

Bioterrorism and Public Health: The Ethics of Public Health Practice in Crisis Settings

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Bioterrorism and Public Health

- Overview of Presentation
 - Normative Basis of Public Health
 - Public Health Practice in Crisis Settings
 - Example of Bioterrorism
 - Implications for Public Health

Normative Basis of Public Health

- Ethics
 - Utilitarian consequentialism
 - Greatest good for the greatest number
 - Triage methods (military, civilian)
 - Resources vs. needs
 - Optimize organization of resources
 - Maximize numbers who survive

Normative Basis of Public Health

- Ethics
 - Social contract
 - Public education
 - Protection of society
 - Technical quality of information and action
 - Obligation to monitor and warn (surveillance)
 - Obligation to prevent (search for root causes)
 - Obligation to minimize harm as well as maximize good

Normative Basis of Public Health

- Law
 - Source of authority
 - Technical expertise
 - Delegation via representative government
 - Scope of authority
 - Defined through law and regulation
 - Expanded powers in time of emergency

Normative Basis of Public Health

- Human rights
 - Individual rights in relationship to state
 - Priority on dignity and equity
 - Rare exceptions when rights of groups can over-ride rights of individuals (Siracusa Principles)
 - When applied as a last resort
 - When provided for in the law
 - When shown to be in the legitimate public interest
 - When found to be strictly necessary, without less intrusive or restrictive means available to achieve same end
 - When not imposed arbitrarily

Public Health Practice in Crisis Settings

- Generic interventions in disaster
 - Key strategies
 - Prevention, Preparation, Mitigation, Response, Recovery
 - Onset of **crisis** means prevention has failed
 - **Preparation** phase mobilized
 - Capacity to respond based on adequacy of advance preparation (resources, training, transport, command, communication, coordination)
 - Focus moves to **mitigation and response**

Public Health Practice in Crisis Settings

- Key generic strategies of mitigation and response
 - Threat reduction (disease containment)
 - Public education (media, press)
 - Protective restrictions (evacuation)
 - Salvage and support interventions (search and rescue, medical care)
 - Provision of survival necessities (mass care, food, shelter, water)

Public Health Practice in Crisis Settings

- Ethical choices in disasters
 - Individual vs. group
 - Group vs. group
 - Efficiency vs. transparency
 - Political vs. professional roles
 - Professional vs. personal roles
 - Authority vs. participation

Public Health Practice in Crisis Settings

- Ethical choices in disasters
 - Search and rescue
 - Mass triage
 - Rescue vs. recovery
 - Evacuation and shelter
 - Public education
 - Relationship to media
 - Management of death
 - Attention to loss and bereavement

Public Health Practice in Crisis Settings

- Ethical assessments of disaster outcomes are retrospective and anecdotal
- Main findings
 - Transparency paramount
 - Technical skills and professionalism both essential
 - Integrity of search for right answers as important as the answers (process matters)
 - Tell the truth and be practical
 - Attention to needs of individuals cannot be ignored
 - Attention to psychological distress crucial
 - Rely on and learn to use the media and mass education outlets

Public Health Practice in Crisis Settings: Bioterrorism

- **Definition:** Threat or use of biological agents to inflict harm on an individual or group in order to incite widespread terror
- **Presumed agents:** Anthrax, smallpox, plague, tularemia, brucellosis, Q fever, viral encephalitides, viral hemorrhagic fevers, botulinum toxin, staph enterotoxin B
- **Nature of threat:** lethal epidemic disease

Public Health Practice in Crisis Settings: Bioterrorism

- **Key features of a bioterrorism event**

- Multiple simultaneous patients with similar clinical syndromes
- Severe illness, esp. among young and healthy
- Predominantly respiratory symptoms
- Unusual (non-endemic organisms)
- Unusual antibiotic resistance patterns
- Atypical clinical presentation of disease
- Unusual patterns of disease
- Intelligence information tips
- Reports of sick or dead animals or plants

(Richards et al, Ann EM 1999;34:183-190)

