

On Linkages

PREPARING AND SUSTAINING A COMPREHENSIVE PANDEMIC PLAN FOR AN ACADEMIC COMMUNITY

CHRISTOPHER G. ATCHISON, MPA
ELIZABETH A. HOSMANEK, JD
LAURIE WALKNER, MA

Creating a public health emergency plan requires unprecedented cooperation and active participation across an academic institution and throughout the community in which that institution is located. Developing an effective plan at an academic institution to mitigate the consequences of a global event, such as an influenza pandemic, requires development of new understandings, relationships, and agreements in an environment traditionally governed by principles of academic freedom and shared governance.

Established in 1847, the University of Iowa (UI) is a major research university located in Iowa City, Iowa, population 63,807, within Johnson County. In many respects, the UI represents a community of its own with more than 50,000 students, staff, and faculty carrying out a \$2.1 billion budget. The international student population, which comprises approximately 7% of the student body, represents more than 100 countries. Housing is provided for the approximately 6,000 students who choose to live on campus in residence halls. The remaining 24,000 students live off campus, largely remaining in Iowa City. A campus bus system, Cambus, provides transportation among the 11 colleges, the UI Hospitals and Clinics (UIHC, a 680-bed, comprehensive academic medical center), the University Hygienic Laboratory (Iowa's environmental and public health lab), various administration centers, parking facilities, libraries, museums, and athletic complexes.

The UI's all-hazards Critical Incident Management

Plan, maintained by the UI Department of Public Safety, was crafted to respond to traditional public safety concerns such as weather-related crises or criminal activities. The threat of an influenza pandemic made apparent the need for UI to develop new plans and strategies to address the possibility of a public health emergency on campus.

THE TASK FORCE

The UI Pandemic Influenza Task Force (Task Force) was established in January 2006 as an initiative of the Office of the Provost and charged with implementing an inclusive process to establish a pandemic plan. With the realization that the line between town and campus would all but disappear during a pandemic came the recognition that a comprehensive plan must address not only the needs of the academic community, but also those of members' dependents, local businesses, and others.

The Task Force quickly expanded to include more than 70 individuals from across campus, the local community, and state agencies. Planners developed a structure initially relying upon the Centers for Disease Control and Prevention (CDC) Checklist for Universities,¹ with five subcommittees: Basic Plan, Communications, Continuity of Operations, Health-Care Services, and Public Health. The template was then augmented to align with plan templates distributed to Iowa's 99 counties by the Iowa Department of Public Health (IDPH). The preliminary UI Pandemic Influenza Response Plan (UI Response Plan) was presented to the Provost in June 2006, with recommendations identifying further work needed. Based upon the work plan, the administration extended the work of the Task Force through June 2007 and then through September 2008. More than half of the original Task Force and subcommittee members remained active participants through the nearly three years of pandemic planning.

The fiscal year (FY) 2006 UI Response Plan outline became the starting point for developing a pandemic planning toolkit for all academic institutions, through a collaborative of more than a dozen Association of

Articles for *From the Schools of Public Health* highlight practice- and academic-based activities at the schools. To submit an article, faculty should send a short abstract (50–100 words) via e-mail to Allison Foster, ASPH Deputy Executive Director, at afoster@asph.org.

Schools of Public Health members, with assistance from subject matter experts within local, state, and federal government.² Extensive revisions from these practice partners resulted in the development of a template beneficial to academic institutions of higher learning in all phases of pandemic planning. The resulting toolkit was scheduled to debut at the 2008 American Public Health Association Annual Meeting and Expo in October 2008.

The UIHC formed a Collaborative Hospital Planning Group shortly after the Task Force was formed. The Hospital Planning Group is significant in that it includes key decision-makers from medical facilities owned by state, federal, and private entities. In 2007, its members signed a mutual aid agreement memorandum of understanding. Currently, members are addressing cross-cutting issues including triage site locations utilizing joint staffing, medical surge capacity, scope of care, and stockpiling.

