The Role of Local Public Health Agencies in Community Healthcare Continuity through Antiviral Distribution during Seasonal and Pandemic Influenza

Sanjib Bhattacharyya, PhD; Anupa Gandhi, MS; David Bina, MBA; Mary Ellen Bruesch, MS; Angela Hagy, MSPH; Paul Biedrzycki, MPH, MBA; Steve Gradus, PhD: City of Milwaukee Health Department, Milwaukee, Wisconsin

Abstract

The severity of the emerging influenza viruses, their potential for rapid geographic dispersion, and associated human death is of significant concern to local public health agencies (LPHAs). Development of a practical and flexible plan assuring community healthcare continuity is essential to successfully combat a seasonal or pandemic event. Rapid and targeted distribution of antivirals to the priority healthcare providers is critical to assure the level of community continuity necessary to sustain response during such events. Antiviral distribution plans include inventory tracking, acquisition, delivery and determining efficacy within a population. The issuance of healthcare guidance, monitoring adverse clinical effects, discerning epidemiologic trends and communications between private and public sectors is critical. The plan formulated through collaboration with public health, emergency response and law enforcement agencies with close interactions of partners and stakeholders will ensure a comprehensive community-wide approach. However, the likely duration and scope of an influenza pandemic demands availability of resources outside the typical control of the government sector, minimizing adverse economic, social and health consequences and ensures community resiliency. LPHAs are adept and typically positioned to provide outreach and guidance to families and individuals during emergencies. LPHAs must emphasize comprehensive healthcare continuity of operations within emergency medical services (EMS), hospitals, acute care and community-based clinics. The duration and scope of an influenza pandemic, and the time of antiviral distribution must consider the imminent surge of patients and needs to triage and treat the truly sick as opposed to the "worried well". Quality healthcare service, stringent infection control practice and advanced laboratory capabilities for early disease detection will facilitate mitigating the severity of morbidity and mortality during pandemic influenza.

Potential Roles for LPHAs in Antiviral Distribution:

- Tracking: Acquisition, supply, delivery, distribution and efficacy of antivirals
- Issuance of healthcare guidelines on use
- Monitoring adverse effects and epidemiology
- Re-ordering and cost/reimbursement issues
- Redistribution strategies between pandemic waves
- Reporting and coordination to State and Federal agencies
- Public/Media messaging

RAND Model and Exercise for the City of Milwaukee Health Department (MHD)

Purpose of RAND Project Exercise

Assess the operational knowledge and level of preparedness of local healthcare providers in the use and distribution of antiviral medications during seasonal and pandemic influenza

- Improve coordination, communication, and collaboration and antiviral dispensing
- Identify gaps
- Develop a preliminary gap-improvement plan

RAND Exercise Objectives Regarding Antivirals

- Coordinate distribution and dispensing
- Effectively communicate
- Improve regional understanding LPHAs roles and responsibilities
- Enhance healthcare providers' understanding of distribution for public health

MHD Objectives

- Assess the knowledge, attitude and beliefs of local healthcare providers
- Develop an educational and planning toolkit
- Conduct a tabletop exercise

Table-top Exercise

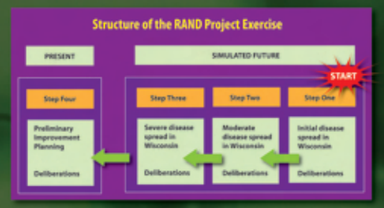
22 participants and observers:

- Hospitals
- EMS
- Community-based organizations
- Local public health departments
- Private sector

Exercise Objectives

- Coordinate antiviral distribution and dispensing activities between stakeholders
- Effectively communicate across stakeholders about antiviral use
- Improve regional understanding LPHAs roles and responsibilities in antiviral distribution decision-making
- Enhance healthcare providers' understanding of antiviral distribution for public health