Public Health Practice in Crisis Settings: Bioterrorism

- Key strategies, using public health paradigm
 - Prevention
 - Threat assessment
 - Threat reduction through arms control
 - Counter-intelligence
 - Defensive research
 - Response

Public Health Practice in Crisis Settings: Bioterrorism

- Arms control as legal strategy in threat reduction
 - Progress and lapses always linked to political events and pressures
 - Wars
 - Public opinion
 - Threat assessment
 - Power and vulnerabilities

Public Health Practice in Crisis Settings: Bioterrorism

- Arms control as legal strategy in threat reduction
 - Progress and lapses porous to technological advances
 - Wars
 - Biotechnology
 - Delivery systems
 - Technical means of intelligence and evasion of detection

Public Health Practice in Crisis Settings: Bioterrorism

- Arms control as legal strategy in threat reduction
 - Desired elements
 - Comprehensive
 - Verifiable
 - Global
 - Overall aim
 - Create climate of unacceptability (norms)
 - Create risks to non-compliance

Public Health Practice in Crisis Settings: Bioterrorism

- Arms control as legal strategy in threat reduction
 - Major treaties (BW highlighted)
 - 1925 Geneva Protocol
 - 1963 Limited Test Ban Treaty
 - **1972 Biological and Toxin Weapons Convention**
 - 1972 Nuclear Non-Proliferation Safeguards Treaty
 - 1972 Intermediate Nuclear Forces Agreement
 - 1991 Strategic Arms Reduction Treaty
 - 1993 Chemical Weapons Convention

Public Health Practice in Crisis Settings: Bioterrorism

- Arms control as legal strategy in threat reduction
 - Close relationship to International Humanitarian Law (norms relating to conduct of war and the type of weapons that are acceptable to use)
 - Examples of IHL treaties
 - 1899 and 1907 Hague Conventions
 - 1977 En-Mod Convention
 - 1981 Conventional Weapons Convention
 - 1997 Ottawa Convention on Anti-Personnel Landmines

Public Health Practice in Crisis Settings: Bioterrorism

- Arms control as legal strategy in threat reduction
 - Key general problems
 - Pace of scientific discovery
 - Development and maintenance of norms and concern
 - National sovereignty
 - Military imperatives
 - International cooperation
 - Intrusiveness of inspections
 - Measures to ensure compliance
 - Effectiveness of deterrence

Public Health Practice in Crisis Settings: Bioterrorism

- Arms control as legal strategy in threat reduction
 - “The web of deterrence”
 - Invokes arms control as one element
 - Other elements include controls on materials, measures to reduce military utility of weapons, robust responses to acquisition or use

(GS Pearson 1993 in BMA 1999)

Public Health Practice in Crisis Settings: Bioterrorism

- Key response strategies
 - Advance preparation
 - Surveillance
 - Ascertainment
 - Threat communication
 - Mobilization of assets
 - Primary response
 - Secondary response (mitigation)

Public Health Practice in Crisis Settings: Bioterrorism

- Key strategies are primarily public health strategies
- Major policy issues entwined in these strategies
- Many of these policy issues involve ethical and legal choices and conflicts

Public Health Practice in Crisis Settings: Bioterrorism

- Primary response
 - Treatment of ill individuals
 - Isolation of ill individuals
- Secondary response
 - Quarantine of exposed populations
 - Mass vaccination or immunization of exposed and non-exposed populations
 - Decontamination, vector control, evacuation
 - Mass education and psychological support

Public Health Practice in Crisis Settings: Bioterrorism

- **Policy, ethical and legal issues**
 - **Primary response**
 - Treatment of which individuals? (issues of cost, access, drugs availability, appropriateness, underlying illnesses)
 - Isolation of which individuals? How to accomplish this isolation without harmful stigmatization, restriction of liberties, violations of confidentiality, informed consent, privacy?

Public Health Practice in Crisis Settings: Bioterrorism

- Policy, ethical, and legal issues
 - **Secondary response**
 - Which groups to quarantine? (how is “at risk” defined?)
 - Which groups to vaccinate or immunize? (what about immune-compromised, elderly, children, those who refuse?)
 - What should be said in public education campaigns? (How explicit to make the rationale for treatment and protection choices?)

