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Overview

This course is designed for physician, veterinarians, public health officers, emergency responders, state and local health department staff and graduate students aspiring to hold positions responsible for planning and responding to public health emergencies. This course will include an overview of public health’s involvement and response to various natural and unnatural emergencies and will discuss the domestic and international responses to disasters and epidemics.

Course Objectives

- Appreciate the public health impacts of various types of disaster nationally and internationally
- Become aware of current methods of disaster response
- Become familiar the operational organizations involved with disaster response
- Evaluate current public health threats and existing contingency plan and identify additional planning needs
- Understand the emergency response planning process and be able to prepare and implement a response plan

Course Meeting Time and Location
August 17-21   9am -12pm
WARF  Building Room  511

Course Activities
Review portions of FEMA online courses ( IS 100, IS 230, IS 235)
Information sharing presentations and summaries   (2)
Class participation
Final exam

Course Grading Criteria:
- 20 %  Class participation
- 50 %  Information Sharing presentations and summaries
- 30%  Final exam
Make-Up Policy for Missed Classes
Due to part of your grade being based on participation, students who have to miss class, will be issued an assignment in place of their attendance. Students are only allowed to make up one class.

Grading Scale:
- A  93+
- AB  88-92
- B   83-88
- BC  78-82
- C   <78

Instructional Technology
INSTRUCTIONAL TECHNOLOGY
This course will utilize instructional technology to aid in the student learning process. Technology, such as Learn@UW, MyWebSpace, and Wiscmail will be used for online learning activities, outside class communication, Web-based readings, lecture materials, and individual and team-based projects. Students are expected to partake in these online activities and participation will count toward student grades.

Learn@UW is a course management system. Wiscmail is the UW-Madison email account system. MyWebSpace is an online storage system for files and Web pages.

Students may utilize computers at the Health Sciences Learning Center or other UW computer labs to access online course activities. Students that plan to connect from home will need a dependable Internet connection, preferably broadband, and a relatively fast computer with sufficient hard disk space for file transfer. Students should plan to check their Wiscmail account and log-in to Learn@UW a couple of times per week.

Please look at the student technology resource Web guide at:
http://www.doit.wisc.edu/students/index.asp and technology policies at
http://www.doit.wisc.edu/security/policies/appropriate_use.asp.

Getting Started:

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>If you haven’t done so already, activate your NetID and Wiscmail account. Directions: <a href="http://www.doit.wisc.edu/students/activate.asp">http://www.doit.wisc.edu/students/activate.asp</a></td>
</tr>
<tr>
<td>2</td>
<td>Log-in and familiarize yourself with MyUW. Check and send email. (Note: You will need the Java plug-in installed to use MyUW applications. This free download is available at <a href="http://www.java.com">http://www.java.com</a>.)</td>
</tr>
<tr>
<td>3</td>
<td>Log-in to Learn@UW with your NetID and password. <a href="https://uwmad.courses.wisconsin.edu">https://uwmad.courses.wisconsin.edu</a>. If you are not able to log-in contact the Doit help desk at 264-4357.</td>
</tr>
<tr>
<td>4</td>
<td>Click on the plus icon in front of 2005 – Fall.</td>
</tr>
<tr>
<td>5</td>
<td>Click on the link for this course and explore. Log-out when you are done.</td>
</tr>
</tbody>
</table>
Step 6: Create a MyWebSpace account. Directions:
http://www.doit.wisc.edu/mywebspace/

Step 7: Familiarize yourself with MyWebSpace by uploading and downloading a document.

Assignments:

Choose 2 topics from the list of student topics or other topic approved by the instructor. Prepare a 6-8 minute summary of the topic for sharing with the class on day 3 and another 6-8 minute summary of the other topic for presentation on day 5. A maximum of 10 Powerpoint slides may be used to present each of your chosen topics. A brief (maximum 2 page) summary of each topic also needs to be submitted at the time of your presentations. Topic will be selected the first day of class.

