

MISSION HOSPITAL

Expanding Public Health Epidemiology in Western North Carolina

Final Project for SEPHLI

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Expansion of epidemiology in Western North Carolina was pursued in order to bring public health and hospitals in the region in to the “view” of the Public Health Epidemiologist so that regional epidemiology could be achieved. Public health surveillance capacity in this region has been strengthened as a result.

Abstract: This project was chosen because of the unique geographical placement of the Public Health Epidemiologist in Western North Carolina along with the desire of many local public health agencies to have their respective hospital's data incorporated into this position's scope of work. Since 2004, surveillance has been enhanced through electronic and "people" capacities all utilizing grant funds. The position in Asheville at Mission Hospital was meant to serve the entire region's public health agencies. However, the local hospitals data from respective counties was not part of the original agreement so the data "seen" and reviewed by the Mission Hospital PHE was only Mission Hospital emergency department surveillance data.

In response to local health departments urging for an expansion of surveillance, this project seeks to provide surveillance of Emergency Department data to regional hospitals. This is not done at present by any other PHE in the state. In order for this to happen, it will require agreements by several different entities. Those are: hospitals, public health, NC Data Link and NC DETECT.

This leadership development opportunity would provide me a chance to develop several leadership skills. These are my will to achieve a goal that would serve my region well. Other leadership skills I hope to develop as I move from my role as surveillance gatherer for 1 entity to a regional resource is: respect and becoming a global thinker. Another skill I needed to learn was to know when to be assertive and when to back away in order to keep the process moving toward its final end.

Background: In 2004 North Carolina created several unique public health capacities, all grant funded through CDC cooperative agreements, to better serve North Carolina if a bioterrorism or outbreak on a large scale occurred. All states were granted funds, only North Carolina chose this unique distribution and creative way to enhance surveillance in North Carolina. First, an electronic web-based surveillance system was created and called NC DETECT (North Carolina Disease Event tracking and Collection Tool). This system required the legislature

of North Carolina to pass a law stating that any hospital that collected certain data elements electronically would by law have to send them to the DETECT system every 12 hours. Some of the data elements agreed on were data elements such as: zip code, age, chief complaint, triage note (if collected), sex, hospital, date, time etc. This data would be aggregated and viewed by access levels. It would then be separated by a variety of way so that diseases and trends in disease could be monitored. The monitoring would take place according to position and location. Hospitals have hospital data views; public health has a view of their counties visits to Emergency Departments. The state could “see” the entire data set for North Carolina. 11 Public Health Epidemiologists were placed into the largest hospital systems in the state in order to monitor the greater than 60% of visits that came into these facilities per year. Weekly reports are sent to providers in the PHE region and to the state and local public health systems in their areas. This is meant to help close some gaps that exist historically in between hospitals, public health and local providers. Over the past 5 years, this surveillance system has become nationally and internationally known as one of the best surveillance systems as well as the PHE program which monitors a large part of it.

The problem in the Western Region is the rural nature of this geographical area. Many PHE hospitals serve few counties. Two PHE hospitals serve wide rural areas. These two are: Pitt County Memorial Hospital in Greenville and Mission Hospital in Asheville. There are 18 hospitals in the Western Carolina region bed size ranges from several hundred beds to twenty. None of these hospitals had the assistance of a PHE viewing their emergency department data. This is in fact an issue all over North Carolina. Many times small hospitals have one Infection Control practitioner who does many jobs as it relates to infections (employee health, construction and nosocomial infections among a few) mostly within the hospital itself and not outside (emergency department/clinics). Time to analyze data and trends in an emergency department is indeed a luxury that is not often afforded to these smaller of facilities. This then lead at times to public health and small hospitals questioning why a large facility would get an additional person (PHE) to monitor public health activities and not public health itself or some of

the smaller hospitals included. This all boiled down to availability of funds. There was enough to fund 11 positions state wide and the state had to put the position into the facility where they could analyze the most data and make the largest impact.

Project Description, Objectives and Methodology: The original goal of this project was to expand the public health epidemiology program from just Mission Hospital to all hospitals in the Western Region. This was going to be done by getting agreements from each hospital CEO to view aggregate data through NC DETECT and access to Data Link access. NC DETECT allows trending of aggregate data into graphs which show aberrations based on the CDC's CUSUM methodology. Data Link is a system that allows the secure exchange of electronic patient information to be share in-between hospitals in the Western Region of North Carolina. It is mostly used by clinicians at this point but the long term goal of Data Link is to allow access to "public health, physician offices, clinics, and other health care providers to create a longitudinal view of the patient's medical history." 1

Regional surveillance is within the grasp of our western region because of these unique systems that would help provide that PHE position to act as a liaison to all hospitals in this region. Using NC DETECT, Data Link and the PHE in combination would strengthen the public health capacity in this area by offering information exchange, data interpretation and feedback to each hospital and health center in the western region.

