes suspected and confirmed cases.

All cases should be reported to your local board of health; if unavailable, call the Massachusetts Department of Public Health.

Telephone: (617) 983-6800  Confidential Fax: (617) 983-6813

REPORT PROMPTLY (WITHIN 24 HOURS)
This includes suspected and confirmed cases.

* Isolates should be submitted to the State Public Health Laboratory.

- Anthrax
- Any case of an unusual illness thought to have public health implications
- Any cluster/outbreak of illness, including but not limited to foodborne illness
- Botulism
- Brucellosis
- Cholera
- Chikungunya virus
- Creutzfeldt-Jakob disease (CJD) and variant CJD
- Diphtheria
- Encephalitis, any cause
- Foodborne illness due to toxins (including mushroom toxins, ciguatera toxins, scombroidosis, tetrotoxin, paralytic shellfish toxin and amnesic shellfish toxin, staphylococcal enterotoxin and others)
- Hansen's disease (leprosy)
- Hemolytic uremic syndrome
- Hepatitis A (gut only)
- Hepatitis B in pregnant women
- Hepatitis syndrome, acute possibly infectious
- Influenza, pediatric deaths (<15 years old)
- Infection due to novel influenza A viruses
- Jamestown Canyon virus
- Lymphocytic choriomeningitis
- Malaria
- Measles
- Meningitis, bacterial, community acquired
- Meningitis, viral (aseptic), and other infectious (non-bacterial)
- Meningococcal disease, invasive (Neisseria meningitidis)
- Mumps
- Pertussis
- Plague
- Polio
- Powassan
- Pox virus infections in humans, including variola (smallpox), monkeypox, vaccinia, and other orthopox or parapox viruses
- Rabies in humans
- Respiratory infection thought to be due to any novel coronavirus including SARS and MERS
- Rubeola
- Rocky Mountain spotted fever
- Rubella
- Tetanus
- Toxic shock syndrome
- Typhoid fever
- Typhus
- Varicella (chickenpox)
- Viral hemorrhagic fevers

Important Note: MDH - In an official capacity, the local boards of health may designate a person as the official public health contact person in the event of a reportable disease. This person must report all cases to the appropriate health authority.

COMMUNICABLE AND OTHER INFECTIOUS DISEASES REPORTABLE IN MASSACHUSETTS

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Reportable Diseases Primarily Detected Through Laboratory Testing

Please work with the laboratories you utilize to assure complete reporting:

- Anaplasmosis
- Amebiasis
- Babesiosis
- Campylobacteriosis
- Cholera
- Cryptosporidiosis
- Cysticercosis
- Dengue
- Eastern equine encephalitis
- Ehrlichiosis
- Escherichia coli O157:H7
- Enteroviruses (from CFUS)
- Giardiasis
- Glanders
- Legionellosis
- Listeriosis
- Lyme disease
- Melioidosis
- Mumps
- Norovirus
- Pneumococcal disease, invasive (Streptococcus pneumoniae) in patients <18 years old
- Pneumococcal disease, invasive, penicillin-resistant
- Salmonellosis
- Shiga toxin-producing organisms
- Shigelllosis
- Staphylococcus aureus, methicillin-resistant (MRSA), invasive
- Staphylococcus aureus, vancomycin-intermediate (VISA) and vancomycin-resistant (VRSA)
- Tetanus

Report Directly to the Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences

305 South Street, Boston, MA 02130
Tel: (617) 983-6801  Confidential Fax: (617) 983-6813

Sexually Transmitted Infections
- Chancroid
- Chlamydial infections (genital)
- Gonorrhea
- Gonorrhea resistant to Ceftriaxone
- Herpes, neonatal (onset within 60 days after birth)
- HIV infection and AIDS
- Acute HIV infection
- Lymphogranuloma venereum
- Syphilis
- Ophthalmia neonatorum
- Pneumocystis
- Pelvic inflammatory disease

Animal bites should be reported immediately to the designated local authority.
Sample Poll: Do you monitor disease counts in your community to help drive or to direct your health education & outreach initiatives?

YES/NO
NATIONAL DISEASE REPORTING PATHWAY

- Healthcare Providers
- Institutions
- Others
- Labs

Local Boards of Health

State Health Department

CDC
MDPH

Public Health Nurse

SLI to PHN + PCR for Pertussis

Receive confirmation with copy of lab, repeats, submission receipts

Contact case and school: exclude students

Call school: identify VCC, exclusions

Case & Contacts: family, significant others, co-workers

Arrange for immunization at BOH

Send school sample letter to go home

Call pediatrician: vaccination history

Report to school on exclusions

Complete confidential case report

Pediatric Providers

Schools

Others

Labs

Communications during COVID:

Employers for I & Q
Employees for I & O
School Nurses
Occupational Health
Coaches
Independent Operators (i.e.: salons, etc.)
Churches
Public Offices
CIC
Apartment Managers
Shelters
Gyms
Travel Offices
Testing Centers
Count it!
Trace it!
Map it!

Please respond with an infectious disease (non-COVID) that is one of the most frequent in your community.
How Did I Get This?

DIRECT TRANSMISSION

Person to Person
  Bloodborne
  Respiratory
  Bodily Secretions

Animal to Person
  Bites/Stings/Scratches
  Waste

Mother to Child
  Placenta
  Birth

INDIRECT TRANSMISSION

Contact with an inanimate object
Contact with an organic object
Challenges to Communicable/Infectious Disease and Follow Up Investigations

- Public Opinions: value of a vaccine is inversely proportional to the disease level
- Public Policy & Budgets
- Reduced Public Health Workforce
- Fear of reporting
- Insufficient information
- Lack of timely reporting from providers
- HIPAA requirements
- Lack of disclosure
- Communication & Language
- Health Messaging
Resources at your fingertips!
Example: Hepatitis A
Helpful Tips
Hollywood Helps…. Sort of…

The Stand
*And The Band Played On*
Normal Heart
Dallas Buyers Club
*Contagion*
Outbreak
28 Days Later
The Andromeda Strain
Quarantine
The Last of Us (fungus)
The Great Influenza
Clearing The Plains
Pale Rider
Blindness
TB and LTBI

Risks of Untreated Inactive TB: Without treatment, 1 in 10 people with inactive TB will get sick with active TB disease, which can then potentially infect others.

MAVEN Super Heroes!

Hillary Johnson, MHS
Senior Epidemiology Advisor to Local Health, Division of Epidemiology

Scott Troppy, MPH, PMP, CIC
Senior Epidemiologist – MAVEN User Management & Data Visualization Lead

Kate Hamdan, MPH
Surveillance Epidemiologist, MAVEN Training Team Lead

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Epidemiologist II – Pandemic Response Coordinator, Division of Epidemiology
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Core Competencies For Public Health Professionals
• 25th Annual MAPHN Conference at Marlborough Holiday Inn and Suites
• Wednesday May 3rd - Thursday May 4th, 2023!
• Early bird registration is open!
• Hotel Information / reservations (discounted block available)
• Call For Posters!

www.maphn.org
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Questions