Student Topics - Examples

Anthrax in Russia  Sverdlovsk  1979
Anthrax release in US - 2001
Sarin gas release – Tokyo 1995
Ricin – use as a terrorist agent
Radioactive material release – “dirty booms”
Department of Homeland Security
National Response Plan
Pandemic influenza (HINI)
Bird flu  (H5N1)
Biosurveillance – early detection of BT related events
Syndromic surveillance
National Incident Management System (NIMS)
National Strategic Stockpile
Regulation of Select Agents
Project Public Health Ready (NACCHO)
Post traumatic stress syndrome
Smallpox – disease and vaccination
Joint Terrorism Task Force – FBI
Cities Readiness Initiative (CRI)
Civil Support Team – National Guard Units
August 17  Monday

1 Course introduction, objectives, overview and requirements

   Role and responsibility of public health
   Public health roles and responsibilities
   Core functions of public health
   Public health action plans and personnel
   Public health law
   Federal laws
   State laws – Model Public Health Law (APHA)
   Local ordinances

   Functional model of public health response
   Planning
   Prevention (primary, secondary, tertiary)
   Assessment
   Response (service, education, management)
   Surveillance
   Recovery
   Evaluation

Public Health Preparedness Statutes, Laws and Regulations
   International
   Federal – Stafford Act
   State statute and regulations
   Local ordinances

Types of disasters and their consequences
   Natural and technological disasters
   Environmental effects of natural disasters
   Blizzards and heavy snowfall
   Cyclones
   Drought
   Earthquakes
   Floods – Wisconsin June 2008
   Heat waves
   Thunderstorms and tornados
   Volcanic eruptions (St. Helens May 18, 1980)
   Wildfire
   Manmade and technological disasters – bio, chem, rad, IT
   Blast injuries
   Epidemics
2 Structure and operation of the Federal response
   Disaster declarations and federal assistance
   Department of Homeland Security
   Federal response plan and emergency support functions
   ESF 8 Health and medical services
   Role of HHS, CDC, USDA, FDA, DOD, DOE, DOJ, EPA
   National incident management system (NIMS)
      Homeland Security Presidential Directive 5 (HSPD 5)
      Incident command system (ICS)
      Preparedness
      Communication and information management
      Joint information system (JIS)
      NIMS Integration center (NIC)
   Joint Terrorism Task Force (FBI)
      http://www.fbi.gov/page2/dec04/jttf120114.htm

   Strategic National Stockpile
   Biosence and BioWatch
   Civil Support Teams
   National Disaster Medical System
      Disaster medical assistance teams (DMAT)
      Disaster Mortuary Operational response teams (DMORTs)
      Veterinary Medical Assistance Teams (VMATs)
      National Pharmacy Response Teams (NPRTs)
      National Nursing Response Teams (NNRTs)
      Commissioned Corp Readiness Force (CCRF)
      Medical Reserve Corp (MRC)

   Structure and Operation of State and Local Response
   Delivery of public health services – state and local
   County and local emergency operation plans
   Mutual aid agreements
   Public safety agencies (police, fire, sheriff, emergency management)
   Emergency medical services
   Public health incident command and operations
      Emergency operations (coordination, control)
   Hospital emergency incident command (HEICS)
      Credentialing of volunteers

3 Introduction to Incident Command System (IS 100A)

August 18 Tuesday

1 Surveillance and Emergency Information Systems
   Public health role
   Disaster epidemiology – application of basic epidemiology
   Emergency information systems
Types of data and usage
Data collection for decision making – uniformity
Passive and active surveillance
Syndromic surveillance
Public Health Information Network (PHIN)
   EpiX, HAN, Pulsenet, Biowatch, NEDSS, WEDSS
Use of GIS in emergency response
Emergency management systems - eSponder

Hazard assessment
Identify disaster-related hazards and associated vulnerability
Determine risk of public health need
Prioritize health needs based on information from community assessment
Provide decision makers with objective information to guide prevention, mitigation, and response to the disaster

Rational for assessing risk

Hazard identification and analysis
Security Risk Assessments

Data collection – What information needs to be reported?
   How can the information be collected?

2 Disaster communications

Public health role in communication
Communicating in a Crisis – Guidelines for Public Officials
   Katrina August 29, 2005
   Bush and Brown
   Leavitt and Gerberding
   General Russell Honore – Joint Task Force

Communicating threats related to an emergency
Internal and external disaster communications
Audience and communication channels
   Colleagues
   Area residents
   Elected officials and agency leaders
   Media
Interviewing
Emergency alert systems
   Wireless communication systems – cells, pagers etc
   Radio operation – HAM, 2 ways, 800 mhz
   Epidemic information exchange (EpiX)
   Health Alert Network
   Web based – UW
   GE Public Health Alert System
   Reverse 911
   Information technology disaster recovery
August 19 Wednesday