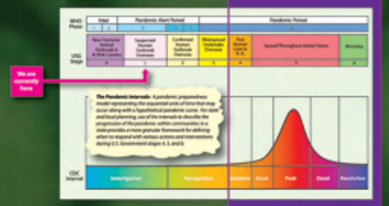
Structure of the RAND Project Exercise



Estimated Pandemic Influenza Impact in the City of Milwaukee and Milwaukee County:

Category	City of Milwaukee	Milwaukee County
Clinically Ill	147,593	234,227
Outpatients	65,517	103,206
Hospitalizations	13,546	22,608
Deaths	3,013	5,208

The exercise focused on pandemic phases ONLY: CDC-USG-WHO Phases:



MHD Antiviral Operational Plan

Antiviral Distribution Recommendation (State Guided)

Pandemic Intervention Strategies:

Non-pharmaceutical Interventions

Infection control precautions
- Droplet precautions
- Cohorting

Social distancing
- School closure
- Cancellation of mass public gathering

Risk communication

Pharmaceutical Interventions

Vaccine
- 4-5 months to produce
- Unlikely to be available during first wave
- There will be vaccine shortages initially
- 2 doses may be necessary

Antiviral medications
- Limited supply
- Need for prioritization
- Need for distribution plan

Wisconsin has a Limited Antiviral Stockpile

Two sources:
- 968,771 courses through SNS (~15% of pop)
- 152,979 courses purchased by the state (~3% of pop)

Milwaukee does NOT have its own antiviral stockpile

Priority groups for antiviral medications
Current antiviral doses in Wisconsin (1,121,750) would be used by pre-defined priority.

Connections between Exercise Discussions and Preliminary Improvement Planning

Project successes

- Engaged private sector in development of community and regional planning
- Identified gaps in current plan
- Better understanding of preferred educational methods for future outreach
- Enhanced relationships with external stakeholders for more comprehensive planning
- Tested model for future initiatives with other partners (private sector, CBOs, etc)

Project challenges and limitations

- Short project timeframe and deadlines (staff burnout)
- Difficulty with supporting contractual agreements (Center for Urban Population Health and RAND)
- Survey was solely computer-based
- Difficult to attract participants to tabletop (pandemic planning fatigue?)

Local (Milwaukee) Health Department Factors impacting Antiviral and Pandemic Influenza Planning and Preparedness

PROACTIVE

Annual Flu surveillance: Epidemiology
- Medical case reports
- School absenteeism
- Respiratory illness reporting
- Corporate absenteeism

Annual Flu surveillance: Laboratory
- Local university healthcare centers

Real-time pathogen ID, typing and reporting
- Monitor Antiviral resistance
- Weekly and monthly reports

Local & State Networks
- PH *e* Lab Network
- WHO-CDC-State reporting

Education for Community & Healthcare
- Local pandemic flu preparedness
- Local business partnerships
- Community healthcare initiatives
- MHD Flu toolkits
- Media messaging
- Seasonal vaccination strategies

Coordination with existing planning initiatives
- SurvNet
- HAN
- FUSION intelligence center
- CRI
- UASI
- ESSENCE
- WiTrac
- ROD

REACTIVE

Viral resistance

Viral subtyping (emerging strain)

Severity of seasonal/pandemic flu (rapidity of spread)

Strain virulence

Vaccine development

Pandemic flu vaccine and antivirals: Availability and distribution to priority groups

Distribution center security

Real-time media messaging (MHD website, news paper and TV/Radio channels)

Community continuity strategies

Deploying ICS and SNS

PH and business operations continuity

Summary and Conclusions

- Local preparedness is the foundation of pandemic readiness. In addition to State governors, leadership must come from mayors, county commissioners, school principals, faith leaders, college presidents, corporate planners, and entire healthcare infrastructure
- Concentrate on countermeasure distribution. Improved stockpiling system and appropriate deployment of federal supplies in the early stages of a pandemics (getting pills into the palms)
- Individual and shared responsibilities. States, communities, businesses, and families
- Role of feds working with individual the state and locals. Federal govt. has an indispensable role that individual states can't do on its own, to provide added capacity and coordination
- Local and State governments have better understanding of their communities and their unique needs. The key to success is collaboration.

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