TASK FORCE ACTIVITIES

Maintaining a phased approach to pandemic planning, the FY 2007 Task Force orchestrated an advanced tabletop exercise, hosted a Regents workshop for five Board of Regents schools within the state of Iowa, and produced a second Response Plan that greatly surpassed its predecessor in content and comprehensiveness.

FY 2008 brought a plethora of activities to strengthen community preparedness and challenge internal communications. Creation of the UI Public Health Emergency Student Volunteer Advanced Registration (UI-PHESVAR) provided a trained student volunteer workforce whose functions can be cross-utilized by local organizations requesting assistance. The UI-PHESVAR was structured as a student-only adaptation of the Medical Reserve Corps, with the actual database capable of being maintained with minimal input during an emergency. Volunteer students could be asked to perform a variety of roles, including running messages between offices in the event of an electronic failure, transporting supplies, staffing a hotline, or delivering meals to quarantined or isolated individuals. Students who volunteered were given a free seasonal influenza vaccination.

Roles within the Task Force were adjusted during the planning process when necessary. Presentations to internal and external groups raised awareness and encouraged new questions from previously overlooked populations. Efforts were made to be as inclusive and transparent as possible. Individuals who posed questions but were not directly involved in pandemic

planning were invited to Task Force and subcommittee meetings. An ex officio position was created for the UI American Association of University Professors chapter president when he expressed concerns about UI's emergency plans after a report was released regarding alleged inconsistencies at academic institutions in the wake of Hurricane Katrina.³

A new communications tool, the UI Hawk Alert System,⁴ debuted at the beginning of the 2007–2008 academic year as a tool to notify the campus community of threats to safety in emergency situations. The system allows administrators to send recorded or electronic messages (called "Hawk Alerts") to students, faculty, and staff by cell phone, home phone, office phone, and e-mail simultaneously. The entire campus community can be notified in about 15 minutes, whereas mass e-mails to the entire community previously required approximately two hours.

Community and state public health leaders have been integral since the inception of the Task Force. Significant leadership changes within UI administration, IDPH, and Johnson County Public Health occurred. These changes resulted in continuous introduction of new personnel to the pandemic planning process, leading the Task Force to adopt a strong educational role.

The first university-wide infectious disease tabletop exercise was held in April 2007. It was the first emergency exercise in which many administrators had ever participated. Despite the classic errors expected to arise during any exercise, significant successes were noted. The fictional scenario⁵ utilized during the tabletop exercise included a twist that few participants expected: rather than having the roughly 500 students left on campus that groups had planned for, several thousand students remained in the Iowa City area. These students required housing, health care, and food at a time when supply shipments to Iowa City were suspended. Notwithstanding these difficulties, participants ensured that students' basic needs were met throughout the exercise.

Areas of improvement focused on communications issues as well as clarification of roles and responsibilities. Whereas an incident command system (ICS) was identified with participants appointed to specific roles, those participants were not previously apprised of their roles or provided with sufficient training to assume the roles. Participants experienced difficulties opening a joint information center and integrating other incident command principles. In preparation for the 2008 tabletop exercise, job action sheets were specifically tailored for individuals moving from an

academic setting into an incident command position. Training recommendations regarding the availability of no-cost training from both the Prepare Iowa Learning Management System⁶ and the Federal Emergency Management Agency⁷ were also provided.