1 Essentials of Disaster Planning - FEMA

Public health role
Common tasks related to disaster response
- Inter-organizational coordination
- Sharing information
- Resource management
- Advance warning
- Search and rescue
- Use of mass media
- Triage
- Casualty distribution – airline crash, bombing
- Patient tracking
- Caring for patients when health care infrastructure has been damaged
- Management of volunteers and donations
- Disruption of shelters, utilities and transportation

Common components of a response plan
- Baseline assessment
- Surge capacity
- Drills and training
  - Types of exercises
- Identifying available resources

Environmental and Occupational Health Issues
- Public health roles
- Reducing exposure to environmental hazards
- Environmental surveillance
- Sanitation during disasters
- Water supply and safety
- Food safety
- Worker safety

Animal issues

Mental Health Strategies
- Public health role
- Psychosocial impact of disaster
- Post-traumatic stress disorder
- Behavioral services needed following a disaster
- Services provided at family assistance centers
- Types of individuals using assistance centers
August 20, 2009  Thursday

1  Public Health Response to Emerging Infections and Terrorism
   Public health role
   Is it terrorism or new disease – WNV, SARS

   Emerging diseases
   Pandemic influenza - 1918
   Swine flu – New Jersey 1976
   Legionnaires disease – 1975
   HIV/AIDS – 1981
   Hantavirus – 1993
   West Nile virus – 1999
   Monkeypox – 2003
   Anthrax – 2001
   SARS – 2003-4
   Bird flu – 2005
   Novel flu H1N1 - 2009

   Terrorism as a public health problem
   History of bioterrorism
   Overt vs covert releases

   Biological agents of terrorism
   Category A agents
      Bacillus anthracis
      Clostridium botulinum
      Variola major
      Yersinia pestis
      Francisella tularensis

   Category B agents
      Coxiella burnetti
      Brucella species
      Burkholderia mallei
      Alphaviruses (VEE, WEE, EEE)
      Ricin toxin
      Epsilon toxin of Clostridium perfringens
      Staphylococcus enterotoxin B

   Bioterrorism response plans
   Regional planning
Role of HHS and CDC in response to terrorism
Role of other federal agencies

Chemical terrorism
    Nerve agents – sarin, VX, tabun, soman
    Blister agents – mustard, phosgene
    Choking agents – phosgene, chlorine

Radiation emergencies

2  Influenza - including endemic, pandemic and novel strains of H1N1
   (Peter Shult, PhD  Director  Division of Communicable Disease)

    Influenza viruses
        Structure
        Natural hosts
        Immune response
    Influenza – clinical description
        Endemic and pandemic influenza
        Treatment and prophylaxis
    Testing
    Bird flu (H5N1)
    Swine flu (H1N1)  Summer 2009 outbreak
    Pandemic planning and public health response

3  Planning and Response to Pandemic Influenza

August 21, 2009   Friday

1  Federal funding of state and local agencies
    History
    Focus groups A, B, C, D, E
    Application process for federal grant funds
        RFP
        Development of proposal (objectives, budget, evaluation)
        Federal grant administration and reporting (program and budget)

    Public health advocacy related to preparedness
    State and local public health agencies and associations
    Trust for America’s Health

2  Public Health Preparedness – Preparing for a Major Event - Olympics

3  Student presentations and Final Exam
Resources, Readings and Links


FEMA. Emergency Management Institute. Emmetsburg, MD.

- Introduction to Incident Command System. IS-100.a
  [http://training.fema.gov/EMIWeb/IS/is100a.asp](http://training.fema.gov/EMIWeb/IS/is100a.asp)

- Principles of Emergency Management. IS-230
  [http://training.fema.gov/EMIWeb/IS/is230.asp](http://training.fema.gov/EMIWeb/IS/is230.asp)

- Emergency Planning. IS-235
  [http://training.fema.gov/EMIWeb/IS/is235.asp](http://training.fema.gov/EMIWeb/IS/is235.asp)

- Introduction to Disaster Assistance

- National Incident Management System (NIMS). IS 800

- National Response Plan (NRP). IS 700

  [http://www.fema.gov/about/divisions/cpg.shtm](http://www.fema.gov/about/divisions/cpg.shtm)


NACCHO. Master the Disaster. An interactive CD-ROM used to create emergency preparedness tabletop exercises.


CDC Foundation. Meta-Leadership summit for Preparedness. 2009
http://www.rwjf.org

http://emergency.cdc.gov/publications/jan09phprep/index.aspus,


CDC. Public Health and Social Services Emergency Fund. Funding Opportunity CDC-RFA-TP09-902-H!N1109


Centers for Law and the Public Health. Model State Emergency Health Powers Act