In February after firming up many ideas with my mentor, who is the health director in Henderson County, I approached the Chief Medical Officer at Mission Hospital. This position is ultimately manages the PHE at Mission Hospital. The idea was offered to expand this present job to a more regional view. The pros and cons were also discussed. The advantages would-be enhanced surveillance in Western North Carolina while the disadvantages would be less involvement in local issues at Mission Hospital by the position. The CMO welcomed a more regional approach as this would enhance healthcare in our region. So approval for the project from Mission was given. The next step was approval from public

health directors in the region. In Mid March, this project was presented to the Western North Carolina Health Directors meeting. It was well received by all. The presentation is attached. The next step was to approach Data Link and get an agreement to access hospital data. Multiple attempts were made in order to meet with WNC Data Link in order to personally explain this attempt at regional epidemiology. This group denied access for this project based on HIPPA concerns. To date no access to Data Link has been offered to the PHE at Mission Hospital despite multiple approaches. NC DETECT was always open to more surveillance and only needed the CEO approval from its respective hospital in order to “open up” a view to the Mission Hospital PHE.

In April of 2009, a new strain of Influenza was discovered in California. Research and Epidemiology of this new strain was traced back to originating in Mexico. It was then discovered that many months of unchecked Influenza disease had been going on in this country. A pandemic was at hand. Within 2 months of discovery we were in a pandemic level 6 which is the highest level of epidemic activity that can be had. As this disaster progressed, the project, at the request of the new state Epidemiologist was asked to be shortened in order to be able to ascertain the amount of work that would be added to the present PHE position. She requested that no more than 4 hospitals be added at the beginning. Also she requested that public health be on board locally which had already happened.

So with the new developments, I went back to my CMO and mentors to request advice on where it would be best to focus the surveillance activities for regional epidemiology. Two hospitals were already in my view which was: Blue Ridge Regional Hospital and McDowell Hospital. Two more could be added. Pardee Hospital in Henderson County was a good choice for expanding surveillance capacities for two reasons. One is that my mentor was the health director for this county and two was that the Medical Director for this county was also the head of the Infection Control Committee at Pardee Hospital

At the same time, Transylvania Hospital was a good opportunity due to that local health director’s support for PHE position. Both were approached at about the same time. The request was only for NC DETECT access to their hospitals data.

Also provided in this offer was that the PHE would be a resource for education on communicable issues or outbreak consultation.

I was invited to meet with the Transylvania County Hospital COO and other key members of the administrative team including their Infection Control practitioner and the Transylvania County Health Director. I was instructed to bring copies of the weekly flu report and weekly syndromic surveillance reports to share with this group. After a brief overview and discussion of the reports the COO did not see one negative to allowing the PHE at Mission to view their hospitals aggregate data only and then provide aberration documentation. Their data would now be included in the weekly reports along with McDowell, Blue Ridge and McDowell. When H1N1 was discussed, I shared a power point presentation that I had been using at Mission, the Infection Control Practitioner offered that it was too much for her to study and perform could the PHE at Mission be that reference for her hospital? It was agreed that this would be part of the deal also. I presented to their Medical Staff meeting the next week as well as educated many staff at this hospital earlier in the day. They now receive two reports a week and are connected to the local and state regions in a better way.

Pardee Hospital was offered this opportunity at the same time. As of today no agreement has been signed. It is under consideration by their Infection Control practitioner and CEO for the hospital. Given that the Pandemic is consuming much of everyone's time, these agreements may come in November or December.

November 5, I will go back and give an update to the Western North Carolina Health Director's meeting concerning the progress of this project concerning regional epidemiology surveillance/ sharing of data.

Results to date: The project was scaled back a good bit from its original intent but is moving forward. This is largely due to the fact that they original project intended to mine data in the same way that it is done at Mission Hospital which

would require medical records to be accessed. This was turned down by Data Link but there is still a good bit of support for this to happen ultimately.

What is happening to date is that 3 hospitals plus Mission are part of the PHE “view” in NC DETECT. All of their Emergency Department Data as well as other ICD-9 data codes are reviewed daily for aberrations and significant coding on discharge. Trends are monitored and fed back weekly to each hospital in the form of an individual report. An example is in this packet. In addition to individual surveillance reports, each hospital receives a regional report weekly that reviews important syndromes and discusses significant events for the hospitals for that week. If aberrations are noted at the hospital, the Infection Control practitioner is notified by email and communication as to the reasons for the aberration occurs. Sometimes there is enough information for the PHE to document the occurrence without this communication. All aberrations are documented in NC DETECT giving that Infection Control Practitioner a trial of epidemiology for that hospital. The Infection Control Practitioner also has access to NC DETECT.

Another enhancement that has come to these hospitals and other in the region is that since the Pandemic of H1N1 the PHE has visited most all of the hospitals in the region and either spoken to disaster planners, Infection Control Practitioners, staff and or physicians about H1N1 by power point presentation. This has been well received in the smaller facilities where again that one person does not have the time to spend creating presentations and researching this topics. This has helped the position become more of a reference position

This project plus the Pandemic has made the Public Health Epidemiology position in Western North Carolina more of the regional asset. This is what many in public health in our region wanted from the beginning of the PHE program in our area. The hope is that after the first of the year more hospitals can be approached and added as part of this regional view. The consultation is also an added a benefit to smaller hospitals. Overall this project of expanded epidemiology in Western North Carolina was pursued in order to bring public health and hospitals in the

region in to the “view” of the Public health Epidemiologist so that regional epidemiology could be achieved. Public Health Surveillance capacity in this region

This project was reviewed by Elizabeth Ohmen, Cancer Board IRB Department at Mission Hospital

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