LESSONS LEARNED

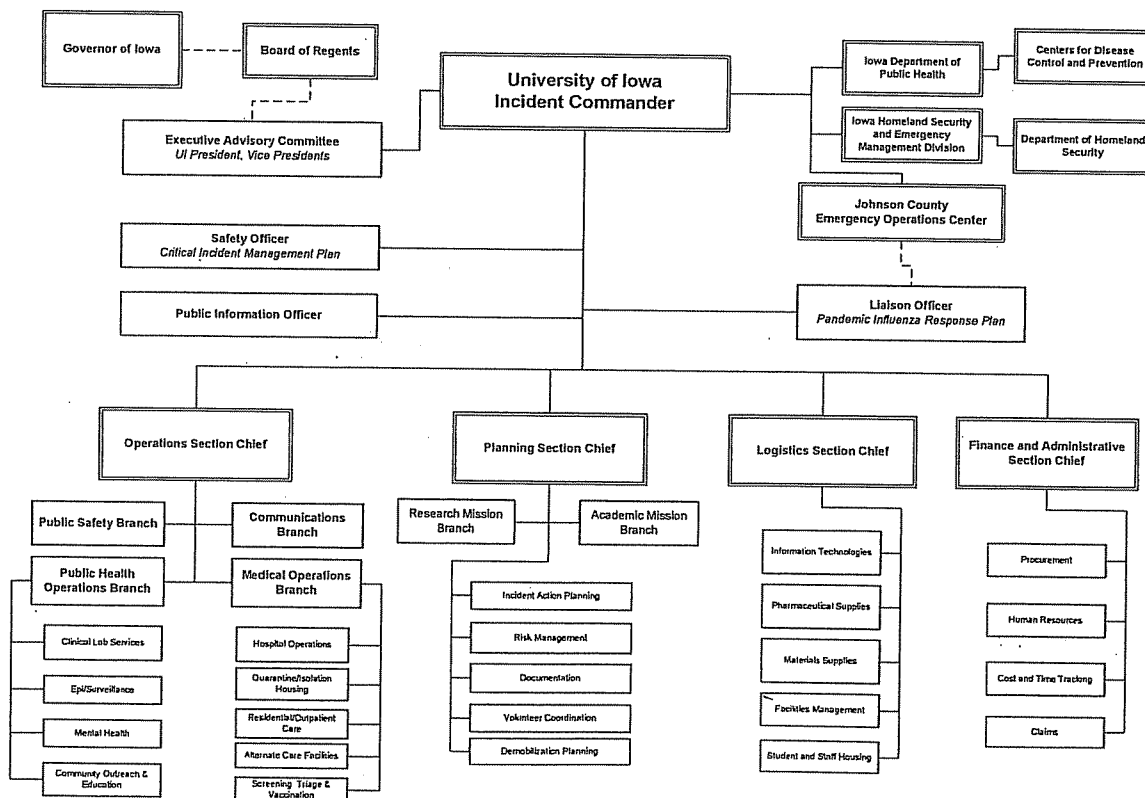
Integrating the National Incident Management System

Several significant lessons were learned throughout the pandemic planning process. Adopting a National Incident Management System (NIMS) structure, including a fully populated ICS, posed particular challenges. The chart included for reference is still a work in progress and is not endorsed by all individuals within the UI administration. Extensive discussions internally, as well as externally with local and state emergency management resources, continue to be held to determine who would be first, second, third, and even fourth alternatives for key NIMS positions. Throughout the chart development, the Task Force consulted with recognized

experts for additional input to further improve both internal and external connectivity.

The UI incident command organizational chart deviates from traditional ICS charts in that an Executive Advisory Committee is included (Figure). Similar to many academic institutions, the UI mission focuses on academics, service, and research. In the case of a long-term public health emergency on campus, the UI Response Plan assumes that classes and non-pandemic-related research will be suspended. This is partly to implement CDC recommendations to apply social distancing measures “early and often.”⁸ Suspension of these activities could have long-term repercussions due to cascading complexities involving funding sources, accreditations, resources previously expended, trial studies involving human participants, and a host of unknowns that may not be clear until the public health emergency is underway. The Executive Advisory Committee, as well as Research and Academic Mission Branches within the planning section, will serve as the contacts through which these issues can be addressed.

