

Research Presentation Paper

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Theory

The basic logic behind this program is to reduce the amount of time required to receive and process a call for service and ultimately reduce the amount of time required to respond to a citizen who is in need of assistance. Furthermore, it is believed that by combining all public safety communication into one facility there will be a reduced burden on the tax payer. Currently each dispatch center must maintain similar equipment in order to function. By combining all dispatch centers into one there will be no duplication of purchases for equipment that occurs now with multiple dispatch centers.

The theory behind this research proposal is to determine if combining all current dispatch centers into one centralized location will provide the public with a better service by decreasing response time and reducing cost.

Literature/Research Review

According to the Bureau of Justice Statistics there are 15,833 local and county law enforcement agencies operating in the United States (Bureau of Justice Statistics [BJS], 2009). The basic function of all law enforcement agencies is to preserve peace by responding to calls for help from the citizens in their respective communities. However, law enforcement is just one element under the public safety umbrella. Both fire protection and ambulance service can be included in this group. There are literally thousands of fire departments and ambulance services located in this country. Moreover, all public safety officials must somehow be dispatched to assist the person in need. To accomplish this task most agencies rely either on their own dispatch center or they partner with other agencies to provide the service. Therefore, thousands of

dispatch centers also exist, each using their own equipment, protocols and in most cases different hardware and software to communicate with their employees.

The use of different communication equipment alone creates an enormous problem when it comes to providing assistance to a victim in a timely manner. Take as an example the following quote appearing in Digital Communities titled, *Minneapolis 911 Center Wins National Award*;

When the bridge collapsed at 6 p.m. on Aug. 1, there were 13 operators and dispatchers on duty in the 911 center. Following the collapse, many off-duty employees came back to work to help. As the emergency response unfolded at the bridge scene, the 911 center helped process 113,000 radio transmissions on the regional 800 MHz trunked radio system that connected emergency responders. Even though there were tens of thousands of transmissions, only one high-priority transmission received a busy signal in the first six hours of the incident.

It is hard to imagine what type of chaos would have existed if there had been multiple dispatch centers with dispatchers trained at various levels of expertise and with equipment that is incompatible; however, that is exactly what is happening across the country.

As an example in Grant County, Indiana currently there are ten law enforcement agencies, twenty-three fire departments and two emergency medical service providers. Marion General Hospital is the main provider for medical care in Grant County and is one of two providers for ambulance service in the county. Furthermore, the Grant County Emergency Management Agency serves as the central coordination point for requesting mutual aid from

surrounding counties, as well as state and federal resources and is a division of the Indiana Homeland Security Office.

Additionally, all independent dispatch centers share one problem when it comes to responding in a judicious manner. Most of these dispatch centers must transfer calls from one agency to the other, depending on what type of assistance the caller needs. This alone greatly increases the response time for the public safety official who is sent to help.

Each community faces its own difficulties and potential disasters where communication is essential. Although, Marion and Grant County are unlikely to face the same bridge disaster which occurred in Minnesota, the county is located in North Central Indiana, which is a prime area for major storms like tornadoes. Certainly it is important to have the proper communication during disasters, but fortunately these types of incidents are rare. What is even more important is the day to day communication and ability to provide quick and reliable service to those who are in need and with the least possible financial burden to the public. Communities around the country are researching the centralized dispatch center concept as a way to meet these goals.

Take as an example Plainfield, Indiana, which is located in Hendricks County just outside of Indianapolis. The communities located in Hendricks County were facing the same issues that Grant County faces today; multiple dispatch centers, call transfer issues, incompatible equipment, and duplication of equipment. In his article titled, *Hendricks County, Ind., Consolidates Police, Fire and EMS 911 Dispatching*, Jim McKay (2008) gives the example of how each agency wanted to keep their dispatch centers but update equipment to enable them to be able to communicate with each other. During the process they learned it would cost over \$12 million to meet this goal; however by centralizing into one facility they were able to build a new

center and purchase all of the desired equipment for under \$8.5 million. Furthermore, McKay quotes the new executive director, Larry Brinker who says “In the past, a 911 call might get transferred two or three times before it got to the right place, now, all 911 calls come to one location, and the call-taker enters the information into the computer”. The issues are the same no matter what community you visit – time is being wasted transferring calls and agencies must find a way to lower cost but still provide the needed service.

This brings us to several questions as we try to decide whether or not centralizing all dispatch functions into one communication center is the best practice for the public safety agencies involved and the general public.

Research Questions

1. Does centralizing all public safety communications into one facility reduce the amount of time it takes to respond to the need of the caller?
2. Does centralizing all public safety communications into one center provide for better communication among all existing public safety agencies?
3. Does centralizing all public safety communications into one facility reduce the fiscal impact on local taxpayers?

Research Tools

In order to know whether or not the centralized dispatch center concept is successful we must have a way to measure the outcome. In the program proposal I listed the outcome goal as the reduction in the amount of time wasted on transferring emergency calls from one location to another, thus providing potential lifesaving help to the citizens of Grant County in a reduced amount of time. I have listed three questions I feel are important in measuring this outcome goal.

I believe the best way to answer questions one and three is to use a pre-test and post-test. As for question two I believe the best measurement tool is a survey among all the public safety employees in Grant County.

