



LIAISON PUBLIC HEALTH NURSING PROJECT IN THE HOSPITAL OUTREACH UNIT

BACKGROUND

Reporting of communicable diseases is fundamental to the prevention, control, and monitoring of diseases in Los Angeles County (LAC). Data from disease reporting is also useful for planning and evaluating public health interventions and in setting priorities for the allocation of financial resources. In light of the potential threat of bioterrorist activity, severe acute respiratory syndrome (SARS), West Nile virus, and other emerging infectious diseases, the need for prompt and thorough disease reporting is now especially important. Delay or failure to report may contribute to secondary transmission of disease and is a misdemeanor (Health and Safety Code §120295). Yet despite state and local laws requiring medical providers to report communicable diseases to the local public health department, reporting is incomplete.

Numerous studies have cited complacency on the part of providers, due to lack of knowledge as to what diseases are notifiable and how to report these to the proper authority, and physicians' concerns such as their time involvement and patient confidentiality. In addition, providers that do report are often frustrated to find that there is no way to follow up on case reports that they have submitted and that there is no active process for feedback or follow-up [1, 2].

Ensuring proper and prompt disease reporting is especially difficult in LAC due to the large size of our jurisdiction. The LAC Department of Health Services (LACDHS) is the largest public health jurisdiction on the Pacific Coast and the second largest in the US. Two cities, Long Beach and Pasadena, operate their own public health departments; yet depend on LACDHS for indigent medical care, including hospitalization. The LACDHS Personal Health Services provides ambulatory and inpatient medical care for the uninsured (estimated at 2.7 million) through its four hospitals, comprehensive health centers, and district health centers. In 2004, there were 104 acute care hospitals, 77 with fully staffed emergency departments.

Origins of the Liaison Public Health Nurses Project: During the SARS epidemic in early-2003, the Liaison Public Health Nurses (LPHN) assisted with managing suspect SARS cases and working with the hospitals to ensure infection control was maintained. After the SARS situation had passed, it became clear that there was a need for a new hospital unit in ACDC. In November 2003, ACDC instituted the Hospital Outreach Unit (HOU). This unit would liaison with all hospitals in LAC to increase traditional disease reporting as well as enhance emerging infectious disease preparedness. The mission of the HOU is to enhance emerging infectious disease preparedness and response efforts and improve hospital disease reporting by hospitals in LAC through strengthened communications, collaboration, and consolidation of resources. In order to accomplish HOU mission, the liaison public health nursing project was developed and began implementation to enhance outreach and collaboration activities. In this project, five LPHNs have been assigned to collaborate with all acute care hospitals in LAC.

One of many goals of LPHN project is to open lines of communication and establish good working relationships between healthcare providers and public health authorities. These are essential to a robust system of surveillance and effective implementation of disease investigation and response activities.

The 2004 objectives of LPHN project included:

Objective 1: By the end of 2004, LPHNs will conduct site visits to all hospitals in LAC including Pasadena and Long Beach.

Objective 2: By mid-2004, LPHNs will identify strengths and weaknesses of targeted hospitals and identify barriers to disease reporting.



Objective 3: By mid-2004 and on an ongoing basis, LPHNs will promote improved disease reporting in targeted hospitals and the use of emerging technology systems and other resources sponsored by the health department.

Objective 4: By mid-2004 and on an ongoing basis, LPHNs will evaluate needs and, as appropriate, provide consultation to hospitals in developing plans, response protocols, and drills for urgent communicable diseases including emerging infectious diseases and potential bioterrorist threats.

METHODS

Regional Emerging Infectious Disease Preparedness Meeting: During December 2003, the HOU conducted four regional meetings. The purpose of these meetings were to: introduce the unit to the 120 hospitals of LAC, detail objectives for collaboration between the hospitals and public health, and assess how the hospitals were responding to respiratory illness preparedness. In addition, evaluations were collected and assessed at the end of each meeting. These meetings served as the basis for the following tasks conducted during 2004.

LAC Hospital Visits: Based on regional meetings and preliminary assessments, the first seventy-seven 911 -receiving hospitals were selected for needs assessment. Meetings with key personnel from identified hospitals were scheduled by LPHNs. In these meetings, the LPHNs explained the purpose of the program and sought support from hospital administration and Infection Control Professionals (ICP). After the hospital ICPs agreed to participate, the LPHNs initiated hospital visits as routinely and as needed.