Figure. University of Iowa Pandemic Influenza Planning Task Force, NIMS/ICS organizational chart: public health emergency



NIMS = National Incident Management System
ICS = incident command system

Continuity of operations plan

Developing an effective, comprehensive continuity of operations plan (COOPS) applying assumptions found in the UI Response Plan required many units and departments to take a hard look at what functions are essential for long-term sustainability. For purposes of a public health emergency, essential functions are defined as actions that must be carried out, irrespective of whether classes are suspended and a large portion of personnel are unable to work, to avoid (1) endangering the lives, well-being, or safety of people or animals relying on the university or (2) irreparable damage to university property. As an example, maintaining minimal heating to a building in winter to prevent pipes from bursting would be an essential function. Maintaining that building as open to the public would not be an essential function. Applying this definition, teaching classes would also not be defined as an essential function during a public health emergency. All colleges, departments, and units on campus were asked to identify their essential functions during a public health emergency, consider whether those essential functions could be performed remotely, list a chain of command at least three people deep that names individuals able to carry out those functions, and cite communications that could be employed during an emergency.

Related to COOPS, discussions took place on how to assure employees that the UI would do everything in its power to ensure a safe work environment. The assurance of a safe environment was deemed critical to ensure that essential functions could be carried out, in particular those functions that cannot be performed remotely. During FY 2008, the Task Force was able to allocate approximately \$11,000 toward the purchase of basic personal protective equipment for employees. The decision on what to purchase was a complex algorithm that required input from all Task Force subcommittees. It was estimated that from approximately 13,000 employees, as many as 4,000 could be needed on-site during a public health emergency, provided that such an emergency took place during the regular academic year. This estimate was determined after reviewing continuity plans submitted by departments, units, and colleges, with 25% factored in for those areas that have not yet completed their continuity plans.

Remote continuity of learning

Numerous discussions were held questioning the fundamental fairness and logistics of continuing classes remotely, even controlling for issues such as the ability for information technologies to absorb the additional capacity when one-third or more of the student body may be ill or providing care. The infamous 1918–1919 pandemic influenza virus disproportionately infected

the population most represented in the student body: young, otherwise healthy individuals. The likelihood that the next major influenza pandemic could affect a similar age group was given serious consideration by the Task Force. The final decision regarding remote continuity of learning during a pandemic was that it would be logistically impossible to move all classes online once a pandemic became imminent. Additional factors that led the Task Force to prefer suspension of classes during a global emergency rather than remote continuity of learning included (1) the length of time necessary to develop a class for online learning, (2) imposing compounding stressors on faculty and students when caretaking responsibilities and personal illness are likely, (3) unknown reliability of Internet connectivity, and (4) unequal access to technology off campus. Requirements of accrediting bodies also played a role; in some instances, accreditation is partly based on curriculum delivered in person.

Open communication among jurisdictions

There is a fine line between open communication and nagging. Difficulty treading this line is heightened by norms not readily ascertained across jurisdictional and cultural boundaries, whether real or perceived. Whereas individuals at the UI are used to sending questions and inquiries directly to the person or entity they perceive capable of providing an answer, local and state agencies have long established chains of command and interorganizational protocol. The perception by the academic community is that local and state entities prefer bare chains of command to ensure efficient interactions. Strictly defined communication routes are generally applied only in emergency situations. The more commonly accepted route is to include additional individuals in communications and over-disclose; this route also assures that more stakeholders will be kept informed and able to provide input.

Recently, a public health emergency exercise organized by state and local agencies occurred in Iowa City in close proximity to the campus. The majority of Task Force members, including the chair and facilitator, were not informed of the exercise nor invited to participate. This communication breakdown illustrates the importance of including all major players when training activities occur, to ensure that relationships are built and roles understood prior to an actual incident.

Quarantine and isolation for student populations

During a public health emergency, it might be necessary to offer facilities for quarantine and isolation of students. The Response Plan identifies a dormitory where both of these functions are possible. When choosing an ideal location, it was imperative to identify

a building with a closed circulation system, parking facilities, and other features to minimize the risks of exposure and transmission. The final candidate, the Mayflower Dormitory, was the only residence hall on campus that most closely met the criteria set by the Health Care Services and Public Health subcommittees. The L-shaped building offers separate facilities that would meet the needs of both asymptomatic students requiring further observation and symptomatic students whose care needs require medical attention but not hospitalization.