Public Health Practice in Crisis Settings: Bioterrorism

- Policy, ethical, and legal issues
 - **Roles**
 - Political leadership may urge action not compatible with scientific principles or practical requirements
 - Responsibilities at work vs. fears for safety of self and family
 - **Authority**
 - Balance between social mobilization and crowd incitement
 - Balance between invocation of emergency powers and activation of community support

Public Health Practice in Crisis Settings: Bioterrorism

- New legal initiatives
 - Aimed to expand federal and state surveillance and police powers in response to terrorism threats
 - Major impact on public health practice and policy
 - 2001 USA Patriot Act (federal)
 - 2002 Homeland Security Act (federal)
 - State Emergency Powers Act (under discussion)

Public Health Practice in Crisis Settings: Bioterrorism

- Anthrax
 - 5 fatal cases 2001
 - Response engaged US Post Office, a wide range of federal authorities, and officials in several states and cities, including Washington, D.C.
 - Exposed vulnerabilities
 - Launched search for successful strategies

Public Health Practice in Crisis Settings: Bioterrorism

- Anthrax
 - Vulnerabilities included:
 - clinical knowledge and leadership
 - competition among matrixed bureaucracies
 - segmented population groups with strong sense of entitlement
 - Strengths to build on included:
 - Rapidly well informed and intrusive media coverage

Public Health Practice in Crisis Settings: Bioterrorism

- Smallpox
 - Standard strain, 30% mortality in past
 - Standard response to outbreak: a complex mixture of vaccination, isolation, and quarantine
 - Eradicated in mid-1970s by world vaccination campaign
 - US stopped mass population vaccination in 1972
 - Two official and acknowledged stocks of smallpox virus remain in US and USSR
 - Active concerns about access and use against US population as a bioterrorism agent

Public Health Practice in Crisis Settings: Bioterrorism

- Smallpox
 - Technical issues with any vaccination policy
 - Adequacy and safety of vaccine supplies
 - Serious reactions and side effects
 - Absolute contraindications
 - Alternatives to vaccination (VIG, quarantine)
 - Costs and logistics of rapid population-based vaccination program

Public Health Practice in Crisis Settings: Bioterrorism

- Smallpox
 - Possible US response strategies
 - Vaccinate essential health workers and members of US military now
 - Embark on pre-event mass vaccination now
 - Wait for index case and then mobilize emergency mass vaccination
 - Plan for varying levels of population quarantine or restricted movement depending upon outbreak

Public Health Practice in Crisis Settings: Bioterrorism

- Smallpox
 - Policy and ethical issues attached to each choice
 - Positive features of current deliberative process
 - Relatively open to public scrutiny
 - Clearly balanced on scientific and social costs and benefits
 - Preparations underway for worst case scenario, in terms of vaccine and VIG production

Public Health Practice in Crisis Settings: Bioterrorism

- Smallpox
 - Risks ahead
 - Bureaucratic readiness
 - mass education requirements
 - potential for inter-group divisiveness
 - Public unfamiliarity with arguments based on needs and imperatives of the group, as opposed to the individual

Public Health Practice in Crisis Settings: Bioterrorism

- Implications for Public Health
 - Massive public education campaigns needed
 - Focus on transparency
 - Make arguments in terms of maintaining core individual liberties and enhancing group protection
 - Begin discussion of limits and possibilities in state and federal emergency powers

Public Health Practice in Crisis Settings: Bioterrorism

- Implications for Public Health
 - Encourage community participation in order to foster social cohesion
 - Produce positive short-term benefits in terms of enhancing public health infrastructure
 - Create and sustain the capacity and reputation for truth-telling and evidence-based decision-making in all sectors of the profession and the bureaucracy

Public Health Practice in Crisis Settings: Bioterrorism

- Implications for Public Health
 - Do not lose sight of the main mission: the protection of the health of the public in a democratic society built on respect for individual liberties