Analysis of all LAC Hospitals: During 2004, the LPHNs met with ICPs, nurse managers, lab personnel, medical records personnel, and other health care providers and key hospital personnel at each assigned hospital. During their meetings, assessment of the knowledge, attitudes and practices (KAP) regarding disease reporting was conducted. LPHNs also performed assessments of various units (lab, emergency room, med-surgical floor, ICU, etc.). Through this assessment and additional discussions with the ICP, problems relating to disease reporting were identified.

Provider Education and Health Teaching: During 2004, the LPHNs provided information to hospitals on: 1) disease reporting, 2) regulations surrounding discharge of clients with communicable diseases to continuing care facilities, 3) clinical manifestations of relevant diseases, and 4) the role of public health through training sessions and/or informational materials. LPHNs disseminated educational and informational materials including posters, brochures, telephone stickers with disease reporting numbers, pocket cards with the list of reportable diseases, pens, and other social marketing tools. In addition, LPHNs provided focused and tailored outreach to educate hospital health care workers on urgent disease reporting requirements through lectures or one-on-one training sessions, as appropriate. The LPHNs also promoted and trained interested healthcare personnel on the use of online reporting, and communications systems. LPHNs have played an important role in referring to appropriate resources as needed.

Consultation: ACDC is viewed as the authoritative source of information, advice, and recommendations regarding the recognition and management of communicable diseases and other issues of public health importance. As such, LPHNs provide consultation in the development of plans, protocols, drills and exercises, and on going issues related acute communicable diseases including emerging infectious disease. LPHNs continuously attend various meetings (i.e., Association for Professionals in Infection Control, Infection Control Committees, conferences and seminars) as requested to provide information and recommendations on various issues.

Outbreaks and Investigation of Unusual Diseases: As needed, LPHNs assist other ACDC staff by expediting the exchange of information and performing health investigation, as requested, by reviewing and extracting information from hospital records, interviewing and obtaining epidemiologic data from clients, family members and health care providers. Under certain circumstances, LPHNs have interacted with hospital laboratory personnel to ensure that isolates are sent to the Public Health Laboratory as needed. In addition, LPHNs direct providers to key resources within DHS in order to address specific situations. LPHNs also provided guidance on proper infection control practices.



Promoting ACDC-Related Projects: LPHNs also promote and assist with many ACDC-related projects that require hospital participation.

- Web-based Confidential Morbidity Report (Web CMR). Web CMR is offered to all LAC hospitals including hospitals in Long Beach and Pasadena jurisdictions. The goals are to shorten response time, increase standardization and accuracy of CMR information, and create a secure, user-friendly, and effective environment that will encourage health professionals to comply with the state regulations on reporting communicable diseases. LPHNs have been educating healthcare providers about available web-based communication and training resources and have been providing trainings upon request. LPHNs have also been responsible for enrolling healthcare personnel, obtaining critical emergency contact information, and maintenance of personnel information from respective facilities. LPHNs will continue to educate ICPs and other hospital personnel on using the Web CMR and promote its continuous use. Currently, 130 ICPs in 77 hospitals utilize Web CMR and plans to enroll additional hospitals are underway. Half of the enrolled hospitals regularly report diseases and others report occasionally via Web-CMR. We expect that at least 80% of hospitals will regularly utilize Web-CMR by mid-2005.
- Sentinel West Nile Virus Surveillance: During 2004, an enhanced West Nile virus (WNV) Surveillance project was conducted. LPHNs recruited hospitals in the eastern part of LAC, the area most impacted by WNV, and selected as sentinel surveillance sites for encephalitis focusing on WNV infection. LPHNs facilitated the laboratory testing process, communications with hospitals and physicians and conducted more than 140 cases of patient interviews.
- Employee/Occupational Health Surveillance: The LPHN project established contact with employee/occupational health in hospitals in LAC and provided recommendations regarding worksite planning and the connection between employee absenteeism and disease surveillance. During 2004, an employee health surveillance letter was sent to all hospitals in LAC. Hospital employee health surveillance project promotion will be a continuous process.
- Emergency Department Syndromic Surveillance: ACDC conducts daily syndromic surveillance with emergency departments in sentinel hospitals in LAC. The Hospital Outreach Unit (HOU) is in the preliminary stages of assessing the timeliness and completeness of disease reporting from four syndrome categories: rash, gastrointestinal, respiratory, and neurological. The data from these assessments will provide a baseline of the current state of disease reporting in LAC and can be used to target resources to make improvements to the disease reporting system. In addition, the results from the assessments can be presented to providers and other mandated reporters to stress the importance of timely and complete reporting. Currently nine large hospitals participate in the daily syndromic surveillance. When an aberration or signal is detected, LPHNs follow-up and validate alarms and determine if further investigation is necessary. If further investigation is needed, LPHNs contact the ICPs and emergency departments to facilitate obtaining patient information. LPHNs conduct site visits, review medical records, and investigate the situation. All signals are investigated collaboratively by LPHNs and physicians in ACDC and acted upon appropriately.
- Coroner's Case Investigation: Daily, ACDC analyses the electronic data of unusual deaths received from the Coroner's Office. LPHNs investigate suspect deaths and review the data for diseases that may not have been reported through other sources. From November 1, 2003 through March 23, 2005, the LPHNs followed-up on 131 coroner cases.