TRANSITIONS

At the time of publication, additional transitions were expected. The top three administrators who began pandemic planning had left the UI. After two and a half years of intensive pandemic planning, questions surrounding criteria to determine when to suspend classes, grading policies, parameters for tuition reimbursement, and incident command continue to skirt clear answers. Some Task Force members maintain that these issues are firmly rooted in the realm of all-hazards preparedness questions, and are therefore beyond the scope of the Task Force. Other bodies insist that pandemic planning is a wasted activity, so lacking in merit that they will not even discuss such contingency planning. After several strategic planning sessions, the need to reorganize efforts became evident.

The Task Force has recommended that strong institutionalization of all-hazards emergency planning, rather than splintering specific issues, is critical. It has been suggested that a centralized office of emergency preparedness be created, with central administration to coordinate emergency planning across campus. This office would function as emergency management for the university. A multidisciplinary advisory committee, similar to the representation demonstrated by the Task Force, would meet quarterly with this proposed UI emergency management office. Following quarterly meetings, committee members would disseminate information to their respective unit, department, or college.

CONCLUSION

Emergency planning is an ongoing process that is being constantly redefined. Due to changing science, mutations in viruses, and other factors, there emerges a reality that portions of a pandemic influenza response cannot be thoroughly addressed in a comprehensive emergency plan. It is erroneous to assume that academic institutions should maintain an idle attitude

toward pandemic influenza planning. Significant improvements for all-hazards responses are evident because of participants' roles in pandemic planning. Emergency planning, training, exercising, and review are never truly isolated for the scenario at hand. Documentation of progress is a necessity to justify past expenditures, identify issues encountered, and map out future paths.

Though aligning individuals and organizations is a daunting, ongoing challenge, the UI is secure in the knowledge that it is better prepared to face a public health emergency today than at anytime throughout its history. Lessons learned, obstacles overcome, and activities supported throughout the process provide a valuable platform that can provide inspiration and guidance for colleagues to consider as they advance their own pandemic planning.

Christopher Atchison is Director of the University of Iowa Hygienic Laboratory and Associate Dean of the University of Iowa College of Public Health. Elizabeth Hosmanek is the Planning and Development Coordinator at the University of Iowa Hygienic Laboratory. Laurie Walkner is a Grants Coordinator at the University of Iowa College of Public Health. All are in Iowa City, Iowa.

The findings and conclusions in this report are those of the authors and do not necessarily represent the views of the University of Iowa.

Address correspondence to: Elizabeth A. Hosmanek, JD, University Hygienic Laboratory, 102 Oakdale Hall, H110, Iowa City, IA 52242-5002; tel. 319-335-4392; e-mail <elizabeth-hosmanek@uiowa.edu>.

REFERENCES

- Centers for Disease Control and Prevention (US). Colleges and universities pandemic influenza planning checklist. 2006 [cited 2008 Jul 8]. Available from: URL: http://www.pandemicflu.gov/plan/pdf/colleges_universities.pdf
- Association of Schools of Public Health. Pandemic influenza preparedness resource kit for academic institutions. Washington: ASPH; January 2007.
- Special Committee on Hurricane Katrina and New Orleans universities. Hurricane Katrina and New Orleans universities. *Academe* 2007;93:59-126.
- University of Iowa. Emergency notifications system: Hawk Alert System [cited 2007 Sep 8]. Available from: URL: <http://hawkalert.uiowa.edu>
- University of Iowa. Pandemic Influenza Preparedness Task Force [cited 2008 Jul 8]. Available from: URL: <http://www.provost.uiowa.edu/work/pandemic.htm>
- Iowa Department of Public Health, Upper Midwest Center for Public Health Preparedness. Prepare Iowa: learning management system [cited 2008 Jul 8]. Available from: URL: <http://www.prepareiowa.com/Public/default.aspx>
- Department of Homeland Security, Federal Emergency Management Agency (US). NIMS training [cited 2008 Jun 10]. Available from: URL: http://www.fema.gov/emergency/nims/nims_training.shtm
- Department of Health and Human Services (US). Community strategy for pandemic influenza mitigation [cited 2007 Feb 7]. Available from: URL: <http://www.pandemicflu.gov/plan/community/commitigation.html>