The Relationship Between Public Health and Clinical Practice

Prathit A. Kulkarni, M.D.
Epidemic Intelligence Service Officer
New Jersey Department of Health

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Overview

• Why an important topic?
• How medical practitioners are important to public health
• How public health can be an asset to practitioners
• Regulations and recommendations for best practices for clinics and hospitals
• Examples
Importance of Connection between Public Health and Clinical Medicine
How Medical Practitioners are Vital for Public Health

• On the front lines
  • Therefore, often first ones to observe illnesses or detect an important condition
    • Outbreaks of different diseases
    • Anthrax cases spread via mail, EV D-68 last year in Midwest → around country

• Provide direct care for patients

• First point of contact for patients with medical system and can discuss significance of having been diagnosed with a condition relevant to public health → cooperation with public health vital for public safety

• Crucial for initial and ongoing surveillance
  • Example: Ebola

• Implement public health recommendations on a daily basis
  • Example: Vaccines
How Public Health Can be an Asset to Clinicians

• Can assist with handling logistics of public health investigations, particular those involving a large number of people
• Can recommend necessary and appropriate testing for particular diseases
• Can help think through complex clinical situations where a disease of public health concern is a possibility
• Can facilitate laboratory testing at state public health laboratory or at CDC for tests which are not routinely available
• Can be a resource for questions that may arise about different diseases, infection control practices, or public health recommendations
Regulations
Regulations

http://www.nj.gov/health/cd/reporting.shtml

http://localhealth.nj.gov
## Immediately Reportable Conditions

<table>
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<th>CONFIRMED or SUSPECT CASES</th>
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<td>TELEPHONE <strong>IMMEDIATELY</strong> to the LOCAL HEALTH DEPARTMENT</td>
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- Anthrax
- Botulism
- Brucellosis
- Diphtheria
- Foodborne intoxications (including, but not limited to, ciguatera, paralytic shellfish poisoning, scombroid, or mushroom poisoning)
- *Haemophilus influenzae*, invasive disease
- Hantavirus pulmonary syndrome
- Hepatitis A, acute
- Influenza, novel strains only
- Measles
- Meningococcal invasive disease
- Outbreak or suspected outbreak of illness, including, but not limited to, foodborne, waterborne or nosocomial disease or a suspected act of bioterrorism
- Pertussis
- Plague
- Poliomyelitis
- Rabies (human illness)
- Rubella
- SARS-CoV disease (SARS)
- Smallpox
- Tularemia
- Viral hemorrhagic fevers (including, but not limited to, Ebola, Lassa, and Marburg viruses)
Recommendations for Best Practices

• Report all reportable conditions within the appropriate timeframe (immediate vs. 24 hours)

• Have all staff in facility up to date on all required vaccinations/titer screening

• As much as possible, minimize exposure of other patients and staff to patients with possible serious communicable diseases

• Vaccinate all eligible patients as early as possible

• Keep up to date on public health recommendations affecting your patient population.

• Contact local or state health department with any questions about vaccination, infection control, or other public health recommendations.
Examples
Example (cont.)

• Feb. 8, 2015: NJDOH notified of suspect case of measles in 16-year-old traveler from China
• Had arrived in U.S. ~1 week earlier
• Had spent time in California at Disneyland, Massachusetts, and New York before arriving in NJ on Feb. 6, 2015
• Clinical presentation: 2 days of fever up to 103, sore throat, mild coryza; no conjunctivitis, no cough; 1 day of rash which started on the face and proceeded caudally onto chest, abdomen, back, and arms
• Initial concern for measles → public health immediately notified
• What are important considerations in this case?
Example (cont.)

• Patient immediately placed and maintained in airborne isolation at hospital
• Recommendations for appropriate testing for measles made to hospital: nasopharyngeal swab for measles PCR and measles IgM/IgG
• Attempts made to obtain record of patient’s vaccination history
• Traveling with a group of students, teachers, and tour guides; attempted to obtain other group members’ vaccination histories
• Public health able to obtain a detailed travel history for the patient during the infectious period
After a day, rash evolved and seemed to be more vesicular rather than maculopapular → leading diagnostic consideration became primary *Varicella* disease (chickenpox) rather than measles.

Able to send a picture for review by physicians at NJDOH.

Patient maintained in airborne isolation; contact precautions added.

Obtained varicella-zoster virus (VZV) IgM/IgG and PCR for VZV from vesicular fluid.

Hospital instructed to verify immunity to *Varicella* amongst staff and to provide PEP with vaccine if indicated.
Example (cont.)

- NJDOH contacted Division of Global Migration and Quarantine (DGMQ) (part of CDC) regarding patient’s flight
- PCR testing from vesicular fluid positive for VZV, confirming diagnosis
- VZV IgM also positive
- Measles IgM negative, IgG positive (indicating likely prior vaccination); NP swab for measles PCR negative.

- Very good example of how clinicians and public health can work together to make the right diagnosis and protect greater public.
Different example

• Parent of 17-month-old unvaccinated child calls clinic to make appointment because child has fever and rash for 2 days
• Child brought into a busy waiting room with other children and babies.
• Child and parent brought back into exam room.
• Examiners all enter exam room without face mask.
• Family with recent travel to Europe. Child has fever up to 103, cough, and maculopapular rash on face and trunk. Measles is suspected.
• Child sent for measles and rubella IgM/IgG testing at commercial lab.
Different example (cont.)

• Child sent home (family lives in a large apartment building with many units). No specific instructions given to parent. Child feels better the next day and is taken to restaurant and department store.

• 5 days later, IgM/IgG results available. IgM positive. IgG negative. Child likely had measles.

• Clinic calls to inform local health department.
What could have been done differently?

• Parent of 17-month-old unvaccinated child calls clinic to make appointment because child has fever and rash for 2 days.
• Child brought into a busy waiting room with other children and babies.
• Stop—what action could have been taken at this point?

• Child and parent brought back into exam room.
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• Clinic calls to inform local health department.

• Investigation now started much later, and many people were unnecessarily exposed to a child with measles.

• Many persons also outside of window for potential PEP if indicated.
Conclusions

• At their best, clinical medicine and public health complement one another.

• Both vital to patient well-being

• Public health absolutely requires astute clinicians on the front lines; can’t function without people providing direct patient care.

• Public health is vital resource for clinicians for disease investigation, clinical recommendations, and recognizing and monitoring population-wide trends in morbidity and mortality.

• With strong collaboration, public is well-protected.
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