DISCUSSION

Many notable accomplishments have been achieved by the LPHN project. During the initial phase of the project, hospital visits allowed for the creation of hospital profile and baseline assessment databases. The hospital profile database contains current general hospital information (e.g., addresses, phone numbers, and bed capacities), ICP information, and other key department directors' contact information. At any time there is a change of hospital and/or ICP information, hospital profile database is updated to reflect the changes. Any portion of the hospital profile can be shared with ACDC staff and other LAC programs under the discretion of HOU. The baseline assessment database contains a survey of questions to



identify knowledge, attitude and practices related to disease reporting. In general, ICPs are highly knowledgeable of disease reporting mandates, ICPs' attitude regarding disease reporting is often determined by their previous experiences with report receiving programs and units, and their disease reporting practices are sometimes affected (negatively and positively) by their previous experiences.

Through the baseline assessment, strengths and weaknesses of hospitals and barriers to disease reporting also were determined. Remarkable strengths are: 1) hospital ICPs and laboratories are knowledgeable of the disease reporting mandates, 2) ICPs interface with many hospital departments which makes the ICPs optimal contacts at hospitals, 3) ICPs identify reportable cases through several methods (e.g., rounds, lab reports, admission list) and 4) ICPs often are actively involved in staff and patient education. Prominent weaknesses and barriers relating to disease reporting are: 1) unclear disease reporting procedures (e.g., to which jurisdiction to report, which diseases to report, what constitutes as an outbreak), 2) difficulty with faxing documents repeatedly to different LAC departments/units, 3) most hospital departments, including some outpatient clinics, heavily rely on the ICPs to report cases which often overwhelms the ICPs, and 4) lack of knowledge of resources from LAC programs.

The initial hospital visits have been completed by the end of 2004 and follow-up visits will be conducted in 2005. Evaluation of the LPHN program will be a continuous process. As gaps are identified, interventions will be modified to resolve these issues. Regular feedback to hospitals are provided through a variety of resources (e.g., the Health Alert Network (HAN), monthly meetings with ICPs, etc.). Hospitals with good reporting practices will be acknowledged. Best practices will be identified and shared.

An analysis of the impact of LPHN Project on reporting rates and timeliness of reporting in targeted hospitals will be conducted a year after the LPHNs have been implementing interventions in targeted hospitals. Knowledge, attitudes, and practices of ICPs and other health care providers will be evaluated through surveys conducted prior to implementation of the program and repeated one year after implementation.

Inadequate disease reporting and lack of positive relationships between public health and hospitals may lead to: the propagation of disease throughout the county, ineffective interventions, delayed recognition of a possible bioterrorism event and ineffective response or other public health emergency. In efforts to increase efficiency of responding to a potential bioterrorism event and controlling spread of infectious diseases, LPHN project will attempt to enhance the traditional mandatory reportable disease system through education and process improvements in hospitals in LAC. LPHNs will continue to promote implementation of electronic interfaces relating to disease reporting and potential bioterrorism event response systems. LPHNs will also continue to establish relationship with hospitals by active involvement and communication with ICPs and other hospital personnel.

REFERENCES

1. Doyle T, Glynn MK, Groseclose, S. Completeness of notifiable infectious disease reporting in the United States: An analytical literature review. *Am J Epidemiol* 2002; 155(9):866-74.
2. Squires S, Aronson K, Remis R, Hoey J. Improved disease reporting: A randomized trial of physicians. *Can J Public Health* 1998; 89(1):669.