Tools to be used:

1. A pre-test and post-test
2. A survey

Control Group/Comparison Study

Although I have used other communities to show success that can be achieved by centralizing dispatch centers, I believe there may be too many variables to compare their data against the data from Marion and Grant County. As an example; it is difficult to compare response times from one geographic location to another because of terrain differences, traffic patterns and perhaps the size of the communities can skew the time it takes to respond to a call for service. Furthermore, equipment differences from a center located in Plainfield may increase or decrease the time compared to a center located in Marion. Therefore, I chose to use a control group which will involve using data collected from all the current dispatch centers and comparing it to the data collected after the new centralized dispatch center is operational.

In most processes there are limitations, this research model is no different in this aspect. We may be somewhat limited in how we can retrieve data that has been saved -- such as transferred calls from one agency to another. The data is there; however it will take some additional manpower to recover it using the current system. Second, in the survey it may be difficult for the respondents to remember the exact number of incidents related to some of the

questions. Third, it will take additional manpower to research and obtain a list of all the equipment that has been purchased for all the current dispatch centers.

Although there are some limitations, most can be overcome in time by assigning one person to research and compile the information needed to complete the process. Finally, the survey will include only those individuals who are adults and current employees of the departments involved in the centralization process, therefore there will be no problems requiring them to complete the survey.

Research Methodology

Question 1:

Telephone call information for one year prior to moving all dispatch functions will be gathered and compared against the same telephone call information for one year after the move. In particular the amount of time it takes to transfer a call from one location to another will be compared between the two periods to see if there is a reduction in time.

Furthermore, the number of transfer calls between agencies for one year prior to centralizing will be used to compare to the numbers after the move. There should be a stark difference, considering it is likely there will be very few transfer calls after the move has been made.

Question 2:

This question is a little more difficult to quantify, but I feel is critical to the overall success of the project. Currently all of the public safety agencies use different radios, computers, and software. To better communicate and further reduce reaction time of the first responder it is critical that all of the equipment works together. Therefore, included in the proposal to centralize

dispatch centers is the agreement that all public safety agencies will coordinate their equipment purchases and begin moving toward using the same equipment or at least equipment that is compatible.

A short survey with questions that is relative to communication issues will be used both before and after the move to a centralized dispatch center. An example of some of those questions is as follows:

1. How many times during the past 6 months have you been unable to communicate with another Grant County agency due to incompatible equipment and/or software. There will be a range between zero and ten listed on the questionnaire.
2. Do you feel communication issues between agencies have jeopardized the safety of any employees or citizens? This will be a yes/no question with space to elaborate.

The survey will be composed of five to ten questions and will be given to all current public safety employees who were employed at least six months prior to the move. A second survey will be given to the same employees one year after the move is complete and equipment is standardized.

Question 3:

We will gather a detailed list of all communication equipment purchased by all participating agencies from a period of one year prior to the move. This list will contain the type of equipment and cost associated with the purchase of the equipment and the maintenance cost for keeping the equipment updated and in good working condition. As a comparison a similar list will be kept for all equipment purchased after the move to the new center. After the center has

been open for one year this list will be used to compare the cost against the list prior to the opening of the communication center.

A committee will be created with a representative from all participating agencies along with one representative who is not an employee of any of the governing agencies. This committee will be responsible for gathering the data, creating the surveys, administering the pre-test and post-test, and for analyzing all results.

Time Frame and Dissemination Plan

The time frame for measuring the outcome will be one year prior to centralizing all dispatch centers and one year after the move has been complete. During this time period, data will be gathered by using a pre-test, post-test and survey. Once all information is gathered and analyzed the final results will be disseminated using the following communication channels;

1. Webpage
2. Media release
3. City and County council meetings
4. Marion Police Department facebook page
5. Yearend report
6. Reports submitted to funding agencies

It is estimated that the final results will be available six months after the post-test and final surveys have been submitted, analyzed and the final report completed.

Use of Findings

Once the move to a centralized dispatch center is complete it is highly unlikely there will be a return to multiple centers. However, all research results will be used to determine how effective the process is and in what areas improvement can be made. If for example the results from question one show we have improved in the amount of time it takes to dispatch a call for help but the improvement is not as great as anticipated, or there is still too much time required to get help to the caller, then we will look for other ways to improve this time. Perhaps additional training needs to be done with the dispatcher or a change in equipment or software is needed to speed up dispatch time.

The same can be said for the cost savings associated with question three. If in the end we save very little or no money then we will need to use the research information to determine why this is the case and what can be done to improve in this area.

The important thing in this process is that the research information is used to show us where we came from, where we stand today, and where we need to go moving forward. We can't simply do the measurements and not use the results to help us improve.

Conclusion

There are many examples of why communities are looking at combining dispatch responsibilities in their county and even in a region. I have discussed but a few in this research paper and in the program proposal. The questions and concerns are nearly the same no matter which project you look at. Furthermore, the results are also similar in that by centralizing all of the dispatch duties into one location provides for a more timelier response to the caller, better

Cliff Sessoms

communication between agencies, and a reduced cost to the tax payers in that community. There is no reason to believe the same will not be true in Marion and Grant County, Indiana.

References

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